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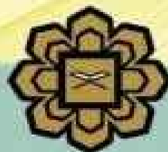

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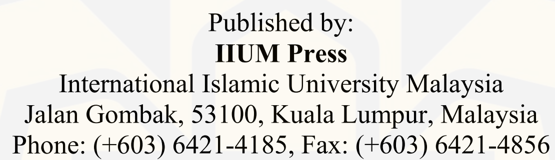

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Risk-Taking in Public versus Private Banks: Evidence from Islamic Banking

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Abstract

This study examines risk-taking by publicly traded and privately owned banks in an Islamic banking sector employing a diversified international sample of 133 IBs across 35 countries. Unlike the vast majority of previous research, this study uses ordinary least squares (OLS) and Heckman's two-step models to analyse a comprehensive risk-taking by two proxies. It investigates the risk and stability features using the credit risk and Z-score as the insolvency proxy. The study finds that publicly traded banks engage in more risky activities than their privately owned peers. The study further analyses the link between ownership structure and risk in Islamic banks, finding that state ownership shows that it is not a determinant in taking risk differences. On the other hand, institutional investors are more likely to engage in risky activities when they hold higher stakes. Despite this, the results provide some advice to the financial actors in their attempts to deliver information to the risk-taking practices in concert with regulators and international policymakers.

Keywords: *Public and private bank; Islamic banking; Risk-taking*

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1. Introduction

The impact of the financial crisis of 2007–2008 has shifted banks to focus from short-term profit maximisation to long-term sustainability. In response to the crisis, banking regulators worldwide implemented various policies intended to monitor banks' risk-taking behaviour, minimise the crisis's impact, and ensure the financial sector's long-term stability (Abedifar et al., 2013).

Furthermore, banks' business models vary from other businesses where the banks' model generates their value for the liabilities where the deposits are the most crucial aspect for the banks (DeAngelo and Stulz, 2015). Banks generate liquid claims, and the worth of a bank is determined by the success of the profit generated by these claims (Stulz, 2014). Deposits determine the bank's value; the more liabilities, the more deposits from which the bank may create more significant profit. Hence, the bank's ability to issue claims valued for its liquidity is conditional on its risk.

Consequently, the risk of these claims is intrinsic to banks' business models rather than the other business (DeAngelo and Stulz, 2015). Thus, banks can take risks that have an ex-ante risk. The banks will assume the risk based on the status of the deposits to meet the expectations of their shareholders; however, the risk will not depend just on loans issued from deposits, but from any source of liquidity, such as bonds or Sukuk. Therefore, banks may be able to assume greater risk (Falato and Scharfstein, 2016). Thus, the banks cannot flourish without taking risks (Jiménez et al., 2013).

Furthermore, market-dominant banks typically take on less credit risk and have a lower possibility of default. Capital requirements generally lower risk, but this effect is greatly diminished or even reversed for banks with market power (Agoraki et al., 2011). The banks with market power will be more cautious than the other banks in taking risks to maintain a reasonable stock price (Falato and Scharfstein, 2016). In general,

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reducing risk would mean passing up on important initiatives contrary to what shareholders care about; thus, improved risk management cannot be defined from the shareholders' point of view.

In Islamic banking, the Islamic Bank (IB) comes with a unique set of hazards, as several studies have shown. For example, Errico and Farahbaksh (1998) argue that prudential supervision and rules for Islamic banks should focus more on operational risk and transparency. For example, Islamic banks may not be able to reduce credit risk by requiring customers to post collateral since their relationship is based on partnership; moreover, they lack sufficient control over projects funded via *Mudarabah*.

Furthermore, the world has observed various evolutionary stages in the field of banking; currently, it can be seen substantial growth in Islamic modes of banking and finance. (Reuters, 2017) reports that the assets of Islamic banking increased to $2,524 bn at the end of 2018 from $1,746 bn in 2012. The assets are expected to grow 30% by 2023. In addition, Islamic banking experienced more rapid growth than conventional banking after the 2008 crisis. Islamic finance extended to include non-Muslim countries. The extensions have made it more critical to rapidly develop a broad array of innovative solutions and literature demands (Hasan and Dridi, 2010).

Islamic financial principles have evolved based on Islamic rules. The rules are taken under the basis of Shariah law. Islamic financial regulations forbid payment or receipt of (Riba), which is the payment or receipt of interest (Obaidullah, 2005). The essential principle of Islamic finance is *Fiqh Al-Mu'amalat*, which mainly categorises Islamic finance. The first type of Islamic finance is the debt-based financing (DBF): "the financier purchases or has the underlying assets constructed or purchased and then this is sold to the client". The second type of financing is lease-based financing (LBF): "the financier purchases or has the underlying assets constructed or purchased and then rents it to the client". By the end of the rental period, the assets will be transferred to the client. The third type of financing is profit and loss sharing (PLS): the financier is the partner of the client, and the realised profit or loss is shared according to pre-agreed proportions (Abedifar et al., 2013; Ghazaly, 2016).

The PLS is expected to generate a high profitability level with higher risk (Kuppusamy et al., 2010). Attributed to that, the Islamic banks' credit risk cannot be mitigated due to their relationship as a partnership. In addition, they lack sufficient control over project management due to PLS financing rules (Khan and Ahmed, 2001). Excessive risk-taking may bring distress to the banks, increasing instability and risk. According to (Barry et al., 2011), banks are towards excessive risk-taking due to inherently unstable banking. More specifically, the market discipline variance and access to capital markets are important reasons for banks to be public. I investigate the characteristics that determine the risk-taking behaviour of publicly traded versus private listing status. A public bank may be exposed to capital market forces and, thus, endeavour to promote incentive risk-taking. The paper defines as "public" those banks whose stocks are publicly traded on the stock exchange, while private banks are all other banks.

To test my main conjecture, I use a diversified Islamic banking sample of 133 banks from 35 countries; 47 of the banks are publicly traded, and 86 are private banks. The study period extends from 2010 to 2018. Credit risk is the first proxy I determine in this paper. Credit risk is fast becoming a key instrument in the quality of loans. Furthermore, it has been used in previous studies (Abedifar et al., 2013; Altunbas et al., 2007; Lepetit et al., 2008). In addition, I use the Z-SCORE and Z as insolvency risk indicators. The positive relationship for the insolvency risk proxies is related to the probability of bank solvency. These indicators have been widely presented in previous studies (Boyd and Graham, 1986; Lepetit et al., 2008; Nichols et al., 2009; Samet et al., 2018). I find that publicly traded Islamic banks exhibit higher risk-taking than private equivalents (Laeven and Levine, 2009; Tran et al., 2019). The disciplining mechanism of the public banks traded influences the result. I use several control variables for the bank level and country level (Abedifar et al., 2013; Barry et al., 2011; Djankov et al., 2007; Kane, 2010; Masson et al., 1998; Michalopoulos and Papaioannou, 2017; Samet et al., 2018).

To my knowledge, no research has addressed whether risk-taking is different for publicly and privately banks traded under Islamic banking. I compliment the works of (Abedifar et al., 2013; Aggarwal and Yousef, 2000; Beck et al., 2013; Čihák and Hesse, 2010; Hasan and Dridi, 2010; Mollah et al., 2017). These studies are investigating the variation between Islamic and conventional banks (CBs). This study aims to extend the current literature and investigate the differences between Islamic public banks and risk-taking. A public bank's structure affects bank risk-taking and profitability in several directions. First, I work on a more precise classification of risk proxies by considering the credit and insolvency risks. Second, I consider the market

influence of bank risk-taking behaviour by separating my sample into public and private banks. Third, I consider the influence of each credit and insolvency risk component by investigating the components. Finally, I classify shareholders by considering the equity held by the state and institution.

2. Literature Review

Most previous studies explored the relationships between IBs and CBs concerning risk-taking. For instance, Beck et al. (2013); Bourkhis and Nabi (2013) indicate that there is no significant difference between IBs and CBs in their commercial focus. However, Abedifar et al. (2013), using a sample consisting of 553 banks from 24 countries between 1999 and 2009, report that IBs face additional risks because of the complexity of Islamic forms of financing and the limits on their fundraising, investing, and risk management operations. Therefore, it can be surmised that the IBs tend towards higher risk-taking. In addition, recently, Bektas et al. (2022) have found that the banking practises, riskier products, and underdeveloped legal frameworks of the IBs are less stable than their CBs counterparts.

On the other hand, Bourkhis and Nabi (2013) found that the IBs have a more prominent intermediation ratio and a greater capital-asset ratio, indicating a more cautious attitude to risk. In addition, Hasan and Dridi (2010) concur with Bourkhis and Nabi (2013) that the business models of IBs mitigated the effect of the financial crisis on their profitability. In the same context of the global crisis, Samet et al. (2018) found that the conventional publicly traded banks took a higher risk during the recent crisis in 2008. The study sample has an international bank sample consisting of 6,816 commercial banks from 77 countries. However, the study found that publicly traded banks take less risk due to the disciplining mechanism during the stable time. In addition, Tran et al. (2019) support the findings of Samet et al. (2018), who found that regulatory pressure influences limiting risk-taking by undercapitalised listed banks.

Correspondingly, Chang and Mais (2000) argued that managers in publicly traded banks, in particular, tend to preserve their reputations by being risk-averse to maintain their careers at a professional level. A recent study (Asutay et al., 2020) is consistent with the study by Chang and Mais (2000) where they examined 120 IBs from 21 countries over the period between 2000–2013. They found that the regulation and supervision proxies influence risk-taking negatively. Hence, the regulatory and supervisory environment can lower the risk-taking of the IBs. This point presents the higher importance of publicly traded banks with regard to risk-taking. The higher regulatory and supervisory environment for the market will lead to lower risk-taking for these banks.

On the other hand, privately owned banks are monitored by a small group of shareholders. Privately owned banks are also more likely to use greater caution and closely monitor bank management due to their limited shareholders. In addition, the ownership of privately owned banks is more likely to be concentrated among a limited number of shareholders (Iannotta et al., 2007). The concentration of the shareholders tends to provide a higher fraction of the benefits (Tran et al., 2019).

Furthermore, public equity is more liquid and cheaper to raise than private equity, stretching their flexibility to invest in risky projects with a higher expected return. In addition, the flexibility of the capital allows publicly traded banks to seek financing more quickly than a privately owned bank could (Dewatripont & Legros, 2005). In addition, the increase in risk will be based on the publicly traded banks that align the objectives of faster growth in order to achieve higher returns (Barry et al., 2011).

Empirically, Tran et al. (2019), in an interdisciplinary study, took a large panel of U.S. bank holdings from 2001–2015 and compared risk-taking behaviour among these banks. The evidence reviewed in the study by Tran et al. (2019) found that the asymmetry in information and agency problems substantially differ in terms of the banks' stability. The study found that publicly traded banks became riskier than their privately owned bank peers during the last crisis in 2008. In addition, the researchers found regulatory pressure influences limiting risk-taking by undercapitalised listed banks. In addition, managers can benefit from the banks with more risk due to the bonuses and stock options open to them (Cheng et al., 2015; Mehran and Rosenberg, 2007).

These consequences have been shown in publicly traded banks on the New York Stock Market Exchange (NYSE) by Laeven and Levine (2009) and supported by Nichols et al. (2009). They found that publicly traded banks earn lower returns per unit of risk than privately owned banks. Hence, for a publicly traded bank to fulfil faster growth, the bank must take on more risk. In addition, the risk may take by raising the equity capital where the publicly traded banks can issue new equity through easier transactions in the publicly traded market (Nichols et al., 2009). However, there is a dearth of evidence on public and private Islamic banking, with most

earlier studies comparing Islamic banks to conventional banks or focusing exclusively on conventional banks (e.g., Barry et al., 2011; Bourkhis and Nabi, 2013; Hasan and Dridi, 2010; Nichols et al., 2009; Samet et al., 2018). Hence it demonstrates the need for more study on the benefits and contributions of Islamic banking to fill the gap and investigate the different risk-taking by Islamic banking, where the first study considers this investigation.

3. Conceptual Framework

The 2008 financial crisis and ensuing economic slump were mainly blamed on the banks' excessive risk-taking. Hence, more attention has recently been focused on agency theory problems and risk-taking. The nature of the various shareholders' objectives and issues of conflict of interests is one of the factors that have given rise to the agency theory and risk-taking problems (Jensen and Meckling, 1976).

Market discipline is defined as “the effect of publicly available market signals from bank-issued securities that lead to less risk-taking by the issuing banks" (Kwan, 2004, p. 98). Hence, due to publicly traded bank securities, capital risk will cause market fluctuations, and the banks’ excessive risk-taking behaviour will be visible to the public (Abedifar et al., 2013; Tran et al., 2019). Therefore, the discipline imposed by capital markets may make publicly traded banks take less risk than unlisted banks. Risk-averse investors would be able to appropriately evaluate the risk of a bank and modify the price of securities if the market signals are available (Tran et al., 2019). The banks will reduce risk-taking to follow the market discipline to avoid any issues that might reflect negatively on the stock prices instantaneously (Falato and Scharfstein, 2016). Thus, the signals generated by publicly traded securities in the capital market have the capacity to discipline managers and address any agency issues. Hence, concerning regulatory reactions, publicly traded banks are supposed to be more responsive because they are publicly traded and, therefore, less risky than privately owned banks (Kwan, 2004).

One of the agency theory's major issues might arise due to the agents' and principals' risk-taking. These problems will create a higher profitability risk for publicly traded banks (Barry et al., 2011). The risk-taking behaviour of publicly traded banks is affected by the separation between the agents and principals where the ownerships are dispersed. In addition, the easy access to the capital market may potentially lower the conservative approach to risk-taking by the agents to maintain their benefits such as bonuses and stock options (Beatty et al., 2002; Burgstahler and Dichev, 1997).

Furthermore, credit risk can place pressure on publicly traded banks in various ways. The intense competition between banks erodes margins and lowers the banks’ bottom lines. Managers may sacrifice credit evaluation standards and expand loan growth, thus causing a rapid increase in the bank’s profitability (Das and Ghosh, 2007). Any issues related to the portfolios of publicly traded banks will affect the stability of the banks by reducing their assets and equity (Berger et al., 2017). In addition, information regarding the quality of the loan loss reserve showed a high hedge for the publicly traded banks from the problem loans (Nugroho et al., 2021). In this circumstance, the loan loss reserves would reflect cash flow losses in the loan portfolio (Walter, 1991).

The second major difficulty with agency theory that affects publicly traded banks is that their owners are more scattered. (Gropp and Köhler, 2010) found that the ensuing separation of publicly-traded banks' control governance procedures will increase the information asymmetries greater than their privately-owned peers (Beatty & Harris, 1999). Consequently, information asymmetry will result in many risk factors, including capital risk, credit risk, interest rate risk, bankruptcy risk, and exchange rate risk (Nichols et al., 2009).

H1: Publicly traded banks show more risk-taking than privately owned banks.

4. Research Methodology

Sample construction

The sample begins with all the Islamic banks appearing in the central banks of the countries of the study and Eikon and the banker database websites. The sample was sorted by discarding all the banks with five consecutive years of missing financial data and those that had been established for less than three years. The same method was undertaken in previous studies (Farook et al., 2011; Mallin et al., 2014; Mollah et al., 2017). After the sample was sorted, it consisted of 133 Islamic banks from 35 countries.

I use the SNL data to find several data related to my sample of banks. First is the classification of being

Publicly traded and privately owned [1]. To identify the bank's ownership, I collect the ownership data from the annual reports due to the lack of data from other databases. I collect the proportion of the governments or institutions' ordinary shares when it is at least 5% of the bank shares to the bank's total shares, which is consistent with (La Porta et al., 2002; Morck et al., 1988). The data of the ownership sample support my assertions that a public bank is more likely to have more dispersed equity ownership, while ownership will be closely held among smaller numbers of shareholders in private banks. The banks are in diverse countries, as in Table 1.

Measuring bank risk-taking

My primary risk-taking measurements are classified into two risk-taking proxies. The first proxy is the credit risk, and the second is the insolvency risk. Credit risk is represented by the first indicator, LLR, of the ratio of loan loss reserves to gross loans. The second indicator is the PL, which presents the ratio of problem loans to gross loans. The third indicator, NPL, presents the ratio of impaired loans to gross loans.

Essentially, the loan loss reserve percentage should be at a suitable degree so as not to affect the bank stock prices and reduce assets (Ng and Roychowdhury, 2014). On the other hand, the loan is considered a problem loan in the financial statements when the borrower is more than 30 days past due for a scheduled payment (Walter, 1991). Impaired loans are loans in which the banks will not collect all the principal or in which the interest payments will also not be paid according to the loan contract terms (Walter, 1991).The credit risk characterises the quality of a bank's existing loans; the indicators are widely used in the empirical banking literature (Abedifar et al., 2013; Altunbas et al., 2007; Angbazo, 1997; Kwan and Eisenbeis, 1997; Lepetit et al., 2008).

The Z-SCORE symbolises insolvency risk, which is the logarithm of (ROA + CAR)/ σ(ROA); ROA is equal to net income divided by the average total assets, CAR is equal to equity divided by total assets, and σ(ROA) is the standard deviation of ROA. The second indicator of the insolvency risk is Z, which is the logarithm of (100 + ROE)/ σ(ROE); ROA is equal to net income divided by the average total equity, and σ(ROE) is the standard deviation of ROE, while Z-SCORE, and Z proxies represent the bank stability and distance to insolvency.

Consequently, a higher Z-SCORE and Z measure indicates higher stability of the bank. The Z-SCORE and Z standard deviation must fall below their expected value; this will cause a depletion of its equity and make the bank insolvent. Based on the absolute values of the Z-SCORE and Z, I use the logarithm to control the outliers and skewness of the distribution. The indicators Z-SCORE and Z are used widely by, for instance, (Barry et al., 2011; Boyd and Graham, 1986; Goyeau and Tarazi, 1992; Laeven and Levine, 2009; Lepetit et al., 2008; Nichols et al., 2009; Samet et al., 2018).

Bank and country level independent variables

One of the study's aims is to analyse how the different types of shareholder interactions impact banks' risk-taking. In my model, I investigate the subsidiary influence. The loan portfolio of the subsidiary might be structured as a risky portfolio due to any failed issues that will not be viewed as a bank's failure (Abedifar et al., 2013). On the other hand, the state ownership (SOE) and Institutions ownership (INS) projects may be considered risky as a result of the investors requirements (Lassoued et al., 2016; Shleifer, 1998).

I regress my risk-taking measures on the dummy variable (Public), which equals one if the bank is publicly traded and zero if it is a private bank. I control for several bank-level variables that have been shown to affect the cross-sectional differences in bank risk-taking (Houston et al., 2010; Laeven and Levine, 2009). I use Non-Interest Income to explain the importance of the loan activities. The bank may lose its focus on loans, which indicates the importance of non-interest income businesses (Lepetit et al., 2008). The second control variable is Cost Inefficiency. The inefficiency of the bank heightens the bank risk. A bank with greater cost inefficiency requires higher net interest margins from loan activities, resulting in losses in efficiency (Kwan and Eisenbeis, 1997). The larger banks can be riskier because they can extend their work in risky transactions (Kane, 2010).

In addition, the banks' ages in this study are defined by using two dummy variables. A Middle-Aged Bank takes a value of one when the bank has been operated for three to seven years and zero otherwise. For the variable Mature Age Bank, a value of one is assigned if the bank has operated for more than seven years and

[1] Publicly traded banks are publicly quoted banks (i.e., banks whose stocks are traded on a stock exchange). Privately owned banks are all other banks.

zero otherwise. The bank's age may present advantages in terms of being more efficient and less risky. The experience and informational advantages are higher with mature banks. Conversely, younger banks will face more burdensome regulations that will be caused operation cautiously (Abedifar et al., 2013).

To obtain a deeper look at how the relation between bank listing status and risk-taking may impact a country's institutional environment characteristics, I include a different country-level variable. Common, a dummy variable, equals one if the legal origin is common-law tradition countries and zero otherwise. I follow (Cole and Turk-Ariss, 2018; Samet et al., 2018) in terms of control for legal found that common-law tradition countries allocate significantly higher portions of their assets to risky loans than do their peers in civil-law-origin countries. I also include the inflation rate of each country to illuminate the stability of the economy. The economy's stability will be influenced by the inflation rate that will be affected by the credits. Higher inflation will lead to lower loan demand, which will affect the loan portfolio (Djankov et al., 2007; Masson et al., 1998). The variable of the GDP per capita is the natural logarithm of the real GDP per capita in U.S. dollars. The GDP is the proxy for the size of the economy, measured as the natural logarithm of the real GDP in U.S. dollars. Because the study includes diverse countries, including less developed, developed, and emerging, the countries will not meet the exact economic needs and sources (Djankov et al., 2007).

The study examines the relationship between bank risk-taking and the listing status of Islamic banks. I regress bank risk-taking proxies on bank listing status, bank-level control variables, and country-level control variables. The regression is the ordinary least squares (OLS) regression, correcting for robust the stander errors. To control for potentially country-level explanatory variables, I include country-level variables.

$$Risk\ taking_{it} = \alpha_i + \beta_1 Public_{it} + \beta_2 + Ownership\ variables_{it} + \beta_3 Bank - level\ variables_{it} + \beta_4 Country - level\ institutions_{it} + \varepsilon_{it}$$

Where i subscripts denote individual banks and t symbolises the time measurement. Risk-taking is divided into two proxies. The first proxy is the credit risk, and the second is the insolvency risk. The first proxy (credit risk) is represented by the first indicator, LLP, PL, and NPL. The second proxy is Z-SCORE and Z.

Endogeneity between listing status and risk-taking

To make further informative inferences about the research data, the sample uses robustness checks. The study potentially has an endogeneity problem in the regressions because banks that choose to be publicly traded or privately owned depend on their expectations regarding changes in growth and profitability. As stated at the beginning, endogeneity occurs when a bank's anticipated investment prospects and aspirations for future development and profitability impact its decision to be public or private, which in turn affects its capacity to produce growth and profitability. The study estimates and controls for the chance that a particular bank will be public or private by using proxies for the public/private decision determinants. To control this potential reverse causality (i.e., endogeneity) problem, the study follows prior literature (Barry et al., 2011; Nichols et al., 2009; Samet et al., 2018). The study uses Heckman (1979) two-stage approach to correct biased estimates resulting from a non-random treatment effect.

5. Results and Discussion

The statistical summary percentage for countries:

Table 1 shows the dominance of some countries. The sample contains 47 public banks and 86 private banks. The table shows that the Thailand bank is the furthest from LLR, with an average LLR of 13.2%; however, the lower banks that are closest to problem loans are in Thailand. Regarding the impaired loan, the bank in Kazakhstan shows no impaired loan issues; however, the Bahamas shows the highest impaired loan at 17%. The Philippines' bank is the furthest from default, with an average Z-SCORE of 5, followed by Qatar with a Z of 4.44. Conversely, Thailand's Islamic bank is the riskiest bank of the sample, with an average Z-SCORE of only 0.76 and -0.67 for Z.

The statistical summary percentage for the full sample

Table 2 presents descriptive statistics for the full sample and t-statistics for differences in the covariates for all sample years. T-tests are used to analyse the relationship between the public variable and the other variables. The study is divided into two risk proxies. The first proxy is the credit risk and consists of three indicators. The

first indicator is the LLR, which has a mean of 4.39%. This result is consistent with the previous study by (Abedifar et al., 2013). Also, PL, has an average of 6.13%; however, it has more than its reserve by 3.3%. The NPL indicator also has a higher percentage by its mean of 4.45%. This result is consistent with the previous study by Abedifar et al. (2013), as they reported 6.75% of the LLR by 118 IBs, while the NPL have 8.31, which suggests that the IBs have a higher NPL than the reserve.

On the other hand, Table 2 also shows that the mean of Z-score is 3.33. In contrast, the Z has a mean of 3.09. These proxies show the IBs are stable and not close to insolvency. Compare the findings with one of the extensive IBs sample studies by Mollah and Zaman (2015) in which they found the IBs have a Z-score of 2.77. Hence, these proxies show the IBs are stable and not close to insolvency. The Public is 35% of the sample. In comparison, the subsidies are higher, with a mean of 50%. The SOEs have a mean of 18%, which tends to indicate that the IBs have a considerable amount of state ownership. This result is consistent with Grassa et al. (2020), which found 71 IBs owned by state ownership with 16.3%. In contrast, the INS has a higher number of Islamic bank shareholders by 24%.

Table 1: Descriptive statistics by the country

Country	Obs	Public	Private	LLR	PL	NPL	Z-score	Z
Afghanistan	1	0	1	–	–	–	2.52	2.26
Algeria	2	0	2	3.62	3.86	–	3.33	3.82
Bahamas	1	0	1	12.7	14.9	17.1	2.55	2.80
Bahrain	15	5	10	6.43	9.39	8.84	3.27	2.68
Bangladesh	7	7	0	4.86	13.4	9.64	3.23	3.64
Brunei	1	0	1	4.58	5.79	9.49	4.30	4.06
Egypt	3	3	0	8.60	15.5	5.67	2.00	1.92
Germany	1	0	1	0.36	0.00	–	2.95	1.69
Indonesia	9	2	7	2.29	3.46	4.46	3.28	2.91
Iraq	4	0	4	8.33	18.7	3.35	3.78	2.73
Jordan	3	2	1	3.80	3.11	3.35	3.95	3.99
Kazakhstan	2	0	2	0.47	0.00	0.00	3.60	3.13
Kenya	1	0	1	0.99	4.81	4.81	3.02	3.24
Kuwait	5	5	0	3.53	2.51	3.44	3.95	3.84
Lebanon	2	0	2	2.82	12.9	–	2.64	2.85
Malaysia	15	0	15	2.22	2.47	2.40	3.86	3.72
Maldives	1	0	1	1.22	1.90	1.09	2.24	2.40
Mauritius	1	0	1	6.48	9.17	5.98	4.51	2.55
Nigeria	1	1	0	2.49	11.7	11.7	2.44	2.95
Oman	2	1	1	1.24	0.16	0.17	2.69	3.13
Pakistan	7	5	2	6.69	8.90	–	2.88	3.02
Philippines	1	0	1	2.67	–	0.17	5.00	1.94
Qatar	4	3	1	1.32	2.85	1.70	4.28	4.44
Saudi Arabia	4	4	0	2.71	1.84	1.54	3.45	3.26
South Africa	1	0	1	0.62	2.52	1.27	4.10	4.37
Sri Lanka	1	1	0	0.92	0.85	.845	2.39	2.83
Sudan	10	1	9	3.65	9.05	–	3.05	2.37
Syria	3	0	3	11.2	4.27	4.27	2.03	1.76
Tanzania	1	0	1	1.02	3.18	3.23	1.84	1.68
Thailand	1	0	1	13.2	28.0	–	0.76	–0.67
Tunisia	2	0	2	2.21	7.96	–	2.43	2.68
Turkey	4	1	3	3.42	3.12	3.69	3.08	3.46
UAE	9	6	3	5.36	7.38	6.81	3.68	3.53
UK	5	0	5	3.47	3.71	3.65	2.43	2.26
Yemen	3	0	3	11.9	18.2	–	3.22	3.18
Average	133[2]	47[3]	86[4]	4.34	7.14	4.56	3.11	2.87

[2] Total of the banks number for the entire countries' sample.
[3] Total of the public banks number for the entire countries' sample.
[4] Total of the private banks number for the entire countries' sample.

The non-interest income shows the importance of this by 29%, reflecting the importance of non-interest income business for IBs. For example, Abedifar et al. (2013) found that IBs have higher non-interest income than CBs. The cost inefficiency is lower than the income, with a mean of 66%. This result is consistent with Abedifar et al. (2013), which reported that the IBs' cost inefficiency is higher than that of CBs. They found that the IBs have a mean cost inefficiency of 59.8%.

The size's mean is $53.4 hundred million. The age of the IBs is presented here, with more than 94% of them being higher than eight years, while 5% are middle-age banks. This result is consistent with Grassa et al. (2020) who found the average age of 71 IBs is 18 years.

Moving to the country's indicators, 51% are common-law countries. In terms of inflation, mean inflation = 6.18%, Max = 63.3%, Min = -30.2%. The GDP per capita mean is $15.9 thousand, and the range is between $490 hundred and $85 thousand. The GDP mean is $38.4 billion.

Table 2: Descriptive statistics of the full sample by the public bank

Full Sample							
Variables	N	Std. Dev.	Min	Mean	Median	Max	t–test of diff. in mean
Panel A: Dependent level							
LLR	1021	4.49	0.23	4.39	2.76	17.6	–0.45
PL	813	5.45	0.06	5.25	3.35	20.9	–1.20
NPL	591	4.97	0.00	4.45	2.41	19.3	–3.85***
Z–score	1082	0.88	–0.51	3.33	3.34	5.61	–1.75*
Z	1080	0.96	–2.50	3.09	3.17	5.19	–6.85***
Panel B: Bank-level							
Public	1197	0.48	0.00	0.35	0.00	1.00	
Subsidiary	1197	0.50	0.00	0.50	0.00	1.00	11.5***
SOEs	1197	23.0	0.00	17.9	6.00	100	–3.25***
INS	1197	30.0	0.00	24.0	8.00	99.0	–1.85*
NII	1093	38.0	–462	38.0	29.0	230	5.55***
CI	1070	47.0	10.0	66.0	54.0	399	4.65***
Size	1110	7.32	0.08	5.34	1.98	26.7	–12.9***
Middle Age	1197	0.23	0.00	0.05	0.00	1.00	–1.05
Mature Age	1197	0.24	0.00	0.94	1.00	1.00	–8.95***
Panel C: Country-level data							
Common	1197	0.50	0.00	0.51	1.00	1.00	–1.05
Inflation (%)	1157	9.07	–30.2	6.18	3.30	63.3	–2.45***
GDP per capita	1161	17.4	0.49	15.9	9.80	85.1	–1.22
GDP	1170	61.8	0.26	38.4	21.0	395	–2.21**

The statistical summary percentage for the publicly traded versus privately owned banks sample

Table 3 provides summary statistics characteristics for the publicly traded and privately owned banks. The average value of the publicly traded LLR is 4.47%. Privately owned banks have an average LLR of 4.34%. The PL average of publicly traded banks is 7.17%, while it is 5.64% for privately owned banks. The average NPL for publicly traded banks is 5.29%, while it is lower for privately owned banks, at 3.74%.

Table 3: Descriptive statistics by publicly traded versus privately owned banks sample

Banks sample	Publicly traded Banks						Privately owned Banks					
Variables	N	Std. Dev.	Min	Mean	Median	Max	N	Std. Dev.	Min	Mean	Median	Max
Panel A: Dependent level												
LLR	400	3.81	0.23	4.47	3.32	17.6	621	4.88	0.23	4.34	2.33	17.6
PL	365	5.26	0.06	5.51	3.91	20.9	448	5.60	0.06	5.05	2.90	20.9
NPL	270	5.41	0.00	5.29	3.32	19.3	321	4.45	0.00	3.74	2.06	19.2
Z-SCORE	394	0.87	0.52	3.40	3.37	5.61	688	0.89	–0.51	3.30	3.30	5.53
Z	388	0.88	0.33	3.35	3.38	4.94	692	0.98	–2.50	2.94	2.90	5.19
Panel B: Bank-level												
Public	423	0.00	1.00	1.00	1.00	1.00	774	0.00	0.00	0.00	0.00	0.00
Subsidiary	423	0.45	0.00	0.28	0.00	1.00	774	0.49	0.00	0.62	1.00	1.00
SOEs	423	22.9	0.00	20.9	12.0	100	774	23.4	0.00	16.4	0.00	100
INS	423	28.0	0.00	27.0	17.0	95.0	774	32.0	0.00	23.0	0.00	99.0

NII	404	37.0	–462	29.0	28.0	170	689	39.0	–336	43.0	30.0	230
CI	396	35.0	12.0	57.0	49.0	302	674	52.0	10.0	71.0	58.0	399
Size	406	86.3	0.76	82.1	43.5	267	704	58.4	0.76	3.69	0.88	267
Middle Age	423	0.25	0.00	0.06	0.00	1.00	774	0.22	0.00	0.05	0.00	1.00
Mature Age	423	0.24	0.00	0.93	1.00	1.00	774	0.23	0.00	0.94	0.00	1.00
Panel C: Country-level												
Common	423	0.50	0.00	0.53	1.00	1.00	774	0.50	0.00	0.47	0.50	1.00
Inflation	423	5.88	–2.40	5.31	3.80	63.3	734	10.4	–30.2	6.67	3.20	63.3
GDP per capita	423	20.9	0.62	19.9	18.7	85.1	738	14.5	0.49	13.7	9.61	85.1
GDP	423	24.2	2.57	27.9	21.4	104	747	74.5	0.26	44.4	20.9	395

As presented in Table 3 there is no high variation in the Z-score across publicly traded and privately owned banks; the averages are 3.40 and 3.30, respectively. Compare the findings of the Z-score with one of the studies with a large sample study by Samet et al. (2018), which found that publicly traded banks have a higher Z-score than their privately-owned peer, which the publicly traded banks have 3.11 while the privately-owned peers have 2.86. The Z for the publicly traded banks is 3.35 and for the privately owned banks is 2.94.

On the other hand, the publicly traded banks also have higher subsidiaries, state ownership and institutional ownership. Hence, the publicly traded subsidiaries may increase the risk because the subsidiary's loan portfolio may be constructed as a risky portfolio to account for failed problems that are not viewed as a parent bank's failure (Abedifar et al., 2013). In addition, the table shows that publicly traded banks have lower non-interest income and cost inefficiency values. These results present the importance of the requirements by the regulatory of the stock market (Samet et al., 2018). The higher non-interest income for the privately owned banks may explain their hedging from lower loans by increasing the non-interest income to preserve profit.

Table 3 also shows that the publicly traded banks are greater in size and older than privately owned banks. The larger banks may be riskier due to the fact of too-Big-To-Fail (Kane, 2010). Hence, due to the result findings that the publicly traded banks are larger banks than the privately owned banks so, they will be riskier. In addition, older banks are more likely to have long-term partnerships and other benefits (e.g., experience in new regions and product markets) reflected in their efficiency and risk advantages (Abedifar et al., 2013). It could be the case that publicly traded banks have more efficiency but the potential to take more risk and therefore operate less cautiously.

Table 4: Spearman's rank correlation coefficients of dependent and public variables

Variables	LLR	PL	NPL	Z-SCORE	Z	Public
LLR	1.000					
PL	0.778	1.000				
NPL	0.812	0.963	1.000			
Z-SCORE	–0.186	–0.176	–0.208	1.000		
Z	–0.143	–0.104	–0.134	0.815	1.000	
Public	0.223	0.116	0.122	–0.094	0.025	1.000

Spearman rho = 0.153

The Pearson product-moment correlation coefficient was used in Table 4 to determine the relationship between Public and the dependent variables. The correlation between the credit risk and the Public shows positive correlations that convey that publicly traded banks are taking more risk. For the first indicator, the LLR is 0.22%. The other indicators have a positive correlation of 0.11% and 0.12%, respectively. On the other hand, the insolvency risk exhibits a discordant pattern where the Z-score tends to have a negative relationship by -0.09% while the Z is positive by 0.02%.

Empirical results: Bank status and credit risk

Table 4 presents the of the empirical results for bank status and credit risk. As presented the equation is estimated using OLS with a robust estimation technique. The study uses the robust technique to lower weights to observations with large residuals. Hence, the models will be less sensitive to outliers. In specification 1, the first credit risk indicator is regressed simply on the particular study variable of interest, Public. Specification 2 represents the second credit risk indicator. Specification 3 represents the third credit risk indicator. The regressions include different control variables, ownership structures, financial structures, ages, and macroeconomic indicators. The models with R-squared are at suitable levels. Also, the VIF is applied to the

result.

Overall, the study finds that credit risk is positive and statistically significant at the 1% level. The LLP is t (3.08) = 0.95, $p<0.01$, while the PL is t (2.59) = 1.14, $p<0.01$ and the t of NPL is (2.32) = 1.38, $p<0.05$. Therefore, it can be concluded that IBs publicly traded banks take more risk than their private peers. In all specifications, publicly traded banks, on average, exhibit higher credit risk than privately owned banks. The study expects the publicly traded banks to associate positively with the LLR due to extensive risky loans, which are higher for the publicly traded banks than for their privately owned peers. This finding is consistent with the study hypothesis H1; the publicly traded banks will be encouraged to take more risks than their privately owned bank counterparts. Additionally, the study discovers that publicly traded banks are positively associated with PL and NPLs, owing to the high risk-taking nature of IBs. The higher LLR will represent the higher risk-taking by the publicly traded IBs. The NPL variable's outcome demonstrates a distinct pattern of risk-taking dissection on the part of the publicly traded bank. The publicly traded bank has a statistically significant positive correlation with NPLs. Interestingly, in Table 3, the publicly traded banks' LLR mean is 4.47% and lower than the two conditions, the PL mean at 7.17% and the NPL at 5.29%. The mean of the loan loss reserve held by the publicly traded banks is 0.13% more than that of their privately owned counterparts, as represented in Table 3.

Table 5: The effect of the publicly traded status on credit risk

Dependent variable:	LLR	PL	NPL
Public	.958***	1.14***	1.38**
	(3.08)	(2.59)	(2.32)
Subsidiary	.068	.883**	1.15*
	(.207)	(2.01)	(1.89)
SOEs	–.005	.001	.045***
	(–.859)	(–.060)	(4.24)
INS	.006	.005	.009
	(1.35)	(.768)	(1.07)
NII	3.76***	2.27**	4.90***
	(4.48)	(2.01)	(3.61)
CI	2.08***	3.03***	2.48***
	(3.88)	(3.35)	(3.28)
Size	.080	–.317*	–.325
	(.569)	(–1.78)	(–1.60)
Middle Age	–3.06***	–6.66***	–4.08***
	(–4.42)	(–5.79)	(–3.36)
Mature Age	.547**	1.07***	2.09***
	(2.14)	(2.97)	(5.87)
Common	.977***	1.78***	1.811***
	(3.46)	(4.52)	(3.79)
Inflation	–.033*	.016	.231**
	(–1.90)	(.296)	(2.24)
GDP per capita	–.221*	–.176	.688**
	(–1.68)	(–.918)	(2.54)
GDP	–.462***	–1.13***	–1.45***
	(–4.21)	(–6.89)	(–5.84)
Constant	13.2***	35.7***	31.1***
	(3.63)	(6.94)	(5.01)
Year dummies	Yes	Yes	Yes
Observations	948	777	569
R^2	.152	.193	.276
Adjusted R^2	.140	.179	.285
Mean VIF	1.54	1.50	1.62

t-values are in parentheses; *** p<.01, ** p<.05, * p<.1

This interpretation has already been provided by the agency theory. The separation of agents and principals under a dispersed ownership structure influences the risk-taking behaviour of publicly traded banks. Additionally, agents may take a more open attitude toward risk-taking in order to retain advantages such as bonuses and stock options as a result of easy access to capital markets with higher potential growth (Beatty et al., 2002; Burgstahler and Dichev, 1997). The more dispersed owners' control governance mechanisms become separated, increasing the likelihood of information asymmetry, which exacerbates the agency problem theory

(Beatty and Harris, 1999; Gropp and Köhler, 2010).

The findings are consistent with the study by Tran et al. (2019), in which they found that the asymmetry in information and agency problems substantially differ in terms of the banks' stability. They found that publicly traded banks became riskier than their privately owned bank peers during the last crisis in 2008. In addition, Nichols et al. (2009) found that publicly traded banks earn lower returns per unit of risk than privately owned banks; hence, for a publicly traded bank to fulfil faster growth, the bank must take on more risk.

This point will raise the distance to higher credit risk, leading to insolvency. Consequently, the study finds that publicly traded banks' LLR has an unsuitable stage that may negatively affect the Z-score; as presented in Table 4, the higher problem loan and the impaired loan require a higher reserve loss from the banks' assets. This matter will influence the return on assets and equity by extending the amount of the loan loss reserve from the banks' assets. A clear benefit of credit risk in risk-taking prevention could not be identified in this analysis, and hence, the study has further analysis of the insolvency risk.

Control Variables and Credit Risk

Turning to the control variables, the study finds that the results are consistent with some of the previous studies (Abedifar et al., 2013; Barry et al., 2011; Kwan, 2004; Mascarenhas, 1989; Vining and Boardman, 1992). The subsidiary shows a positive sign for the credit risk; however, it does not significantly impact the LLR, while it is significant at the 5% level with the PL and 10% for the NPL. Comparing the three specifications reveals that the subsidiary bank is riskier than its parent in terms of the low quality of loans. Conversely, the LLR brings no evidence that multiplies the credit risk by having higher risk with lower reserve. The subsidiary bank is exposed to risk-taking mechanisms, allowing the bank to adopt higher risk strategies compared to its parent (Abedifar et al., 2013).

On the other hand, comparing the two results between the SOEs and INS shows no statistically significant difference between SOE or INS scores among the credit risk scores. However, the SOE cells were stimulated with NPL. This result is significant at the $p<01\%$ level. The result is consistent with previous studies (Berger et al., 2005; Iannotta et al., 2007) where they found that state ownership has poor loan quality and a positive relationship to credit risk. There are higher percentages of NPL in state-owned IBs. One of the reasons behind this relationship with the SOEs is clarified by the soft budget constraint (Kornai, 1986; Maskin, 1996). In general, banks are essential to the economy, and when the government owns a portion of the bank, it is prepared to support it. Governments' guarantee support systems may fail as a result of bank runs triggered by significant un-booked losses (Shleifer, 1998). Hence, the result of the NPL supports the null hypothesis of H1, where the state ownership shows more risk-taking for IBs. In contrast, H1 has no evidence of the outcome. The evidence shows no significant relationship between institutional ownership and credit risk-taking, where the institutional investors are more likely to monitor the management (Heflin and Shaw, 2000; Rubin, 2007). As a result, management will maintain efficiency to prevent credit risk and meet ownership requirements.

Additional data analysis demonstrates that non-interest income has a significant positive level set at the 1% level. This analysis indicates that banks' stability will deteriorate when bank portfolio volatility increases, cutting average profits and margins (Lepetit et al., 2008; Valverde and Fernández, 2007). Thus, banks will seek to maximise profits from non-interest businesses. The cost inefficiency has a significant positive relationship with credit risk, which requires higher net interest margins to compensate for the losses from inefficiency (Angbazo, 1997; Valverde and Fernández, 2007). In addition, this result may tend to be riskier for the banks as they are less likely to cover their costs (Cihak and Hesse, 2007).

Moreover, as demonstrated by this data, the bank size result is not statistically significant in terms of credit risk, except for the PL. Thus, when the banks grow, the issue of PL grows as well (Antão and Lacerda, 2011). Additionally, the study demonstrates a negative correlation between middle-aged banks and credit risk. When comparing the outcomes of middle-aged and mature banks, the middle-aged banks are more conservative than the mature banks; however, mature banks face greater risk due to their more considerable expertise in operating in a variety of different markets.

The next section of the results is concerned with the control country-level variables. The result shows that the common-law tradition countries have statistically significant positive relationships with credit risk. Hence, these countries take risks more than the others in terms of credit risk, which supports Qian and Strahan (2007) findings that common-law tradition countries have a higher loan demand and more highly developed economies. The higher demand may tend to have higher credit risk, as demonstrated by the result.

Credit defaults and credit spreads often move in lockstep with macroeconomic indicators. The inflation rate has diverse results concerning credit risk. However, these results are statistically significant and negative with the LLR, while the NPL has a statistically positive relationship with inflation. This result confirms that the higher inflation rate tends to lower the quality of loans and also limits the ability to hedge against poor loans by the banks in the same period of loss (Thiagarajan et al., 2011). An increase in inflation tends to decrease the loan quality, affecting the whole loan sector (Dailami and Leipziger, 1998). The basic premise is that low-interest rates give more power to consumer purchases. The greater the amount of money that is spent in the economy the more the price increases, creating inflation. Inflation will be lower when interest rates are higher (Masson et al., 1998).

Similarly, the study expects a negative relationship between the credit risk and the GDP per capita and the PL and NPL. The relationships between LLP and GDP per capita are statistically negative due to higher GDP per capita, which indicates that the loan will be repaid on time. Hence, higher GDP per capita will reduce the risk of non-payment problems (Dailami and Leipziger, 1998; Sainz-Fernandez et al., 2015). However, the result shows no relationship between higher GDP per capita and PL; conversely, higher GDP per capita tends to result in higher NPL. Interestingly, the higher GDP tends to lower the IBs' credit risk-taking, which may cause a negative relationship with the LLP (Koopman and Lucas, 2005).

Empirical results: Bank status and insolvency risk

The study investigates whether publicly traded banks are prepared to take on additional risks associated with insolvency in Table 5. The insolvency risk equation computed using OLS is shown in Table 5. The current analysis regresses the insolvency risk proxy on publicly traded banks (Public) across all models while also using the same control variables in Table 4. As stated, the models with R-squares are appropriate. Nonetheless, to ensure robustness, the study employs robust standard errors. In general, this analysis discovers a positive and statistically significant association between publicly traded banks and insolvency risk at the 5% and 10% levels. This outcome is consistent with the study hypothesis H1: Publicly traded banks are incentivised to take on more risk than privately held banks. The table's findings show that the Z-score is negative and statistically significant at the 1% level. The Z-score has t (-2.32) = -0.165, while the Z has a negative and statistically significant at the 10% level is t (-2.40) = -0.161.

According to the hypothesis, a publicly traded bank faces more risk-taking mechanisms that adopt higher-risk strategies compared to their privately owned bank counterparts. For the insolvency risk proxies, publicly traded banks maintain the advantage of having a better ability to grow and make acquisitions. The conclusion is compatible with agency theory, according to which managers may be able to take more risks in order to increase their rewards (Beatty et al., 2002; Burgstahler and Dichev, 1997). Further, public equity is more liquid and offers greater options for risk-taking to grow and enhance institutions. Banks will engage in high-risk ventures in order to get a better rate of return (Dewatripont and Legros, 2005). Also, their degree of independence increases their capacity to invest in high-risk ventures with a larger projected return. Additionally, the capital's flexibility enables them to seek funding more swiftly than a privately held bank could (Dewatripont and Legros, 2005).

As a result of these two tables (Table 4 and Table 5), with a dispensation relationship between the ownership, the information asymmetry increased, and the divergence of the incentives appeared. This point may increase risk-taking by encouraging the managers to take the higher risk, which causes the agency problem. In addition, the market forces might impose a higher risk-adjusted return and the more diffuse ownership required to take on more risk and thereby achieve a higher return and access to capital markets (Barry et al., 2011; Kwan, 2004; Lassoued et al., 2016).

The findings are consistent with the Tran et al. (2019) study where they found that the asymmetry in information and agency problems substantially differ in terms of the banks' stability. In addition, the study by Nichols et al. (2009) found that publicly traded banks earn lower returns per unit of risk than privately owned banks; hence, for a publicly traded bank to fulfil faster growth, the bank must take on more risk.

Control Variables and Insolvency Risk

Turning to the control variables, the study finds that the results are consistent with previous studies (Abedifar et al., 2013; Barry et al., 2011; Kwan, 2004; Mascarenhas, 1989; Samet et al., 2018; Vining & Boardman, 1992). The results indicate that the subsidiary bank increases the instability of the IBs by taking more risk. The subsidiary bank's portfolio may be risker due to the nature of its contribution, considering the diversification

of the parent bank's portfolio (Abedifar et al., 2013). The results are negative and significant at 5% and 1%, respectively. In addition, the study discovers that SOEs in IBs have a significant negative correlation with insolvency risk, implying that the SOE is willing to take on additional risk. The instability of state ownership is consistent with (La Porta et al., 2002). They found that the higher SOE reduces the bank's efficiency. Non-conservative strategies for the benefit of the state may increase the bank's risk of failure. Comparing the previous tables (Table 4) and Table 5, Table 5 demonstrated that SOE and impaired loans have a positive association. This result lends credence to a theoretical view where the soft budget constraint may compatible with the implicit bailout guarantee wanted by banks when the government has a stake (Boubakri et al., 2020).

On the other hand, INS has a significant negative relationship with insolvency risk. However, it is insignificant for the Z. Higher institutional ownership tends to lower stability for IBs. Institutional investors diversify their portfolios to maximise their profits. Consequently, they may take risks to maximise their profit in order to have higher expected returns (Barry et al., 2011). However, the rustle in Table 4 and the Z result in Table 5 are against taking risks by institutional ownership; hence, the result is partly against the null hypothesis of H1.

Table 6: The effect of the publicly traded status on the distance to default

	Z-SCORE	Z
Public	–.156**	–.161*
	(–2.32)	(–2.40)
Subsidiary	–.142**	–.174***
	(–2.29)	(–2.73)
SOEs	–.003**	–.002*
	(–2.51)	(–1.73)
INS	–.004***	.001
	(–4.56)	(–.172)
NII	–.573***	–.738***
	(–4.93)	(–6.59)
CI	–.261**	–.399***
	(–2.57)	(–5.69)
Size	.011	.125***
	(.419)	(4.99)
Middle Age	–.518***	.057
	(–3.08)	(.349)
Mature Age	–.117**	.129**
	(–2.00)	(2.16)
Common	–.119*	–.099
	(–1.76)	(–1.55)
Inflation	–.009***	–.016***
	(–2.64)	(–4.35)
GDP per capita	.126***	.053*
	(4.55)	(1.93)
GDP	–.082***	–.059**
	(–2.88)	(–2.47)
Constant	5.11***	3.18***
	(6.65)	(4.54)
Year dummies	Yes	Yes
Observations	990	1002
R^2	.136	.241
Adjusted R^2	.125	.231
Mean VIF	1.60	1.62

t-values are in parentheses; *** p<.01, ** p<.05, * p<.1

On the other hand, the statistical analysis of the bank-level indicators and the non-interest income is significantly negatively associated with the IBs' stability. This result presents less stability as consistent with the previous results (Lepetit et al., 2008; Valverde and Fernández, 2007). Hence, the result of this table confirms the previous table (Table 4) where the banks should increase the non-interest income when the banks are in danger; however, the non-interest income shows lower when it is insolvency risk, thus increasing the risk where the bank may face some challenging due to higher non-interest income. From the same perspective, a weaker stability case existing in the IB enhances the cost of inefficiency. The result is consistent with (Kwan and Eisenbeis, 1997); the banks need higher net interest margins to support the losses incurred due to inefficiency (Angbazo, 1997; Valverde and Fernández, 2007).

Furthermore, the empirical findings indicate that bank size has no effect on the Z-score, which is consistent with previous studies (Bertay et al., 2013; Samet et al., 2018). However, the size positively affects the probability of failure of Z. The sign indicates that the larger banks tend to have less risk-taking, and they have a lower risk of running out of capital (Cihak and Hesse, 2007). Hence, the result shows that size impacts positively reducing risk-taking by IBs, where it is shown in Table 4 that the larger banks tend to have lower credit risk. The study results also show that middle-aged banks are less stable than their more mature-age bank counterparts. As a result, the younger banks and less experienced have stricter regulations to support their operations to be more cautious (Abedifar et al., 2013). The result indicates that the mature-age bank is less risky than the younger bank.

The last specification includes a set of country-level variables. The result shows that inflation tends to higher insolvency risk, which is the source of lower stability for the banks. The result is consistent with (Samet et al., 2018). The result shows that GDP per capita has a positive impact on insolvency risk. The higher GDP per capita tends to promote the higher stability of banks, a result consistent with Houston et al. (2010); however, the GDP, a proxy of the economic impact size, increases instability. This result is caused by higher opportunities for investing that may impact the stability of the banks.

Alternative estimation methods

Heckman test

The study follows estimations of previous studies (Barry et al., 2011; Nichols et al., 2009; Samet et al., 2018), which estimate in the first stage a probit model with Public as the dependent variable to determine the variables that influence the bank's decision to go public. The variables specified to determine whether the dependent variable is observed the explanatory variables of the probit model, which are net loans over total assets, total customer deposits over total assets, equity over total assets, net interest income over total assets, net income over total equity, and net income over total assets.

Table 7: Heckman test

Model	(1)	(2)	(3)	(4)	(5)
Dependent variable	LLR	PL	NPL	Z-SCORE	Z
Public	.681**	.745***	.489***	–.355**	–.334**
	(2.17)	(4.61)	(3.40)	(–2.43)	(–2.29)
Subsidiary	–.272	.737***	.062	–.053	–.039
	(–1.04)	(4.84)	(.413)	(–.363)	(–.269)
SOEs	–.014**	.01***	.008***	.002	.002
	(–2.28)	(2.77)	(2.83)	(.69)	(.816)
INS	–.018***	–.001	–.006***	.002	.003
	(–4.36)	(–.633)	(–2.82)	(.202)	(.184)
NII	–1.04**	.125	–.706**	–.657**	–.687**
	(–2.19)	(.425)	(–2.12)	(–2.21)	(–2.32)
CI	–.154	–.126	.067	–.138	–.249
	(–.631)	(–.821)	(.369)	(–.761)	(–1.40)
Size	.466***	.269***	.106**	.084	.061
	(4.72)	(4.72)	(1.96)	(1.43)	(1.039)
Middle Age	1.52**	.357	.603**	1.39***	1.41***
	(2.43)	(1.11)	(1.99)	(2.86)	(2.89)
Mature Age	–.771***	–.771***	–.274*	.066	.107
	(–2.61)	(–5.06)	(–1.86)	(.483)	(.781)
Common	.081	–.355**	.096	–.201	–.220
	(.299)	(–2.54)	(.659)	(–1.36)	(–1.49)
Inflation	.009	–.042***	–.005	.027**	.026**
	(.663)	(–4.28)	(–.454)	(2.27)	(2.25)
GDP per capita	.138	–.210***	.865***	.089	.082
	(.945)	(–2.76)	(10.4)	(1.21)	(1.11)
GDP	.404***	.064	.124**	.141**	.138**
	(4.30)	(1.21)	(2.46)	(2.51)	(2.46)
LAMBDA	–7.79***	–4.41***	–6.64***	–1.12**	–.463
	(–3.05)	(–3.32)	(–5.10)	(–2.36)	(–1.15)
Constant	–13.1***	–3.47**	–11.3***	–3.35**	–2.89*
	(–4.33)	(–2.36)	(–7.62)	(–2.11)	(–1.83)
Observations	867	867	867	867	867

t-values are in parentheses; *** p<.01, ** p<.05, * p<.1

The second step is the regressions of risk-taking indicators on other explanatory variables, which is in the second stage and includes the inverse Mills ratio (LAMBDA). The model controls the correlation between Public and second-stage errors to obtain consistent estimators. As presented in Table 7 the specifications report the second-stage regression results, including the inverse Mills ratio (LAMBDA), the result obtains the same as previous results after LAMBDA is included, and the results of LAMBDA are significant. However, the 5th specification has insignificant LAMBDA. The primary variable (Public) remains statistically significant at the 1% level in the three regressions, while it is at the 5% level for the last two specifications. Hence, the result confirms the risk-taking by publicly traded Islamic banks.

6. Conclusion and Recommendation

Islamic banking has been developed around the world. It has a fundamentally different structure that impacts access to equity capital markets. The difference between Islamic banking and other banking is based on the *Fiqh Al-Mu'amalat*, which has unique leases. To date, the limitation of the Islamic banking public and private status literature and their impact on risk-taking propose the need for this result for the Islamic banking sector. I investigate the influence of risk-taking based on the listed status of the comprehensive Islamic banks' sample. The sample contains 133 banks from 35 countries. I gather credit and insolvency risk data to examine the differences between public and private Islamic banks' risk-taking. The paper revises and constructs a control for differences across banks in legal countries. I investigate whether there is a potential endogeneity bias throughout my tests. I run my regression approach to compare the suitability with which public and private banks exhibit more risk-taking. I predict and find that public banks exhibit greater risk-taking than do their private bank peers. I extend this analysis by discovering the impact of risk-taking proxies' components individually.

The results confirm that public banks approve more risk-taking for credit and insolvency risk. I predict and find that public banks reserve a higher amount of loan loss than private banks. The credit risk is persistent and more significant for the public bank problem loan and impaired loan indicators than for private banks. Regarding the other aspect, I go deep to explore the reason behind that, and I investigate insolvency risk components individually through the standard deviation of the ROA and ROE. The result indicates that public banks tend to have more risk than their private counterparts.

Theoretically, the agency perspective supports the result. The risk-taking behaviour of publicly traded banks is affected by the separation between the agents and principals where the ownerships are dispersed (Barry et al., 2011). In addition, the publicly traded banks' aptitude to drive an easier finance access path of their growth opportunities is through the capital markets. The fact that public equity is more liquid and less expensive to issue than private equity enables them to engage in riskier projects with a greater projected return. Additionally, the capital's flexibility enables them to seek funding more swiftly than a privately held bank could (Dewatripont and Legros, 2005). These factors also allow the banks' managers to support more risk in to gain bonuses and stock options. Conversely, a small group of shareholders oversees privately held banks. Also, owing to their small shareholder base, privately held banks are more likely to exercise greater care and closely scrutinise bank management (Iannotta et al., 2007).

The findings show evidence that regarding the fact that the IBs arising from the specific features of Islamic contracts (Iqbal and Llewellyn, 2002), financial reforms in this region related to the convergence and harmonisation of regulations and products are needed to facilitate an efficient and sustainable growth of this sector.

The present study has implications for the market discipline and agency theory. These findings support the theoretical expectation that separation between the agents and principals where the ownerships are dispersed will impact the risk-taking by the agents. In addition, the easy access to the capital market may lower the agents' conservative approach to risk-taking to maintain their benefits, such as bonuses and stock options. Therefore, IB banks must prioritise the management of these two bank-specific features. Therefore, bank-specific policies should concentrate on enhancing credit risk management to enhance banks' asset quality. In addition, policy should limit the danger of insolvency or bankruptcy by lowering investments in very unstable enterprises, which would reduce the Z-scores of the banks.

Academic researchers, policymakers, rating agencies, bank shareholders, and bondholders generally benefit from the results of this result, which emphasise the need to keep up with changes in CG regulations and focus on how these changes and innovations affect banks' financial performance and management. To help

shareholders, bondholders and depositors should evaluate if the bank's listing status warrants an additional risk premium. In addition, credit rating agencies, regulators, and politicians will also benefit from these findings, which will help them better evaluate the risk of publicly traded and privately owned IBs and their ability to discipline them in their risk-taking behaviour.

The findings contribute to a limited body of research on whether listed status banks vary in risk-taking and represent unique findings on whether and how the listing status affected IBs globally. The results indicate that institutional ownership is essential in explaining risk differences between publicly traded and privately owned IBs. Consequently, the research assessed that financial system stability should estimate banks' stability. In addition, the IBs should be under solid financial systems to maintain the banks' stability from different ownership objectives.

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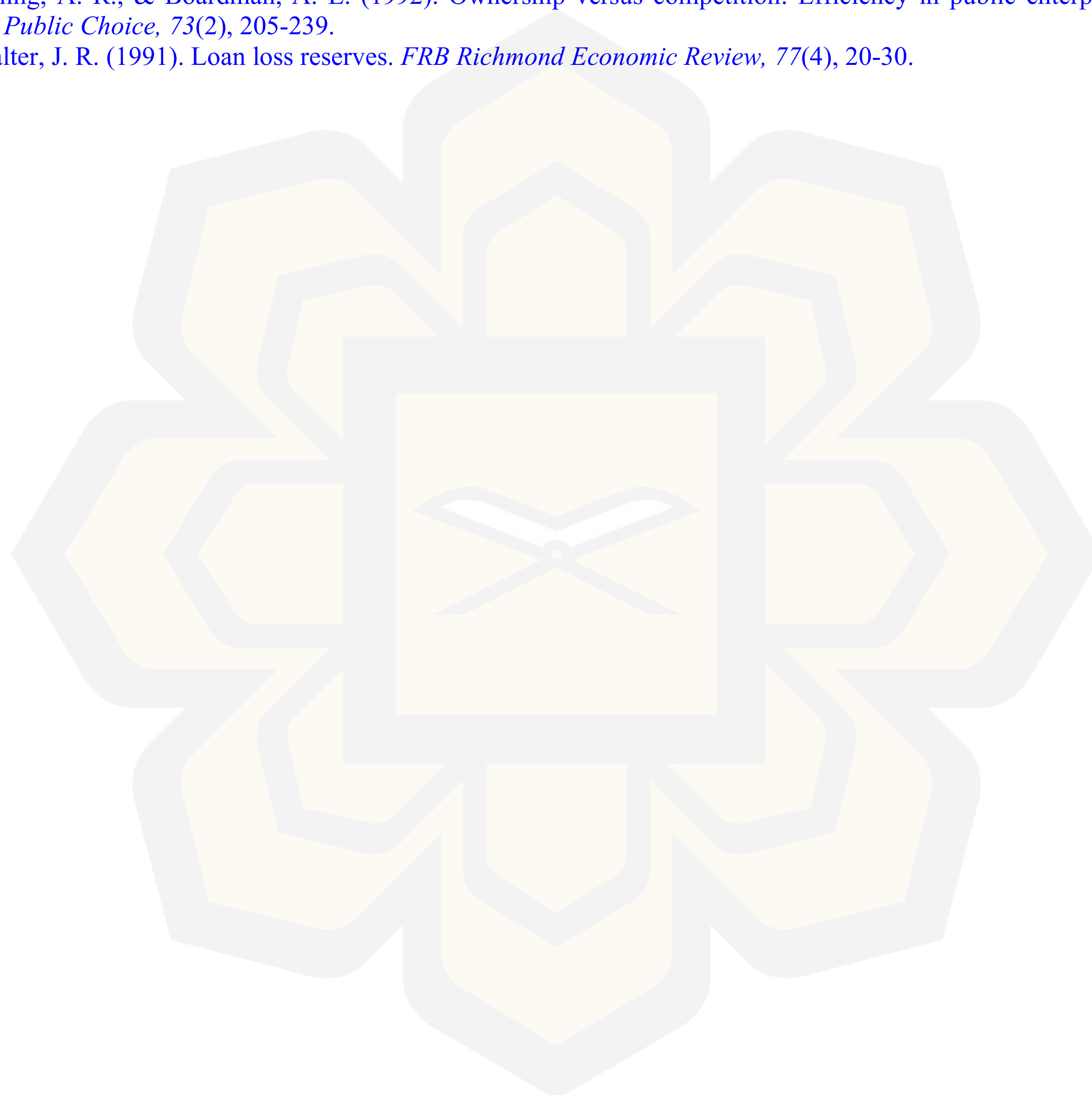

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Statistical Behaviours and Forecast of Cash Waqf Collection

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Abstract

The main purpose of this research is to elucidate the efficacy of statistical measurements on cash waqf collection. To demonstrate this, the sub-objectives of this study are (1) to examine the statistical behaviours of cash waqf and (2) to ascertain future cash waqf collection trend. Numerical measures were used to describe statistical behaviours of cash waqf while Box-Jenkins methodology was employed for forecasting. Cash waqf data of State Islamic Religious Council (SIRC) of Pulau Pinang and Perbadanan Wakaf Selangor (PWS) had been collected to address these sub-objectives. During the period of study, it was found that cash waqf collected by SIRC of Pulau Pinang was more predictable than PWS even though PWS collected higher value on average. As such, the statistical measurements had identified different cash waqf management strengths. This is hoped to encourage cross-sharing exercises between SIRCs so cash waqf management can continuously be improved. Furthermore, the tentative sum of cash waqf collection forecasted using time series forecasting shows that cash waqf managers can make informed decision for the beneficiaries' best interest. The usefulness of statistical measurements elucidated above is hoped to convince cash waqf managers to make cash waqf data readily accessible. This paper fills the gap in the literature of cash waqf collection statistics which is extremely limited. This paper is expected to be an impetus for future studies on advanced cash waqf statistics that could add relevance of waqf to the modern economy.

Keywords: *Cash waqf, Waqf, Time series econometrics, Numerical measures, Univariate analysis*

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1. Introduction

At present, the endowment of cash waqf is well-established in Malaysia. All the State Islamic Religious Council (SIRC) or Majlis Agama Islam Negeri (MAIN) in Peninsular Malaysia accept cash as waqf, while in West Malaysia, only the SIRC of Sarawak recognizes it. Since the first inception of cash waqf endowment by the SIRC of Johor in the 1980s, the accumulated cash waqf collection for most Malaysian states, if not all, have reached a substantial sum. As such, a rise in the waqf literature is observed as there is a boost in the development and aid provided by cash waqf. Concurrently, the Shariah rulings concerning all facets of cash waqf had been debated and its sustainability mechanism was suggested.

Yet, minimal studies have examined the statistical behaviour of cash waqf collection. The limited research on this subject is attributed to the unavailability of consolidated cash waqf data from all states. Each SIRC can be approached for the data, but very few SIRCs enabled the data to be easily accessible to the public. In turn, there are lack of studies in the statistical mechanism of cash waqf although meaningful information may be discovered. Examining the cash waqf collection pattern may aid the mutawalli (cash waqf manager) to understand the performance, forecast future collection, and make effective risk management decision regarding cash waqf. The mutawalli may be able to plan a specific waqf development project, provide certain cash waqf collection projection, and then target suitable beneficiaries. Thus, findings from statistical analysis encourage efficient and effective utilization of the cash waqf.

To expound the usefulness of statistical analysis on cash waqf, this paper has formulated two research objectives (RO); (1) to analyse the statistical behaviours of cash waqf collection and, (2) to forecast on future cash waqf collection trend. To this end, cash waqf collected by the SIRC of Pulau Pinang and Perbadanan

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Wakaf Selangor (PWS) were chosen. This paper is organized into five different sections. Section 1 is the introduction section. Section 2 until Section 4 review the literature of cash waqf. The literature review sections not only identify literature gaps but also provide the theoretical background on the study of cash waqf. Section 5 elaborates on the methodology applied in this paper while Section 6 provides the result and analysis. Lastly, Section 7 concludes this study.

2. The Background of Cash Waqf

Cash waqf can be literally defined as waqf existed using cash money (Mannan, 2005; Abdel Mohsin, 2009). The return received is used for noble purposes with the intention of seeking Allah's pleasure. Basically, the value of cash waqf should remain intact and cash waqf should be invested to generate return and grow the capital (Razali, 2015). This definition is also in line with the opinions of Algunduz (2009) and Nazir and Hasanuddin (2004) where cash waqf, similarly known as waqf money and *waqf an-nuqud*, requires the capital to remain intact with the intention of seeking Allah's blessing. Meanwhile, Çizakça (1995) defined cash waqf by focusing on the aim of the fund which is for giving services to human in the name of Allah. In another article, Çizakça (2000) emphasized that cash waqf is a specific waqf which is different from other real waqf in that the actual value is in the form of cash (*asl al-mal* or corpus). Considering all these definitions, cash waqf is a specific waqf in the form of cash that needs to be invested so that the principal may remain intact, and return can be obtained. The return is then used for the service of humanity to gain Allah's pleasure.

The first implemented cash waqf in history was traced in 1423 in Erdine, Turkey, during the Uthmaniyyah Empire (Mandaville, 1979). However, between 1545 and 1547, a debate on the validity of cash waqf (also in the form or gold, silver, dinar, and dirham) had occurred. Traditionally, waqf assets were in the form of fixed assets and immovable assets (*al-'iqar*). Plus, numerous scholars agreed that the main rule of waqf asset is that it must physically remain intact (Abu-Zahrah, 2007). In contrast, cash waqf is a movable asset and does not physically remain intact. This further led to another issue where cash waqf could not give continuous benefits since money would destroy and vanish over time. This is best explained by the concept of Time Value of Money (TVM) where a dollar today is worth more than a dollar tomorrow, thus diminishing the capital of cash waqf as time passes by. Yet by 1560, the debate was deemed settled, at least during the Uthmaniyyah Empire, as cash waqf became a common practice and was the main form of endowment (Mandaville, 1979).

Yet, one prominent issue of the Uthmaniyyah cash waqf serves as a warning to the present implementation of cash waqf, namely, *istiglal* (economic interest) (Çizakça, 1995). Razali (2015) had explained this mechanism clearly. The borrower of cash waqf is required to put up his or her house as collateral to the lender. In turn, the lender will rent the house back to the borrower at a price above the amount of cash waqf borrowed. As such, *istiglal* is accused to be a back door to *riba* (usury). The reason for the adoption of *istiglal* is simple; the preservation of cash waqf capital and as a mean to gain guaranteed return. This inadvertently shows that the implementation of *istiglal* ranks the preservation and usufruct of cash waqf capital to be above of other severe Shariah issues like *riba*.

3. The Shariah Rulings of Cash Waqf

In general, the issue of cash waqf validity has been addressed in Malaysia. The National Fatwa Council Islamic Affairs of Malaysia had come up with a *fatwa* that permits the practice of cash waqf in 2007 (Ambrose, 2018). Yet, to guarantee that the principal of cash waqf remains intact and be able to provide usufruct, not to mention avoidance of Shariah issues like *riba*, other scholars and religious authorities have also come up with *fatwas* (Islamic rulings) on cash waqf. In fact, one of the *fatwas* exceeded expectation by incorporating sustainable solutions from both conventional and Islamic finance.

For instance, the *pondok* (traditional Islamic school) scholars in Acheh deem that the operationalization of cash waqf is only allowed through the mechanism of *istibdal* (the exchange of cash waqf with immovable asset(s)) (Mauluddin and Rahman, 2018). The scholars justify the fatwa based on the practice of Prophet Muhammad (ﷺ) that did not endow fiat money as waqf, vulnerability of cash waqf to exchange rates, the inability of cash waqf to retain its original form after being spent, and the attributes of cash itself where it is a mere store of value not an asset. Razali (2015) echoed most of these points by arguing that fiat money endowed as waqf will threaten the *Maqasid* (Objective) of waqf. Meanwhile, Ambrose and Asuhaimi (2021) had even attempted to address the issue of cash waqf perpetuity vis a vis the risk of capital depletion.

The International Council of Fiqh Academy in its Resolution No. 140 (15/6) made compulsory for waqf assets,

whether movable or immovable, to be invested (Mohsin, 2014). The return from waqf investment is not constituted as the corpus of waqf. The Resolution put the conditions for investment as follows (Mohsin, 2014):

- Must be Shariah-compliant.
- Risk should be minimized where an investment strategy like diversification should be considered. In addition, other risk mitigation measures such as feasibility studies and obtaining surety should be undertaken.
- High-risk investments should be avoided.
- Investment chosen must be suitable to the corpus of waqf and protects the waqf and beneficiary rights.
- The investment activities must be transparent.

Note that cash waqf is categorized under movable assets and thus applicable to this Resolution. As such, with this multi-faceted view put forward by the International Council of Fiqh Academy, it is natural to gauge and forecast the performance of cash waqf collection. Hopefully, these endeavours can assist in selecting a proper future investment method and benefit a wider pool of beneficiaries. Furthermore, gauging the performance of cash waqf collection will garner more confidence and professionality in the management of cash waqf.

In the matter involving figures, statistics are often employed. Yet, minimal studies have extensively researched on cash waqf statistics. Based on our limited knowledge, only two studies in the literature have studied cash waqf statistics which are Ambrose et al. (2019) and Marzuki (2012). However, these studies are mostly futuristic in nature and based on assumptions i.e., real cash waqf data were not employed. To be specific, Marzuki (2012) had simulated the implication towards government savings on the assumption that one Malaysian Ringgit (RM) is given out as waqf. Meanwhile, Ambrose et al. (2019) had used unit trust return as proxy of return on cash waqf investment. Thus, this study enriches the literature by employing real cash waqf data that will not only assess the performance of cash waqf, but also perform projections of cash waqf using statistical measures.

4. The Implementation of Cash Waqf

Despite the differences in opinion regarding the operationalization of cash waqf, numerous cash waqf initiatives have been presently introduced globally. In Bangladesh, Social Investment Bank Limited (SIBL) was the first financial institution in the world that had introduced a cash waqf product on 22nd November 1995 (Hishamuddin, 2006). Overall, the product generates 10.7 percent profit every year which is used to fund three main activities of social development. The three activities are family reinforcement, health, and social services (Hasan, 2007). In Indonesia, Dompet Dhuafa Republika introduced cash waqf investment through the development of Tabung Wakaf Indonesia (Indonesia Waqf Fund) to raise fund for several programs such as funding poverty elimination, healthcare service, education service, and entrepreneur development program (Razali, 2015).

In Malaysia, there is a trend of cash waqf being used to finance and develop waqf properties. According to Razali (2001), waqf in Malaysia is seen as an institution that does not have potential in developing socioeconomics. Razali (2001) revealed that from 11, 196 acres of waqf land, 79.6 percent or 8196 acres are dedicated for graveyards, mosques, and Islamic schools. In 1992, revenue received from those lands was RM 5 556 467.20 while administration cost was RM 5 903 648.91 which is much higher by RM 347 181.71. As recorded in Ghazali et al. (2021), 11,000 hectares of waqf land in the country has potential for development but only eight projects were managed to be completed recently. For institutions that have the financial capacity like banks, capital agencies, and private companies, interest in financing waqf development project are none as there are restrictions from legal and religious perspectives.

As such, cash waqf is viewed as an effective solution to address this problem. The first cash waqf scheme that was termed as waqf shares was introduced by Majlis Agama Islam Johor (MAIJ) in 1983 (Abdul Hamid and Mohammad, 2014). Waqf shares refer to a type of cash waqf since it comprises of cash or money (Razali, 2015). Waqf shares were introduced to raise funds to finance waqf development projects and it was an idea of the then Mufti of the State of Johor, Dato' Ahmad bin Awang (Abdul Hamid and Mohammad, 2014). The waqf shares contributors consist of individuals and corporate bodies. From the waqf shares collection, development of new properties for commercial and educational purposes was conducted such as two waqf buildings, one in Pontian and another one in Tampoi (Abdul Hamid and Mohammad, 2014). In 2006, MAIJ bought a property

in Egypt which is a six-storey apartment building converted into a hostel for Malaysian students using waqf shares collection (Abdul Hamid and Mohammad, 2014). Not only MAIJ, other MAIN have also introduced cash waqf scheme including Majlis Agama Islam Selangor (MAIS), Majlis Agama Islam Melaka (MAIM), Majlis Agama Islam Pulau Pinang (MAINPP), Majlis Agama Islam Pahang (MAIP), Majlis Agama Islam Negeri Sembilan (MAINS), Majlis Agama Islam Kedah (MAIK), Majlis Agama Islam Terengganu (MAIDAM), Majlis Agama Islam Pahang (MUIP), Majlis Agama Islam Perlis (MAIPs), and Majlis Agama Islam Kelantan (MAIKN) (Razali, 2015; Farhana and Asmak, 2017).

In Selangor, MAIS had introduced cash waqf in 2001 (Fadhilah, 2017). Subsequently, MAIS developed a corporate body to focus on waqf, namely PWS. Up until now, it has received positive responses from public and corporate bodies. In 2011, the collection was RM 1,438,910.43 and a sharp rise of 90% recorded in 2018 with a total collection of RM 9 million. About RM 1 million of the cash waqf collected was used and distributed to a total of 43 mosques and schools around Selangor (PWS, 2020). On the other hand, MAINPP had introduced cash waqf since 2014 and collected about RM 1,094,462.91; and in 2018, the amount had doubled to RM 2,010,761.00 (MAINPP, 2020). Presently, MAINPP used cash waqf collection to buy properties such as building and land for MAINPP which intends to convert cash waqf into a permanent asset.

The significant cash waqf collection, its wide implementation, and welfare provision elucidate that cash waqf has strongly assisted the field of socioeconomics. It further lends support to the fact that cash waqf is not an anachronistic instrument and should be managed professionally. This way, the conduct of cash waqf will not only be ethical but can further coalesce with the present economy that is transparent and forward-looking. Specific to the topic of this paper, professional management should include periodic analysis of cash waqf collection amount and its future projection. This paper delivers a basic statistical analysis of how cash waqf managers can do just that.

5. Methodology

The research employed a quantitative method where secondary data were collected and analyzed using numerical measurements and time series econometrics; specifically, Box-Jenkins (BJ) methodology. These analyses are loosely based on the Probability Theory namely the mathematical study of random phenomena (Siegmund, n.d.). This theory fits with this study of cash waqf collection for its collection amount is random. Numerical measures of analysis were used to answer the first RO while time series econometrics were used to answer the second RO. The proceeding subsections explain the methodology in detail.

5.1 Data collection

The cash *waqf* data were collected from PWS and MAINPP using purposive sampling. These Malaysian states are amongst the very few where a selected set of cash waqf data is made accessible upon request. The data collections were from January 2015 until December 2018 with a total of 48 observations and both are thus, in time-series form and embody stochastic process. The data were augmented using the logarithm function of base 10 to work with smaller values.

5.2 Data analysis techniques

Two data analysis techniques were applied which were numerical measurements and BJ methodology or autoregressive integrated moving average (ARIMA) modelling. The numerical measurements technique was performed using the Analysis Toolpak add-in in Microsoft Excel while the ARIMA modelling was done using EViews.

5.2.1 Numerical measurements

Numerical measurements refer to a list of descriptive statistics to describe data (Groebner et al., 2011). Although rudimentary, numerical measurements can help point out unique and useful cash waqf statistical behaviour. The measures include minimum value, maximum value, sum, count, measures of centre and location (mean, median), and measures of variation (standard deviation, standard error, range). The following formulas explain the less obvious meanings of measures of centre and location as well as measures of variation:

$$\bar{C} = \frac{\sum_{i=1}^{n} C_i}{n} \qquad (1.0)$$

where $\bar{C}$ is the mean of cash *waqf*, C_i is the cash *waqf* value at point *i*, and n is the cash *waqf* sample size.

$$z = \frac{1}{2}n \qquad (1.2)$$

where z is the point in the cash *waqf* data set corresponding to the median value.

$$Standard\ deviation, \sigma = \sqrt{\frac{\sum_{i=1}^{n}(C_i - \bar{C})^2}{n-1}} \qquad (1.3)$$

$$Standard\ error, SE = \frac{\sigma}{\sqrt{n}} \qquad (1.4)$$

$$Range, R = Maximum\ Value - Minimum\ Value \qquad (1.5)$$

5.2.2 BJ methodology

The collected time series data were also tested for stationarity using the Augmented Dickey-Fuller (ADF) test, a type of unit root test, before forecasting was performed using BJ methodology. Test for stationarity is important to prepare the cash waqf data for forecasting. Basically, a series that does not have a unit root is stationary. A stationary stochastic process occurs when "its mean and variance are constant over time and the value of the covariance between the two time periods depends only on the distance or gap or lag between the two time periods and not the actual time at which the covariance is computed" (Gujarati and Porter, 2009: p.740). Thus, the data can be used to predict future cash waqf collection only when a time series data is stationary.

Figure 1 displays that the cash waqf data of PWS is weakly stationary or nonstationary. The trend line suggests that the mean and variance have slight deviations. On the other hand, the trend line in Figure 2 seems to indicate that the cash waqf data of MAINPP is stationary. Yet, the ADF test must be performed to obtain accurate results.

Figure 1: Cash waqf collection trend of PWS

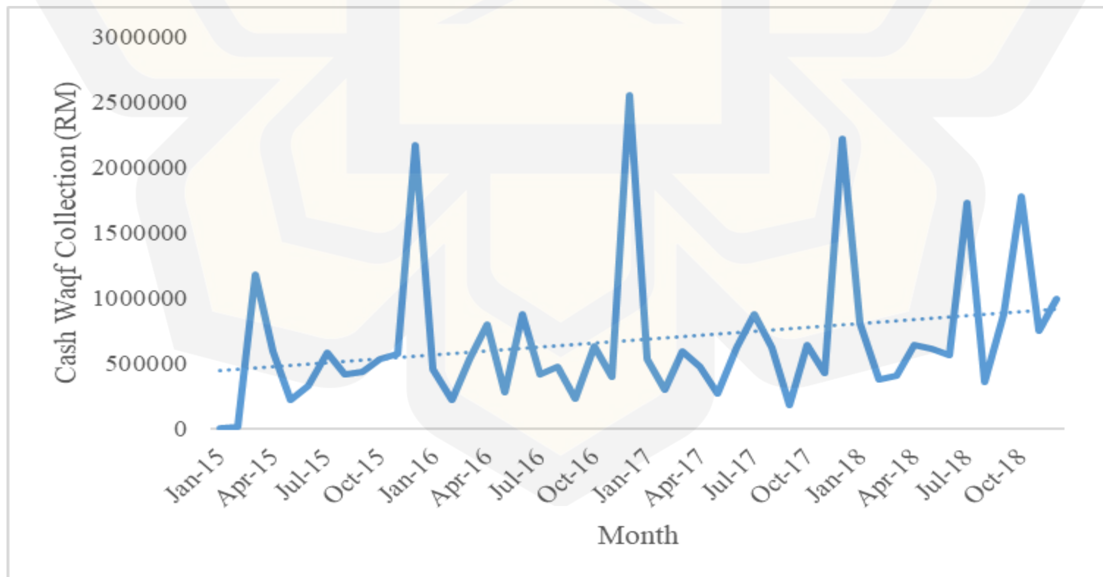
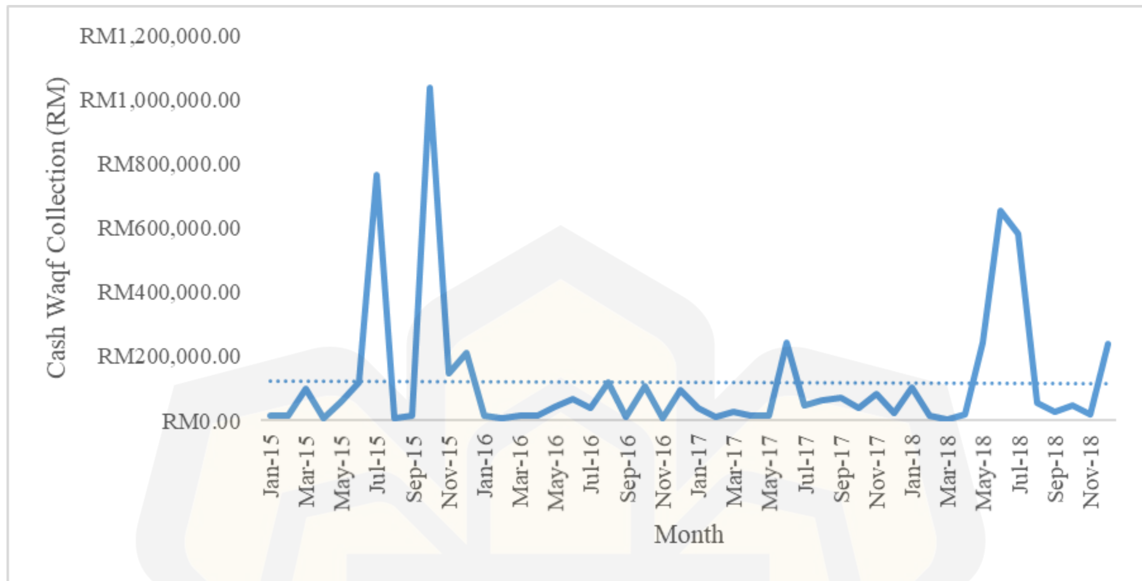


Figure 2: Cash waqf collection trend of MAINPP



The ADF tests involve the estimation of:

$$\Delta C_t = \beta_1 + \beta_2 t + \delta C_{t-1} + \sum_{i=1}^{n} \alpha_i \Delta C_{t-i} + \varepsilon_t \quad (1.6)$$

where $\Delta C_{t-1} = C_{t-1} - C_{t-2}$, $\Delta C_{t-2} = C_{t-2} - C_{t-3}$, and ε_t is a pure white noise error term. The connotation C_t simply refers to the amount of cash *waqf* collected at time *t*. Meanwhile, β_1, β_2 and δ are simply coefficients or parameters of the model. The corresponding hypotheses are:

H_0: If $\delta = 0$, the cash *waqf* time series data are nonstationary

H_1: If $\delta < 0$, the cash *waqf* time series data are stationary

If the cash *waqf* time series data are nonstationary, the data will be transformed to be stationary using difference-stationary processes. Basically, the difference-stationary process requires taking the first difference of the cash *waqf* time series i.e., $\Delta C_t = C_t - C_{t-1}$.

After testing for stationarity, the BJ methodology was performed on the cash *waqf* data. This was done to forecast the collection of cash *waqf* for PWS and MAINPP. As elucidated in Gujarati and Porter (2009), ARIMA modelling involves the following steps:

1. Model identification using correlogram. To make it simple and useful for the forecast, the model should be parsimonious since a parsimonious model contains the least number of variables.
2. Parameter estimation of the determined model.
3. Diagnostic checking i.e., estimation of residuals. If the residual is white noise, then the ARIMA may be accepted, and forecasting is established. If the residual is not white noise, the steps should be repeated from the beginning.

6. Analysis and Findings

This section is further divided into two to ensure an organized discussion of the findings. The first section presents the findings of the numerical measurements while the second section presents the findings of the BJ methodology.

6.1 Numerical measurements result

Table 1 compares the values of numerical measurements between PWS and MAINPP. It demonstrates that PWS collects a higher cash waqf amount of RM32,583,550.21, almost six times more than MAINPP in the period studied. Further insight can be observed in Table 1.

Table 1: Numerical Measurements of Cash *Waqf* Collection by PWS and MAINPP

Descriptive Statistics	Value of PWS	Value of MAINPP
Mean	678823.96	119336.78
Standard Error	79005.77	30549.77
Median	549440.46	42851.96
Standard Deviation	547368.053	211654.99
Sample Variance	2.99612E+11	44797833195
Kurtosis	3.849179034	9.131917026
Skewness	1.99	2.997987248
Range	2537331.03	1036458.71
Minimum	11000	3267
Maximum	2548331.03	1039725.71
Sum	32,583,550.21	5,728,165.38

Between 2015 and 2018, the *mutawalli* (trustee) may surmise that PWS has collected an average of RM549,440.46. The value of skewness explains why the median value is used as a proxy for the average value in place of the mean. The skewness value of +1.99 which is positive and more than +1 suggests that the data set is heavily skewed to the right. As opposed to mean, the median measure is less affected by extreme values and thus it is a better proxy for the average value of cash waqf collection. Concurrently, the average value collected by MAINPP is also best represented by the median, which is RM42,851.96. As such, MAINPP can benefit from this information by determining the strategies adopted by PWS to acquire high cash waqf collection amount. The identification would enable MAINPP to adopt the same strategies and deliver more aid to the beneficiaries in Pulau Pinang.

Table 1 also shows that the standard error, standard deviation, sample variance, and the range of PWS are higher than MAINPP. However, the measures of variation give a different meaning. The higher values show that the cash waqf data set is very spread out from one point of time to another. This means that the cash waqf collection of PWS is more erratic and uncertain than MAINPP. In other words, although PWS collects higher cash waqf on average than MAINPP, its collection amount is also less predictable. Thus, it will be harder for PWS to estimate future cash waqf collection amount and ascertain appropriate future waqf projects for the beneficiaries' benefit. In this case, PWS can analyse MAINPP's management strategies to identify the key factor behind consistent cash waqf collection amount.

Table 1 shows the minimum and maximum amount collected by both institutions. The data ranks reveal that the maximum amount collected by PWS is on December 2016 and October 2015 for MAINPP while the minimum amount collected by PWS is on January 2015 and March 2018 for MAINPP. It is useful to determine the reasons why the maximum and minimum collection amount occurred in this period. A good understanding of the reason and adjusting to it for each period would enable the *mutawallis* to have a higher chance in increasing future cash waqf collection amount.

Determining the exact reason behind these numerical measurements result is outside the scope of this paper. It is worth stressing that this paper aims to expound the benefits of conducting statistical analysis on cash waqf and is not a case study of a particular MAIN. Hence, identifying the statistical behaviours of cash waqf collection is sufficient for this paper.

6.2 BJ methodology result

To explicate further on the matter of cash waqf estimation, Table 2 presents the unit root test result of the cash waqf data from PWS and MAINPP. The estimated tau statistic (τ-statistic) for PWS and MAINPP are 6.437854 and 5.824356 in absolute terms. Since the estimated τ-statistic is larger than all the critical values in absolute terms, H_0 can be rejected. Both cash waqf time series data are stationary and thus, may be extended for forecasting using the BJ Methodology.

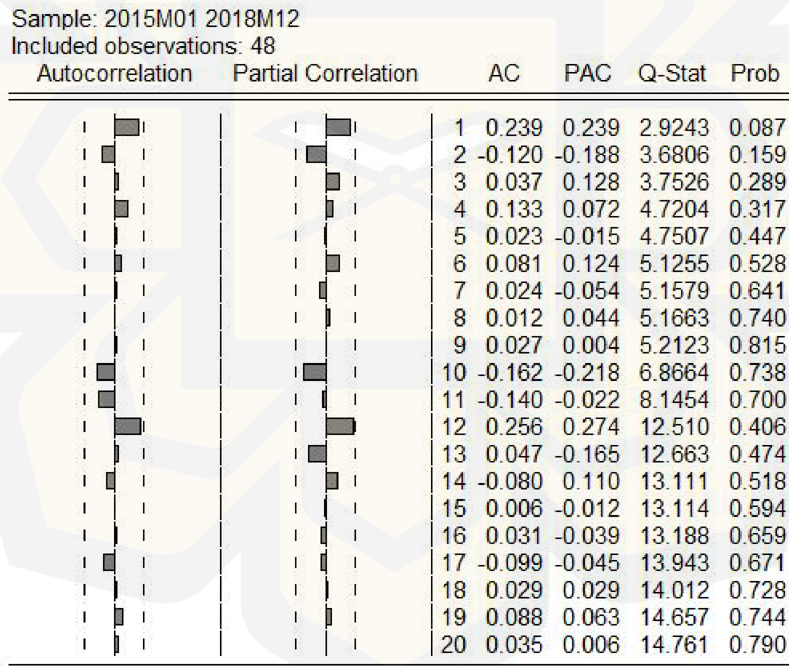
Table 2: Summary of unit root test via ADF Test

Cash *waqf* data	t-statistic
PWS	-6.437854***
MAINPP	-5.824356***

Notes: ***indicates significance at the 1% level

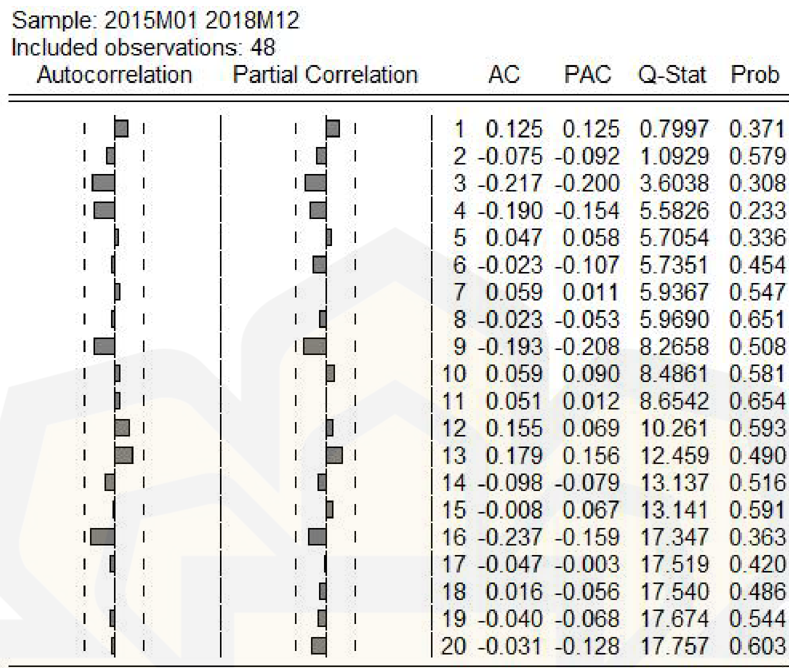
The first step in BJ methodology is model identification. This can be conducted using a correlogram i.e., by plotting the autocorrelation function and partial autocorrelation function of PWS and MAINPP against the lag length. For this research, the lag length was 20; i.e., the optimal lag length chosen automatically by the Schwarz criterion. Figure 3 and Figure 4 demonstrate the correlogram of PWS and MAINPP, respectively. Both figures show that the ACF and PCF have similar patterns. In conjunction with Gujarati and Porter (2009), these similar patterns suggest that the cash waqf collection of PWS and MAINPP is an ARMA model. The lags in both figures are within the 95 percent confidence bounds, thus, none of the lags are statistically significant. This concludes that both time series are modelled as zero-order autoregressive moving average or ARMA (0,0). Both cash waqf series are demonstrated as white noise which required no further improvements to be made on the data (Zhang, 2018). White noise is purely random time series where its data are uncorrelated with zero mean and constant variance (Gujarati and Porter, 2009). Hence, using a simple least square regression method is sufficient to complete the second step of parameter estimation.

Figure 3: Correlogram of PWS


Sample: 2015M01 2018M12
Included observations: 48

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
		1	0.239	0.239	2.9243	0.087
		2	-0.120	-0.188	3.6806	0.159
		3	0.037	0.128	3.7526	0.289
		4	0.133	0.072	4.7204	0.317
		5	0.023	-0.015	4.7507	0.447
		6	0.081	0.124	5.1255	0.528
		7	0.024	-0.054	5.1579	0.641
		8	0.012	0.044	5.1663	0.740
		9	0.027	0.004	5.2123	0.815
		10	-0.162	-0.218	6.8664	0.738
		11	-0.140	-0.022	8.1454	0.700
		12	0.256	0.274	12.510	0.406
		13	0.047	-0.165	12.663	0.474
		14	-0.080	0.110	13.111	0.518
		15	0.006	-0.012	13.114	0.594
		16	0.031	-0.039	13.188	0.659
		17	-0.099	-0.045	13.943	0.671
		18	0.029	0.029	14.012	0.728
		19	0.088	0.063	14.657	0.744
		20	0.035	0.006	14.761	0.790

Figure 4: Correlogram of MAINPP



Sample: 2015M01 2018M12
Included observations: 48

Lag	AC	PAC	Q-Stat	Prob
1	0.125	0.125	0.7997	0.371
2	-0.075	-0.092	1.0929	0.579
3	-0.217	-0.200	3.6038	0.308
4	-0.190	-0.154	5.5826	0.233
5	0.047	0.058	5.7054	0.336
6	-0.023	-0.107	5.7351	0.454
7	0.059	0.011	5.9367	0.547
8	-0.023	-0.053	5.9690	0.651
9	-0.193	-0.208	8.2658	0.508
10	0.059	0.090	8.4861	0.581
11	0.051	0.012	8.6542	0.654
12	0.155	0.069	10.261	0.593
13	0.179	0.156	12.459	0.490
14	-0.098	-0.079	13.137	0.516
15	-0.008	0.067	13.141	0.591
16	-0.237	-0.159	17.347	0.363
17	-0.047	-0.003	17.519	0.420
18	0.016	-0.056	17.540	0.486
19	-0.040	-0.068	17.674	0.544
20	-0.031	-0.128	17.757	0.603

Table 3 and Figure 5 show the results of the least squares regression for cash waqf data of PWS and estimation of its residuals, respectively. The coefficients of the model were statistically significant (refer Table 4) and the adjusted R-squared was positive. Finally, the estimation of residuals shows that the model was white noise. Thus, the forecast for PWS cash waqf was established using this equation:

$$\log S_t = 0.24 \log S_{t-1} + 4.34 \quad (1.7)$$

where $\log \mathrm{S_t}$ is the natural logarithm of PWS cash waqf collection at period t. Hence, the *mutawalli* of PWS can estimate for instance, the cash waqf data collection for May 2021 by inserting the cash waqf collection of April 2021 in Equation (1.7).

Table 3: PWS cash waqf model summary

R^2	Adjusted R^2	Standard error of regression
0.086909	0.066618	0.341086

Table 4: PWS cash waqf model parameter estimation summary

Parameter	Coefficient estimate	t-statistic	Probability
Constant, C	4.343772	6.482154	0.0000
$\log P_{t-1}$	0.243267	2.069581	0.0443

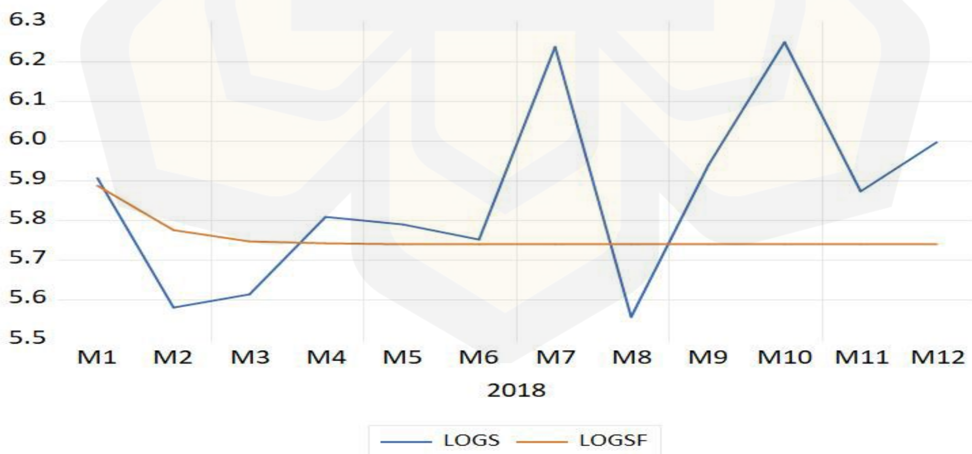
Figure 5: Estimation of residuals for PWS cash waqf model

Sample (adjusted): 2015M02 2018M12
Q-statistic probabilities adjusted for 1 dynamic regressor

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
		1	-0.310	-0.310	4.8236	0.028
		2	-0.091	-0.208	5.2507	0.072
		3	0.053	-0.053	5.3965	0.145
		4	0.084	0.078	5.7750	0.217
		5	-0.089	-0.028	6.2122	0.286
		6	0.155	0.160	7.5551	0.273
		7	-0.035	0.064	7.6240	0.367
		8	-0.019	0.030	7.6447	0.469
		9	0.115	0.139	8.4406	0.490
		10	-0.226	-0.209	11.626	0.311
		11	-0.089	-0.255	12.134	0.354
		12	0.410	0.280	23.199	0.026
		13	-0.088	0.140	23.729	0.034
		14	-0.128	0.025	24.866	0.036
		15	0.094	0.056	25.500	0.044
		16	-0.019	-0.035	25.527	0.061
		17	-0.101	-0.089	26.309	0.069
		18	0.011	-0.211	26.319	0.093
		19	0.125	0.069	27.595	0.092
		20	-0.108	-0.043	28.586	0.096

The points of the PWS cash waqf model (LOGSF) were plotted against the raw data (LOGS) for January 2018 until December 2018 to demonstrate the forecasting power of Equation (1.7). Figure 6 demonstrates that a total of four points had intersected while another point almost intersected. This indicates that Equation (1.7) has successfully predicted cash waqf collection amount of PWS in certain periods.

Figure 6: The forecasted PWS cash waqf model vs raw data



Regarding cash waqf collection by MAINPP, the summary results of its least squares regression are depicted in Table 5. In Model I, the adjusted R-squared was negative suggesting that the dependent variable was not explained by the independent variables, $\log P_{t-1}$ and C. The parameters need to be further estimated while the parsimonious model fitting must hold simultaneously. Thus, Model II was estimated by including the

least number of independent variables to obtain positive adjusted R-squared. Yet, the Akaike info criterion (AIC) and the Schwarz criterion (SC) were larger than the earlier model. AIC and SC were used as criteria to select between two competing models (Gujarati and Porter, 2009). Interestingly, Model II (refer Table 6) shows that log P_{t-3} was the most significant variable as its probability was the lowest after C.

Table 2: MAINPP cash waqf models summary

Model	R^2	Adjusted R^2	Standard error of regression	AIC	SC
I	0.016498	-0.05358	0.598657	1.853366	1.932095
II	0.108239	0.016777	0.595167	1.906697	2.109445
III	0.050666	0.028588	0.594400	1.840898	1.921194

Table 6: MAINPP cash waqf models parameter estimation summary

	Parameter	Coefficient estimate	t-statistic	Probability
Model I	Constant, C	4.059320	5.814358	0.0000
	log P_{t-1}	0.129808	0.868829	0.3896
Model II	Constant, C	6.271557	4.452788	0.0001
	log P_{t-1}	0.112039	0.714845	0.4790
	log P_{t-2}	-0.096808	-0.624222	0.5361
	log P_{t-3}	-0.204793	-1.333125	0.1902
	log P_{t-4}	-0.152033	-0.981811	0.3322
Model III	Constant, C	5.712361	8.199342	0.0000
	log P_{t-3}	-0.225490	-1.514895	0.1371

By regressing the dependent variable to $\log \mathrm{P}_{t-3}$, Model III shows that the AIC and SC became lower than MAINPP Cash Waqf Model I and MAINPP Cash Waqf Model II (refer Table 5). The adjusted R-squared had a larger positive number and the model was parsimonious. In addition, the diagnostic checks depicted in Figure 7 prove that MAINPP Cash Waqf Model III was white noise and Figure 8 shows the forecast performance. As such, the forecast for MAINPP cash waqf was established using this equation:

$$\log \mathrm{P}_t = -0.23 \log \mathrm{P}_{t-3} + 5.71 \qquad (1.8)$$

where $\log \mathrm{P}_t$ is the natural logarithm of MAINPP cash waqf collection at period t. Hence, the *mutawalli* of MAINPP can estimate, for instance, the cash waqf data collection for May 2021 by inserting the cash waqf collection of February 2021 in Equation (1.8).

Figure 7: Estimation of residuals for MAINPP cash waqf Model III

Sample (adjusted): 2015M04 2018M12
Q-statistic probabilities adjusted for 1 dynamic regressor

	AC	PAC	Q-Stat	Prob
1	0.093	0.093	0.4146	0.520
2	-0.058	-0.067	0.5810	0.748
3	-0.052	-0.041	0.7180	0.869
4	-0.175	-0.172	2.2991	0.681
5	0.099	0.131	2.8138	0.729
6	-0.116	-0.174	3.5446	0.738
7	-0.037	0.000	3.6224	0.822
8	0.031	-0.012	3.6784	0.885
9	-0.146	-0.130	4.9322	0.840
10	0.154	0.138	6.3717	0.783
11	0.052	0.016	6.5396	0.835
12	0.120	0.132	7.4572	0.826
13	0.149	0.085	8.9312	0.778
14	-0.142	-0.072	10.298	0.740
15	0.015	0.023	10.313	0.800
16	-0.240	-0.229	14.505	0.561
17	-0.095	-0.002	15.187	0.582
18	0.030	-0.069	15.257	0.644
19	-0.138	-0.077	16.804	0.603
20	-0.008	-0.107	16.810	0.665

Figure 8: The Forecasted MAINPP Cash Waqf Model III vs Raw Data

5. Conclusion

In the period under study, cash waqf collected by MAINPP was more consistent than PWS although PWS collected higher value on average. Mathematical models that can forecast cash waqf collection were also illustrated. These results that were obtained from statistical measurement have important implications not only to MAINPP and PWS, but other SIRCs too.

Firstly, it is hoped that these results will ignite cash waqf management sharing exercises between SIRCs; in particular, on the strategy to obtain consistent and higher cash waqf collection. This cross-learning exercise may increase the effectiveness of cash waqf management of all SIRCs which will eventually profit a wider pool of beneficiaries. Secondly, the *mutawallis* of all SIRCs can individually employ time series forecasting

on the complete cash waqf dataset to estimate the sum of future cash waqf collection. Coincidentally, *mutawallis* can adapt and strategize on future cash waqf projects and cash waqf investment. Thirdly, the authors hope that the usefulness of time series analysis that this study demonstrated may nudge *mutawallis* to make available cash waqf collection data to researchers. This can help proliferate future studies on advanced cash waqf statistics. In this regard, the SIRCs can charge a fee to researchers which can be channelled to the cash waqf fund.

This research is not without limitations. Firstly, only two SIRCs were considered in this study out of the fourteen SIRCs (including Federal Territories) in Malaysia. Secondly, the cash waqf data obtained were not recent and robust. Despite these, the main objectives of this research which were to expound the virtues of cash waqf statistical analysis were attained. Thirdly, the statistical techniques employed in this study were quite basic and modest. Regardless, these techniques i.e., numerical measurements and BJ methodology, may serve as the building blocks for further intricate statistical techniques in future studies. As such, future studies should attempt to incorporate more SIRCs and apply advanced statistical measures in examining the statistical behaviour of cash waqf collection. Future research can also extend the statistical model to include relevant financial and economic variables.

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Hybrid Sukuk in Light of the Recent Implementation of AAOIFI Shariah Standard no. 59 Related to the Sale of Debt

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Abstract

Sukuk is among the primary fund-raising method for the sovereigns and corporates in a Shariah-compliant manner. Besides the Islamic investors, sukuk has been well received by conventional investors as an instrument that can provide similar risk and reward equal to the bond. However, as there are various sukuk structures in the market, hybrid sukuk is among the popular structure preferred by the issuers. One of the reasons is it requires a lower physical or tangible asset requirement i.e., 30% out of the total sukuk issuance amount ("tangibility ratio"). However, this changes with the implementation of Shariah Standard no. 59 on the Sale of Debt by Accounting and Auditing Organisation for Islamic Financial Institutions ("Standard 59") ("AAOIFI"). It mandates a higher tangibility ratio requirement and an additional requirement of maintaining the tangible asset value. Thus, via document analysis methodology, this paper aims to explore further the implication of these requirements toward the underlying asset condition and tradability of hybrid sukuk, as well as other potential impacts.

Keywords: *Islamic capital market, Sukuk structuring, Hybrid sukuk, AAOIFI Shariah standards, Sale of debt*

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1. Introduction

Sukuk is the key component of the Islamic financial system. It received a wider acceptance and participation from issuers, investors, corporate advisors, regulators, and other stakeholders in the international and local financial markets. The growth momentum of sukuk has been monumental since its inception in the market. The sukuk market is an attractive source of financing for issuers (especially governments, sovereign wealth funds and companies) to fund their initiatives and productive investment activities. The local and international capital markets favour sukuk because sukuk provides risk diversification options for the investors' portfolios. It satisfies their need for fixed-income financial assets as part of their diversification plan. Sukuk also enjoys an advantage where it can attract a broader investor base, i.e., both Islamic and conventional investors. The oversubscription of global sukuk issuances, especially those issued by sovereigns such as Malaysia and Indonesia, can be considered normal. Unlike its conventional bond counterpart, it can only attract conventional investors. Furthermore, because of the ability of sukuk to provide stable returns and a positive growth effect, it is also preferred by institutional investors as an avenue for their long-term investments (ISRA, 2017; Wan Mohamed Ali, 2014).

The increase in the sukuk demand has also been fuelled by the rise in the demand by the Islamic investors (especially Islamic fund managers) and from the Islamic financial institutions ("IFIs") as sukuk is a vital liquidity management tool for the IFIs (Dolgun and Mirakhor, 2021). Moreover, by utilising various Shariah principles to provide tailor-made solutions that meet the market's needs, sukuk has been established as a Shariah-compliant financial instrument that can offer the same features that the investors or issuers expect from a conventional bond.

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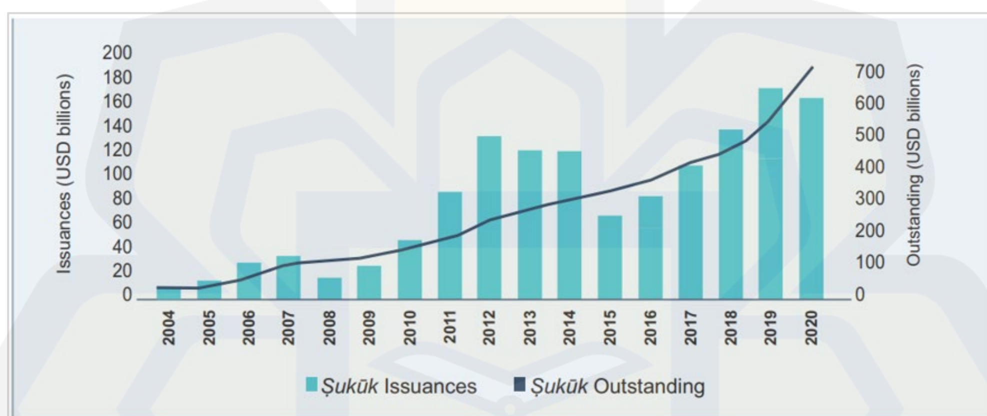
Over the years, there have been a lot of developments in sukuk structuring, regulatory requirements, infrastructure, demand, and supply. Fast forward to 2020, International Islamic Financial Market ("IIFM") Sukuk Report 2021 reported that the sukuk industry posted the best year for sukuk issuances. It put sukuk as the main driving force of the Islamic finance industry, despite 2020 being a challenging year due to the unprecedented Covid-19. Sukuk issuances recorded an amount of USD174.60 billion, an increase of 19.84% year-on-year. Among the leading players contributing to the development of the industry are Malaysia, Saudi Arabia, UAE, Bahrain, Indonesia, Turkey, Pakistan, and Qatar (International Islamic Financial Market, 2021). There has been a burgeoning global interest in the sukuk market since its advent into the capital market. As a result, the global sukuk industry has experienced a compound annual growth rate of 26% (Islamic Financial Services Board, 2021). In the first half of 2021, the value of global sukuk outstanding was USD630 billion (Dinar Standard, 2022).

Table 1: Global sukuk issuances and sukuk outstanding trends 2004-2020



Source: (Islamic Financial Services Board, 2021)

2. The Dynamism of Sukuk Structures and Features

Sukuk structures and features have been evolving in line with the demand and development of the financial market (this will be discussed in detail in section 4). Sukuk started with only one Shariah contract i.e., Shell MDS Sukuk using *Bai Bithaman Ajil* contract. Over time, the market introduced various contracts, concepts and Shariah principles into sukuk based on the different needs and preferences of the issuers (ISRA, 2017). By using Shariah contracts such as sale, lease, agency, and partnership contracts, they create a financial obligation (principal and profit) between the issuers and the sukuk holders.

Sukuk came into the market to provide the issuers and investors with the same commercial features and benefits of a bond. As an essential type of asset, sukuk could be just as crucial for Islamic investors as traditional bonds are for conventional investors (Wan Mohamed Ali, 2014). The sukuk market is categorised under the debt capital market because the objective behind structuring a contemporary sukuk is to produce a fixed income return (Wilson, 2004; ISRA, 2017). The appetite for fixed-income instruments resulted in the vast majority of 90% sukuk in the market being structured to replicate the conventional unsecured bond. It simply shows that the investors want an Islamic version of a bond (Hanefah et al., 2013). In other words, despite the difference in the operationalisation of both instruments (bond is a simple loan while sukuk is based on various Shariah contracts and principles), the use case for both as funding vehicles are the same. Of course, except for the utilisation of sukuk proceeds, which must be for Shariah-compliant purposes only. Besides replicating the bond's fixed income nature, sukuk also must keep in line with the innovation in the bond's space, such as tier 1 bonds and perpetual bonds.

As a result, sukuk has gone through a high degree of Shariah dynamism and innovation since the inception of the Islamic finance industry. There has been a lot of development and innovation in sukuk structuring using the approved Shariah contracts and principles, which stems from the substantial and continuous investments in research and development by the regulators and industry players. These development and innovations align with the issuers' greater sophistication and complexity of requirements and needs.

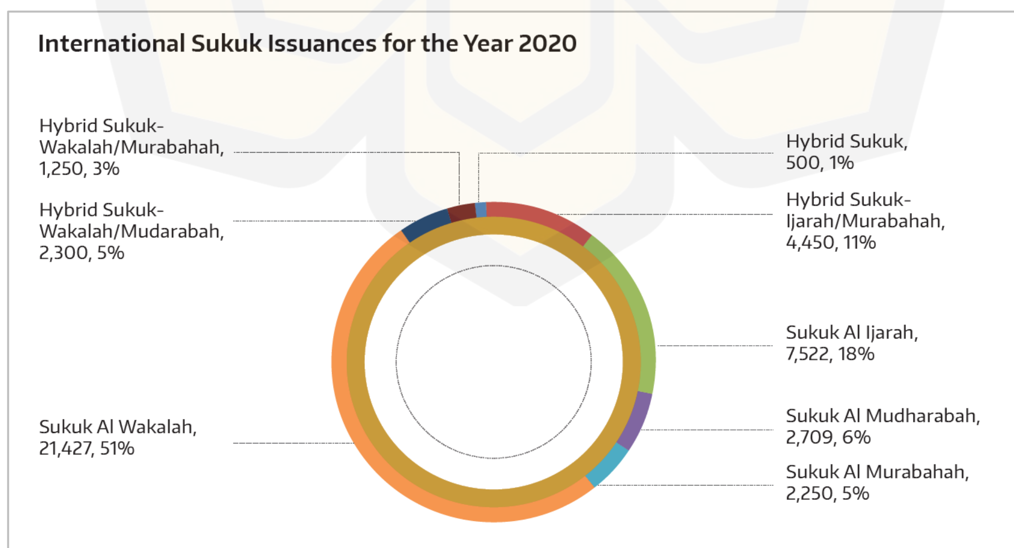
The innovation of sukuk takes place in different parts of the sukuk operationalisation. For example, it can be in the underlying assets, sukuk tenor, security and credit enhancement, payment mode, financial behaviour, etc. (Bakar, 2017). Among the common sukuk structures that can be found in literatures and textbooks are sukuk that are based on *Mudarabah, Musharakah, Wakalah, Ijarah, Murabahah, Salam, Istisna', Salam* and *Bai' Bithaman Ajil*. The underlying Shariah contracts are then applied to structure various commercial-based innovations in the market, such as senior unsecured sukuk, perpetual sukuk, convertible sukuk, exchangeable sukuk, and subordinated sukuk.

Besides the recently implemented Standard no. 59 (Standard 59), among existing AAOIFI Shariah Standards applicable to sukuk structuring are Shariah Standard No. 17 on Investment Sukuk and Shariah Standard No. 21 on Financial Paper. Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) Shariah Standard no. 17 on Investment Sukuk also provides numerous types of sukuk structures which are (AAOIFI, 2003):

1. Certificates of ownership in leased assets
2. Certificates of ownership of usufructs
   a. Certificates of ownership of usufructs of existing assets
   b. Certificates of ownership of usufructs of described future assets
   c. Certificates of ownership of services of a specified party
   d. Certificates of ownership of described future services
3. *Salam* Sukuk
4. *Istisna'* Sukuk
5. *Murabahah* Sukuk
6. *Musharakah* Sukuk
7. *Mudarabah* Sukuk
8. Investment Agency Sukuk
9. Sharecropping certificates (*Muzara'ah* Sukuk)
10. Irrigation certificates (*Musaqat* Sukuk)
11. Agricultural certificates (*Mugharasah* Sukuk)

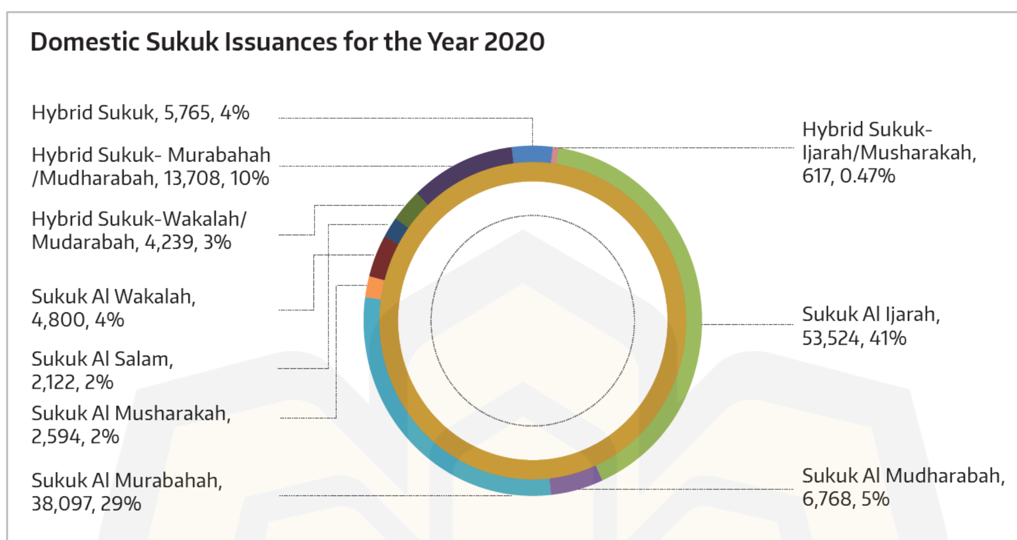
However, not all of them are widely used in the market. Agriculturally based *sukuk* (*muzara'ah*, *musaqat* and *mugharasah sukuk*) are among them, but they may be beneficial to jurisdictions that have potential agricultural projects. In recent years, the most popular structure remains hybrid sukuk (the focus of this paper), as reported in the Sukuk Report 2021 by IIFM. The following diagrams depict the breakdown of the Shariah structures used for sukuk issuances at various levels.

Table 2: International sukuk issuance for the year 2020



Source: International Islamic Financial Market (2021)

Table 3: Domestic sukuk issuance for the year 2020



Note: Sukuk *Wakalah* is defined by the report as a combination of *Ijarah* with *Murabahah*. It is also falls under hybrid sukuk

Source: International Islamic Financial Market (2021)

Despite the innovation and various usage of Shariah contracts, it is essential to note that the development of sukuk came from the need for an alternative to the conventional bond. A conventional bond represents a debt instrument rather than an equity instrument. Thus, sukuk has been structured to have a similar risk-reward structure and other features of a traditional bond (ISRA, 2017).

3. The implementation of Standard 59 on the Sale of Debt by AAOIFI

As far as this research is concerned, there are four regulatory or standard setting bodies that provide standards, guidelines, references, or provisions relevant to Shariah to be applied in sukuk structuring ("Shariah standards"). They are AAOIFI, the Securities Commission Malaysia ("the SC"), Islamic Financial Services Board and IIFM. In the context of the global sukuk market, AAOIFI Shariah standards are among the primary references in structuring a suku*k*. Though not a mandatory requirement, AAOIFI stated that 19 jurisdictions or countries fully adopt their Shariah standards, such as UAE, Bahrain, and Yamen, to name a few (AAOIFI, 2020). Therefore, any issuer that targets liquidity from these jurisdictions or countries will most likely structure their sukuk to comply with AAOIFI Shariah standards. As for Shariah-related rules and regulations for sukuk by the SC, it is mandatory to be complied with for the local sukuk issuances in Malaysia (Securities Commission Malaysia, 2021a).

Among existing AAOIFI Shariah standards relevant to sukuk structuring are Shariah Standard No. 17 on Investment Sukuk and Shariah Standard No. 21 on Financial Paper. Recently, the sukuk industry welcomed another Shariah standard by AAOIFI in the form of Standard 59 on the sale of debt ("Standard 59"). The compliance deadline was 1st January 2021 for the country that adopts AAOIFI on a mandatory basis, such as UAE. Standard 59 provides relevant requirements for the sale of debt. It discusses, among others, the definition of debt, types of sale of debt, rules on the sale of debt, and the contemporary application of the sale of debt (AAOIFI, 2018).

Two notable areas where the adoption of Standard 59 will affect the Islamic finance industry's existing practices are the rollover of debt-based financing and the trading of sukuk, which contains the element of debt. While the latter would be the focus of this paper, the former is a situation where a *Murabahah* financing cannot directly refinance another *Murabahah* financing. The previous practice in which such direct refinancing was a central feature is not acceptable under Standard 59 (Armstrong et al., 2021).

Sukuk structuring pre-implementation of Standard 59 by AAOIFI

Before we discuss the implementation of Standard 59 and its implication for the sukuk market, it is crucial to understand the historical development of sukuk structuring. Following this historical development, we will realise that the innovation in shariah contracts, structures, underlying assets, and their composition is directly related to the capability of the sukuk issuer, i.e., whether they can provide sufficient underlying assets or not. Providing sufficient assets is the key requirement in structuring a sukuk (Radzi, 2018). The requirement by Standard 59, specifically paragraph 8 on the sale and negotiability of the debt when combined with other assets, is directly related to this requirement. The following also provides the historical background of hybrid sukuk, which shall be affected by the implementation of Standard 59.

a. Debt based structure: 1990

Early 1990 was when the market familiarised itself with the sukuk concepts, mechanisms, and structures. Thus, the sukuk growth during this period was limited and focused on Islamic finance-friendly jurisdictions like Malaysia. In 1990, a non-Islamic company named Shell MDS Sdn Bhd issued a debt-based sukuk structure i.e., *Bai' Bithaman Ajil* (BBA) or sale with deferred price. It was the first ringgit-denominated corporate sukuk issued in Malaysia (ISRA, 2017).

b. Ijarah sukuk: 2001

In 2000, the prototype of the modern sukuk i.e. Ijarah Sukuk was introduced during the 11th Islamic Development Bank Symposium (Haneef, 2009). It is the well-known structure where the obligor sells certain physical assets to the Special Purpose Vehicle or SPV (issuer). Afterwards, the SPV leases the assets back to the obligor, and the rental becomes the sukuk return for the sukuk investors (Nasir et al., 2022).

The Government of Bahrain adopted this structure in September 2001, but it was mainly subscribed by the local investors as it did not meet the international bond standards. The sukuk was not rated, listed, or cleared through any clearing house. In December 2001, Kumpulan Guthrie Berhad, a Malaysian public listed company, also issued *Ijarah* sukuk. The sukuk documentation was in line with the internationally recognised U.S. Regulation S format (formats used for conventional global bonds) and was listed on the Labuan International Financial Exchange. However, the sukuk was neither rated by the leading international agencies nor cleared by any clearing house. As a result, it was not widely distributed in the global capital markets (Haneef, 2009).

Later in 2002, the Government of Malaysia issued the first Islamic global *Ijarah* Sukuk backed by sovereign assets such as administrative buildings, hospitals, and academic institutions. The sukuk complied with the U.S. Regulation S and Rule 144A formats used for conventional global bonds. It was the first sukuk listed on the Luxembourg Stock Exchange and rated by Standard & Poor and Moody. It was offered globally to Islamic and conventional investors. The issue was a massive success that it was twice oversubscribed (Haneef, 2009). It was an important achievement because the sukuk integrated *Ijarah* Sukuk with the conventional bond practices such as listing, ratings, dematerialised scripts and centralised clearance (Radzi, 2018). After this sukuk, there were other successful *Ijarah* sukuk issuances, such as by the State of Qatar (USD700 million) and the Kingdom of Bahrain (USD250 million) in 2004.

c. Asset-backed sukuk vs asset-based sukuk: 2002

Ijarah sukuk was initially structured to be an asset-backed sukuk. But later, it was structured to be an asset-based sukuk which is also the prevalent structure in the present sukuk market. In principle, asset-backed sukuk is like the securitisation process, where the financing is raised on an off-balance sheet basis. Hence, issuing an asset-backed sukuk will not further increase the issuer's existing debt level under the balance sheet. The investors also have recourse to the underlying assets in the event of default and face assets risk throughout the sukuk period rather than the issuer's credit risk (as in the case of asset-based sukuk). It also renders the sukuk a secured instrument (ISRA, 2017).

In 2002, the Malaysian Global Ijarah Sukuk was initially structured to be an asset-backed sukuk as it was backed by sovereign assets. But, the Government of Malaysia then had unredeemed unsecured international bonds, which contained standard negative pledges that restrain the bond issuer (Government of Malaysia) from issuing a bond that is not in *pari passu* with the existing unsecured bond. Thus, issuing an asset-backed sukuk would directly breach this clause (Haneef, 2009). As an explanation, when there is an event of default in asset-

backed sukuk, the sukuk holders have the priority claim over other creditors (in this case, the existing bondholders) towards the underlying assets.

As a solution, the structure was revised by giving beneficial ownership (but not legal ownership) to the sukuk holders during the sukuk's tenure, which satisfied the transfer of asset ownership requirement under the *Ijarah* principles. But, in the event of default, the sukuk trustees cannot retain or sell the assets to any third party. The sole recourse by the sukuk holders to the assets would be to dispose of the assets to the Government of Malaysia only and to seek payment. As a result, disposing of the assets to the Government of Malaysia renders the sukuk holders as the unsecured creditors. It thus renders the sukuk as an asset-based sukuk, although the sukuk had underlying assets (Haneef, 2009; Radzi, 2018). Consequently, the sukuk holders would only have recourse to the issuer (Government of Malaysia), not the underlying assets. In the current sukuk market, almost all sukuk are asset-based.

d. Short-term Salam sukuk and Ijarah sukuk by the Kingdom of Bahrain: 2001-2005

The Central Bank of Bahrain launched the monthly programme of short-term Bahraini dinars *Salam* sukuk issuances in 2001 to broaden the depth and liquidity of the Islamic financial markets in Bahrain. Though oversubscribed, the sukuk represents sale of debt. Thus, it cannot be traded in the secondary market. Therefore, the Central Bank of Bahrain launched a separate programme using the *Ijarah* principle in 2005 (ISRA, 2017). This development is worth to be mentioned because the *Salam* structure is seldom used in the market. It shows that not all sukuk structures proposed by various proponents (such as profit loss sharing, *Salam* and others) can be implemented easily in the market. In this case, the feature of tradability is significant that they had to launch a separate program using the *Ijarah* principle.

e. Blended asset sukuk or hybrid sukuk: 2003

Blended asset sukuk, or also known as hybrid sukuk ("hybrid sukuk"), consists of two or more components where the first component represents physical or tangible assets and the second component, in most cases, represents Shariah-compliant receivables. The primary condition that must be met is that the first component has to form 51% or 30% of the whole sukuk portfolio (the differences between these ratios to be explained below). This structure relieves potential issuers who cannot provide 100% physical or tangible assets based on the value of the sukuk issuance, as per the case in *Ijarah* sukuk.

The Islamic Development Bank ("IDB") introduced the structure to the market in 2003 with a USD400 million sukuk as IDB lacked sufficient physical assets to be made as the underlying assets and had more Shariah-compliant receivables on its book. The sukuk consisted of 65.8% *Ijarah* assets (complied with the minimum 51% physical or tangible assets portion as decided by the Shariah scholars at that time), and the rest consisted of *Murabahah* and *Istisna'* assets (receivables). Also named *Istithmar* sukuk at that time, the structure was well received by the Islamic and conventional investors. A few years later, IDB even came back with a lower physical or tangible assets portion, where the *Ijarah* asset portion consisted of 30% only (Haneef, 2009).

In the middle east, trading debt or receivables is not allowed except at par, following the rule of *Bay' al-Dayn*. However, with the hybrid sukuk structure, debt or receivable is allowed to be part of the total underlying assets as long as the physical or tangible assets ("tangible assets") forms 51% or 30% of the total sukuk issuance amount based on the concept of *Khultah* (mixture of assets) (Haneef, 2009). Hybrid sukuk is an alternative to debt-based sukuk (Noor and Shahimi, 2013).

The structure also satisfied the requirement provided by AAOIFI Shariah Standard no. 21 on Financial Paper (2003, before the implementation of Standard 59 in 2021). The standard requires the tangible assets to be 30% for it to be tradeable at premium, discount, or par. This clause, however, was for shares trading. As there was no specific requirement for sukuk trading, it was adopted by the market in structuring hybrid sukuk (ISRA, 2017). This requirement later changed with the implementation of Standard 59.

f. Partnership-based sukuk or asset light sukuk:2001-2008

Despite the lower asset requirement under hybrid sukuk, there were still corporates that could not meet the 30% physical assets requirement due to their lack of tangible assets that can be set aside to be made as the underlying assets for the sukuk. Nonetheless they were still interested in tapping the liquidity available in the Islamic capital market. Therefore, asset light sukuk came into the market, which refers to *Musharakah* sukuk and

Mudarabah sukuk. Therefore, under these structures, it is not a requirement to provide any physical assets at the time of sukuk issuance (Radzi, 2018).

These partnership-based sukuk were tested in small issuances from 2001 until 2005. The volume and size started to increase in 2005 with the issuance of Islamic Residential Mortgage-Backed Securities by Cagamas (*Musharakah*), *Mudarabah* sukuk by PG Municipal Assets Bhd, and exchangeable *Istithmar* sukuk by Khazanah (Haneef, 2009). However, partnership-based sukuk experienced a slump due to the infamous remarks by Sheikh Taqi Usmani in 2007 (Usmani, 2007). He stated that 85 per cent of sukuk in the market that time were not Shariah compliant due to the application of purchase undertaking in *Musharakah* and *Mudarabah* contract.

The name 'asset-light' was given because the issuer may not have any revenue-generating asset to issue the sukuk at the outset, though the assets will be acquired or developed later to provide the return and cash flow to the investors (ISRA, 2017). An example of such sukuk was the USD 300 million Dubai Metals and Commodities Exchange (DMCE) sukuk issued in 2005. However, this structure raised a few critical Shariah issues, that it was banned with the issuance of AAOIFI rulings in February 2008. Among the critical issue related to this research was the tangibility ratio issue. The land contributed by the DMCE was only worth USD48 million, while the capital contribution from the sukuk was USD300 million. While the sukuk holders own *Musharakah* units, the sukuk represents 86% cash and 14% tangible or physical assets. Therefore, it did not meet the tangibility ratio requirement by AAOIFI, where it should not be less than 30% (AAOIFI Shariah Standard no. 21 on Financial Paper). Thus, the sukuk holders could not trade the sukuk as it was equivalent to cash trading (Haneef, 2009; Radzi, 2018).

g. Criticism towards the sukuk industry: The infamous Sheikh Taqi Usmani remarks in 2008

The sukuk market went through constant market expansion from 2001 until 2007 (ISRA, 2017). However, the growth went south in 2008 due to two main events. The first is the historical global financial crisis. Secondly, the criticism by Sheikh Taqi Usmani towards certain partnership-based sukuk, which were primarily issued in the Emirates of Dubai. He stated that 80% of the sukuk *Musharakah* in the market at that time were non-Shariah compliant. He specifically mentioned the non-Shariah compliant practice of undertaking by the issuer/obligor to purchase the assets at a fixed price from the sukuk holders upon maturity or event of default (Usmani, 2007).

Following the remarks by Sheikh Taqi Usmani, AAOIFI issued a resolution in 2008 which provided requirements that rendered the asset-light sukuk structures at that time to be non-compliant with the resolution (Radzi, 2018). As a result, partnership-based sukuk or asset-light sukuk offering such as *Musharakah* sukuk and Mudarabah sukuk were not seen in the market since the resolution was issued in 2008 (Haneef, 2009).

h. Post-2008

As the AAOIFI resolution effectively wiped-out asset light sukuk from the market post-2008, the market returned to the basic sukuk structures. The Republic of Indonesia successfully issued its inaugural USD500 million *Ijarah* sukuk. The sukuk was oversubscribed up to USD3 billion. The Kingdom of Bahrain also returned with a USD650 million *Ijarah* sukuk. Petronas also debuted its *Ijarah* sukuk in August 2009, which was remarkably oversubscribed by five times. All of these were asset-based *Ijarah* sukuk (Haneef, 2009).

i. The return of hybrid sukuk or asset-blended sukuk: 2012

Just when the market returned to the traditional *Ijarah* sukuk, it faced another stumbling block as the Repurchase Undertaking in *Ijarah* structures was questioned in the IFA-OIC in its 20th session (2012). They prohibited the structure due to the similarity of the asset-based *Ijarah* sukuk with the *bay' al-inah* (ISRA, 2017), nonetheless it was a resolution and not a regulation. So, there were still *Ijarah* sukuk issued after 2012 but were mainly by sovereigns issuers due to their ability to provide the underlying assets, such as Turkey (2012), the Hong Kong Government (2014), the Government of Luxembourg (2014), the State of Senegal (2014), the United Kingdom (2014) and the Government of Jordan (2016) (ISRA, 2017).

During this period, the market was also slowly returning to asset blended sukuk. It started with the issuance of *Wakalah* sukuk (a form of asset blended sukuk) by the Government of Malaysia in 2011. The sukuk was a global USD 2 billion dual-tranche *Wakalah* sukuk, which consisted of 52% Shariah compliant shares and 48% *Murabahah* receivables. It received tremendous participation from local and global investors, especially from the Middle East. The Hong Kong Government also issued a sukuk with the same structure in 2015; one-third

of the underlying assets consisted of office buildings in Hong Kong, while the rest were Shariah-compliant commodities (*Murabahah* receivables) (ISRA, 2017).

Based on the above discussion, we can conclude that structuring a sukuk is not about the Shariah structure only. It is also about providing the best structure that complies with the relevant regulations and ultimately suits the capability and appetite of the issuers. Furthermore, the issuers' capability to provide the underlying assets for a sukuk issuance has been the main driver of the innovation in sukuk structuring. Lastly, hybrid sukuk is the recent and more accepted solution at the global sukuk market as it aligns with the relevant AAOIFI Shariah standards (before the implementation of Standard 59). It also provided the issuer with limited capability in providing the underlying assets, with the least tangible asset requirement of 30% only.

Based on the historical development of sukuk as discussed above, a few conclusions can be made. Firstly, structuring a sukuk is not about the Shariah structure only. It is also about providing the best structure that complies with the relevant regulations and ultimately suits the capability and appetite of the issuers. Secondly, the issuers' capability to provide the underlying assets for a sukuk issuance has been the main driver of the innovation in sukuk structuring. Lastly, hybrid sukuk is the recent and more accepted solution at the global sukuk market as it aligns with the relevant AAOIFI Shariah standards (before the implementation of Standard 59). It also provided the issuer with limited capability in providing the underlying assets, with the least tangible asset requirement of 30% only.

Herein, we will investigate how the implementation of Standard 59 will shape the sukuk industry moving forward especially towards structuring a hybrid sukuk.

4. The Innovation in Hybrid Sukuk

There have been a lot of innovations in structuring hybrid sukuk in the global sukuk market, especially on the tangible asset portion, as per the following table 4:

Table 4: Innovations in hybrid sukuk

Sukuk	Issuance Year	1st Sukuk Component	2nd Sukuk Component
Malaysia sukuk Global Berhad	2016	Vouchers representing travel entitlements	Shariah-compliant shares
Dar Al Arkan	2017	*Ijarah* assets	*Murabahah* receivables
Sharjah sukuk Programme Limited	2017	*Ijarah* assets	*Murabahah* receivables
KSA sukuk Limited	2017	*Mudarabah* agreement, a form of Islamic investment management partnership	*Murabahah* receivables
Apicorp sukuk Limited	2017	*Wakalah* Assets that are *Ijarah* Assets and/or tangible sukuk	*Murabahah* receivables

Source: Respective sukuk's information memorandum or offering circular

IIFM Sukuk Report 2021 stated that sukuk *Wakalah* (defined by the report as a combination of *Ijarah* with *Murabahah* and is considered as hybrid sukuk) represented 51% of the total international sukuk issuances for the year 2020, while other hybrid sukuk structures represented 13.17% of the 2020 international sukuk issuances. Among the combinations of contracts for hybrid sukuk as provided by the report are (International Islamic Financial Market, 2021):

1. *Murabahah* and *Ijarah*
2. *Murabahah* and *Mudarabah*
3. *Murabahah* and *Wakalah*
4. *Ijarah* and *Musharakah*

In most cases, hybrid sukuk comprises two components of underlying assets. But there were hybrid sukuk that consisted of more than two components. For example, Projek Lintasan Shah Alam Bhd (domestic sukuk issued in 2008) consisted of *Ijarah*, *Mudarabah* and *Ijarah mawsufah al-dhimmah* components. The second example would be the sukuk issued by the Government of Malaysia in 2011 which consisted of *Ijarah* assets, *Murabahah* receivables, and Shariah-compliant shares. RAM Rating stated that the trend towards hybrid sukuk

had been driven by conformity to the AAOIFI Shariah Standards. In addition, the landmark USD6 billion sukuk by Saudi Aramco in 2021 also used the hybrid sukuk structure (Islamic Markets, 2021).

Why hybrid sukuk is preferred over other sukuk structures?
As mentioned before, the issuer must fulfil the essential requirement to provide sufficient underlying assets. However, this is not an easy feat for the potential issuers due to the following factors (ISRA, 2017):

1. They might not be able to provide adequate unencumbered assets that match the sukuk issuance amount
2. The assets they have might be complex or otherwise not suitable for a sukuk issuance, or
3. The issuers might have any constrain in selling the assets to the sukuk holders, given standard negative pledge provisions provided to earlier creditors.

Between asset-backed sukuk and asset-based sukuk, the latter is preferable by the issuers due to the constraints and requirements in the asset-backed sukuk structure as per our discussion above. But, even with some asset-based sukuk such as *Ijarah* sukuk, it still requires the issuers to provide Shariah-compliant assets with a value similar to the total issuance amount, to exist during the issuance and throughout the sukuk tenure (ISRA, 2017).

Thus, it gave birth to the popularity of hybrid sukuk. Hybrid sukuk is the preferred sukuk structure, especially in recent years, because of its flexibility in structuring the sukuk (multiple combinations of Shariah contracts based on the issuer's preference). It also addresses the issuer's limitation in providing sufficient tangible assets as the underlying assets as they have to provide assets with the value equivalent to 51% or 30% of the total sukuk issuance amount only (Haneef, 2009; ISRA, 2017). The rest of the percentage would be covered by the receivables from the sale of commodities. In other words, it resolves the issuer's dilemma of providing 100% value of tangible assets as the underlying asset for the sukuk issuance (ISRA, 2017).

As an illustration, if the nominal value of a hybrid sukuk is USD1 billion, the issuer must provide tangible assets, e.g., a commercial building (for *Ijarah*) with a value of USD300 million only (applying the 30% requirement). As a comparison, for sukuk *Ijarah* with the same nominal value of USD1 billion, the issuer must provide tangible assets, e.g., a commercial building with a value of USD1 billion.

Furthermore, the issuers can choose any types of tangible assets that they prefer, or more accurately, what kind of tangible assets they have at the point of issuance. As mentioned in Table 4, the tangible asset component can be in the form of *Ijarah* assets, *Mudarabah* assets, *Istisna'* assets or even rights such as vouchers and shares. This flexibility is crucial for the issuers, as the availability of the underlying assets is critical in enabling the issuer to issue a sukuk.

Besides that, the issuer must also be willing to set the assets aside during the sukuk tenor. It means their assets cannot be sold, leased, or used as securities for any financial or administrative requirements because the ownership of the assets has been transferred to the sukuk holders, whether legally or beneficially. Though in most structures, the assets will return to the issuer by repurchasing them, from the management perspective, it is not a good practice. Because the company's assets are tied by negative pledge or limitation which restricts their freedom and flexibility of any commercial conduct and corporate exercise towards their assets (Bakar, 2017).

The new tangibility ratio requirement and its implication for structuring hybrid sukuk
Table 3 summarises the new requirements by Standard 59 relevant to structuring hybrid sukuk and the comparison with the previous practices in the sukuk industry:

Table 3: Comparison between the requirements by Standard 59 and the practice before the implementation of Standard 59

New Requirement by Standard 59	The Practice Before the Implementation of Standard 59
The tangibility asset ratio shall exceed 50%* and must be maintained throughout the sukuk period ("tangibility ratio"). *For ease of reference, herein will be referred as 51%. Because 50.00000001% or similar numbers also satisfied the requirement but very hard to be used as reference in this paper.	51% or 30% ratio of tangible assets No provision that requires maintaining any tangibility ratio throughout the sukuk period
If the tangibility ratio falls below 51%, it must be brought up to the allowable ratio (51%) within the period as prescribed by the Shariah advisor.	No provision that requires maintaining the tangibility ratio throughout the sukuk period
If the tangible asset ratio falls below 33%, the issuer must advertise/inform the sukuk holders that the sukuk cannot be traded, except by following the Shariah rules on debt trading (at par only). If the sukuk is listed on any exchange, it must be delisted.	No provision that requires maintaining the tangibility ratio throughout the sukuk period No provision that requires the sukuk must be delisted

Source: AAOIFI (2018)

This paper will refer to the above requirements as the tangibility ratio requirement by Standard 59. According to ISRA, the key Shariah requirements in structuring sukuk are (ISRA, 2017):

1. Shariah-compliant contracts
2. Shariah-compliant underlying assets
3. Shariah-compliant utilisation of proceeds
4. Redemption and trading of sukuk in line with Shariah

Based on the above key Shariah requirements, the implication of Standard 59 for structuring hybrid sukuk are related to the underlying assets and tradability of sukuk, which will be discussed in detail in the following sections.

The implication of Standard 59 towards the underlying assets requirements for hybrid sukuk

Among the apparent impact on the sukuk issuers is the higher asset tangibility ratio of 51%. Before the implementation of Standard 59, among the popular the tangibility ratio adopted in the industry was 30%, adopting the requirement by Paragraph 3/19 of Standard 21 on financial paper (AAOIFI, 2015). The provision is for shares trading, not specifically for sukuk. But it was also applied in the context of sukuk before the implementation of Standard 59 (ISRA, 2017).

The difference between 30% and 51%, in the context of USD1 billion sukuk issuance, an average issuance amount for a global senior sukuk issuance, the difference between providing USD300 million or USD510 million underlying assets is enormous for the issuers, especially for the corporate issuers. The higher tangibility ratio requirement of 51% also limits the issuer's ability to leverage up, which results in the most likely event that they will opt for conventional bond issuance instead of sukuk, which will further hurt the sukuk supply (Saba and Barbuscia, 2021).

Furthermore, the 51% asset tangibility ratio must be maintained throughout the whole sukuk period. This condition was not a condition in the previous global senior sukuk issuances. To illustrate the extent of this condition, we must remember that the underlying tangible assets are open to some risks that may affect their value. Take commercial buildings for example, their value may depreciate due to various events such as fire accidents, damage to the building, and market sentiment towards the building area. As a result, the value of the commercial building may depreciate below RM510 million (applying the 51% requirement over USD1 billion issuance). The same situation could also be applied on shares, where the assets price volatility is relatively higher than physical assets such as a commercial building.

Before Standard 59, this was not an issue (depreciated below RM510 million) as the issuer only needs to bring the value up to 51% on a best effort basis only (Islamic Finance News, 2021a). There was also no strict requirement when the value depreciated below RM510 million (such as the delisting requirement). However,

by virtue of Standard 59, when the value depreciates below RM510 million, the issuer needs to bring the value up to 51% within a specified period as their Shariah advisor advised.

The additional requirement of maintaining the value does not stop here. Suppose the value of the tangible assets further falls below 33%. In that case, it mandates the worst ultimatum towards the sukuk, which shall be further discussed in the next section as it relates to the tradability of the sukuk.

The implication of Standard 59 towards the tradability of hybrid sukuk

One of the main features of sukuk (and bond) is its ability to be traded in the secondary market. The investors buy a sukuk knowing that they can liquidate their position in the secondary market before the maturity of the sukuk when they need cash or for any other relevant purposes. This feature is important because sukuk is also an essential tool in liquidity management, especially for Islamic banks (Dolgun and Mirakhor, 2021). Thus, the tradability of sukuk is the primary consideration when the investment bankers structure a sukuk. As trading conventional bond is without any limitation in trading the bond as it does not have to comply with any rules, the tradability of sukuk is guided by the relevant Shariah principles. In other words, each sukuk structure such as *Ijarah* sukuk, *Mudarabah* sukuk or hybrid sukuk are subject to the applicable rules concerning sukuk tradability. Most of them are related to the impermissibility to sell something that one does not own (ISRA, 2017) and, relevant to this research, the rules on *Bay' al-Dayn* or the sales of debt as provided by Standard 59.

Murabahah sukuk, which represents 100% commodity *Murabahah* receivables, is among the preferred structure in Malaysia. It represents 54.03% of the total sukuk issued in the fourth quarter of 2021 (Securities Commission Malaysia, 2021b). *Bay' al-Dayn* is allowed to be traded at any price by the Shariah Advisory Council of the Securities Commission Malaysia ("SAC of the SC") and to be applied in the Malaysian Islamic capital market (Securities Commission Malaysia, 2006). Therefore, *Murabahah* sukuk (which represents the *Murabahah* receivables) in the Malaysian secondary market can be traded at any price based on the agreement between the parties involved, not necessarily at par.

However, under Paragraph 5/2/15 of AAOIFI Shariah Standard no. 17 on Investment Sukuk ("Standard 17"), *Murabahah* certificate is not allowed to be traded after the delivery of the *Murabahah* commodity to the sukuk investors. Because at this point, the sukuk represents receivables, which is not permitted by the standard because it allows the sales of debt at par price only. Trading a sukuk at the secondary market at par price is impossible as the market steers the price of an asset toward its actual value through the natural workings of supply and demand. Under the standard, the *Murabahah* sukuk can only be traded at any price before the delivery of the commodity because the certificate (sukuk) at that point in time represents the commodity, not the receivables (AAOIFI, 2003).

As *Murabahah sukuk* is easier to illustrate the application of *Bay' al-Dayn* rules in sukuk trading, Standard 17 paragraph 5/2 also provides the tradability rules for all types of sukuk structures mentioned under the same standard as mentioned in section 2. As for hybrid sukuk, similar tradability rule by AAOIFI Shariah standards was not clear before the implementation of Standard 59, and AAOIFI themselves admitted it (Islamic Finance News, 2021b). The only reference adopted by the market was the 30% tangibility ratio on Paragraph 3/19 of Standard 21 on financial paper. But, this paragraph was specifically for shares trading, not sukuk trading (AAOIFI, 2015). In addition, there is no requirement by the same paragraph to follow the *Bay' al-Dayn* rules (at par only) or delisted if it breached the 30% tangibility ratio.

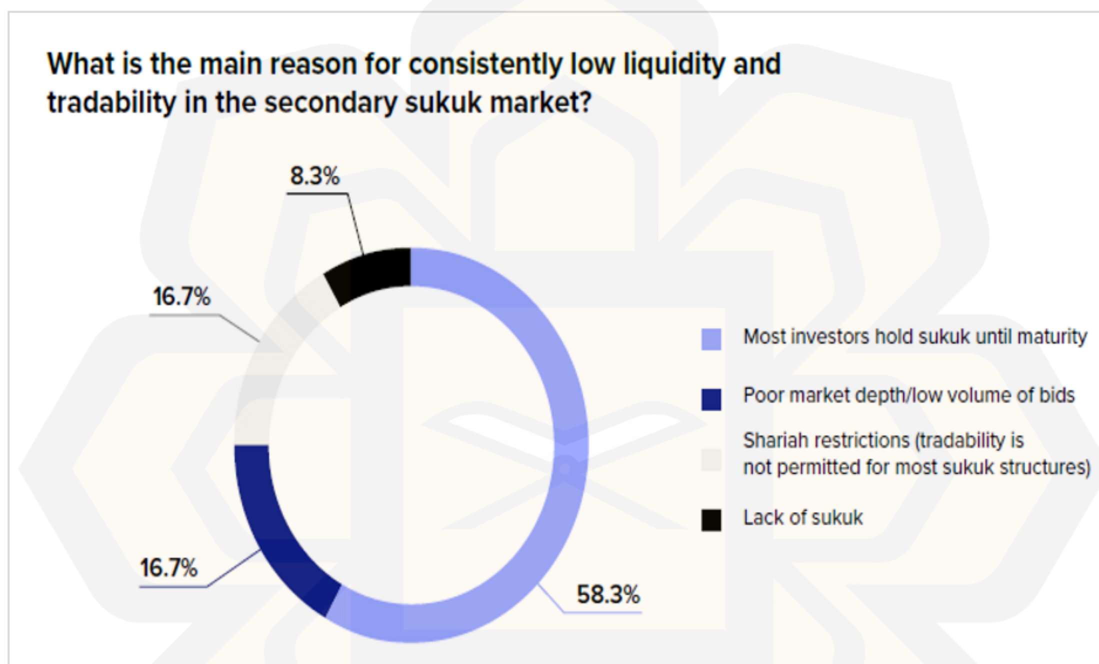
Thus, Standard 59 imposed a conclusive ratio (51% at inception, 33% minimum) that must be maintained because only then the sukuk can be traded at any price in the secondary market. In this case, the *sukuk* will not be considered as debt because the tangible asset portion is significant i.e., more than 33%, following the rule of less than a third is considered as little. In this situation, trading the hybrid sukuk represents trading the tangible assets, not debt (as in the case in *Murabahah* sukuk). Therefore, it can be traded in the secondary market at any price. While this paper will not discuss the shariah justification in details, refer to Standard 59 for the detailed Shariah justifications.

Operationally, suppose the value goes below RM330 million (33%). In that case, the sukuk holders need to be informed by the issuer that the sukuk must be traded according to the sale of debt rule (must be traded at par only) and must be delisted if listed on any exchange. The delisting must be made because logically it is hard to observe the *Bay' al-Dayn* rules in the secondary market. The impact of delisting is huge because it provides additional risk for the sukuk holders. Such risk is not present in the conventional bond. According to a survey by Refinitiv, 58.7% of the sukuk holders hold the sukuk to maturity (Refinitiv, 2021). The investors (especially

the Islamic financial institutions) are also cautious of the delisting event as most want to hold the sukuk to maturity. As a result, the lack of investors' participation in the sukuk that complies with Standard 59 may result in the lack of interest in the book-building exercise, ultimately leading to a higher funding cost for the issuer (Gulf Bond and Sukuk Association, 2021).

Thus, the tradability of sukuk is a vital consideration when structuring a sukuk (ISRA, 2017). In the same survey by Refinitiv (2021) as per Table 4, the issue of tradability was among the main reason liquidity and tradability have been low in the secondary market. It shows that, even before the implementation of Standard 59, the tradability of sukuk is already a concern among the industry players. Further complexity with the implementation of Standard 59 by AAOIFI may further aggravate the situation.

Table 4: Survey on sukuk



Source: (Refinitiv, 2021)

5. Conclusion

Based on the above, it can be concluded that the requirements under Standard 59 significantly impact the structuring of hybrid sukuk. The new requirements are stricter by requiring a higher tangibility ratio and additional requirement to maintain the tangible asset value. Furthermore, the requirement of delisting the sukuk if it falls below 33% is a big red flag for the sukuk holders if they intend to hold the sukuk until yield to maturity. While research on the Shariah justification behind these requirements and their impacts on the offering of hybrid sukuk will be conducted separately, the author believes that the implementation of Standard 59 shall be another historical checkpoint in sukuk structuring. Like other historical checkpoints of sukuk structuring as discussed in the early part of this paper, it requires the industry players to pivot and come out with solutions to maintain the positive growth of the sukuk industry. Hence, further research on this area is crucial.

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The Nature of the Administrative Relationship between the Shariah Board and the Stakeholders in the Kingdom of Bahrain

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Abstract

Corporate governance involves a set of relationships between a company's management, its board, its shareholders, and other stakeholders. With regards to Islamic corporate governance (ICG), the institution of the Shariah board comes into the picture and plays a crucial role in ensuring that all corporation activities are in line with the Shariah principles. In addition, shareholders also play a big role as active participants and conscious stakeholders in the process of decision-making and policy framework to promote the interest of the stakeholders. The other stakeholders including the community should also play their roles in stimulating the social well-being of the community. This paper attempts to define the administrative relationship between the Shariah board and other stakeholders by looking at their duties and roles in the Kingdom of Bahrain. For this purpose, it relies on doctrinal and Islamic worldview methodologies and uses both content and legal analysis methods. After the discussion, it is concluded that the administrative relationships between the Shariah board and other stakeholders may take the form of *wilāyah*, *imāmah*, or proactive and reactive *istishārah* (consultation), depending on the type of stakeholders.

Keywords: *Shariah* board, Stakeholders, Nature of relationship, *Shariah* governance, the Kingdom of Bahrain

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1. Introduction

The system of Islamic Corporate Governance (ICG) in Bahrain is aimed at protecting investors and other stakeholders including the regulators and the state. It also seeks to enhance the company's value (CBB Corporate Governance Code, 2010). It relies on multiple bodies and mechanisms for the enforcement of the ICG. The stakeholders including the shareholders, the Central Bank of Bahrain (CBB), and the government shall participate in achieving the goal above (CBB Corporate Governance Code, 2010). From an Islamic perspective, this embodies the principles of *taʿāwun* (cooperation) and *al-ʿaml al-jamāʿī* (teamwork).

As far as Islamic banks are concerned, Shariah Board (SB) is not isolated from the monitoring network. It is bound, together with the other stakeholders, to participate in strengthening the Shariah governance and defending the interest of the stakeholders (Shariah Governance Module, A.1.1 and A.1.2.). The Bahraini laws and regulations stipulate the duties, roles, and responsibilities of the SB towards other stakeholders and vice versa. The nature of the relationship between the SB and the stakeholders of the ICG, on the other hand, justifies these duties, roles, and responsibilities and lays their epistemological foundation.

These duties, roles, and responsibilities differ with the type of stakeholders involved in the relationship. This paper considers each relationship separately. It is divided into the following core themes (i) the relationship between the SB and the bank (ii) the relationship between the SB and the community consisting

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of the customers, the Central Shariah Supervisory Board (CSSB), the central bank, the Auditing, and Accounting Organization for Islamic Financial Institutions (AAOIFI), the King and the National Assembly.

2. Literature Review

Literature shows that researchers of Islamic corporate governance agree that ICG takes into account the welfare of the whole Islamic society (Fatima et al., 2019). In the context of an Islamic bank, the Islamic society includes BOD, managers, shareholders, SB, customers, and regulators (Al-Nasser Mohammed & Muhammed, 2017; Jamaludin, 2021). According to (Iqbal and Mirakhor, 2004), the relationships between these stakeholders are based on concepts of the right of property and contract. The former principle requires the stakeholders to acquire property through lawful means and not to waste or squander it. It also gives them the right to jointly own it. Under the latter principle, the managers should fulfill their explicit and implicit obligations toward other stakeholders under partnership contract namely *mushārakah* and *muḍarabah* (Besar, 2019).

The authors of the ICG dig further to examine the principles governing the relationship between the stakeholders of the ICG. Some of these principles govern the decision-making process like *shūra* (consultation) and *ḥisbah* (effective Shariah supervision) (Alnofli, 2021). Others address the agency problem such as accountability, transparency, and adequate disclosure (Aziz and Ghadas, 2022). However, these principles concern only the relationship between the internal stakeholders, namely, the board of directors, managers, and shareholders without involving external key participants such as customers, regulators, courts, and the government.

The exception to this is a study conducted by (Hamza, 2013) which explored the administrative relationship between the SB and the central SB. He found out that this relationship exists in some countries, considerably in South Asia, but not in others, like Arab Gulf countries including Bahrain. In the former countries, the central SB has authority over the SBs through which it can validate or repeal their decisions but that is not the case for the latter countries because the Shariah governance model followed therein is decentralized.

Nevertheless, the literature does not cover the administrative relationship between SB and other stakeholders like the customers, the central bank, the judiciary, and the government from the perspective of ICG (Alnofli, 2021; Jamaludin, 2021). Consequently, it does not define the nature of the relationship between the SB and the stakeholders of the ICG. The importance of this is that it underlies the duties, roles, and responsibilities of the SB towards the stakeholders. The current study, therefore, attempts to fill this gap with specific attention to the administrative relationships involving the SB.

3. Method

This study uses doctrinal legal analysis for understanding the duties, roles, and responsibilities of the SB and the stakeholders towards each other as per the law of the Kingdom of Bahrain.[1] The legal rules are obtained from primary sources. These primary sources are legislation including the Central Bank and Financial Institutions Act 2006 and Shariah Governance Module, 2017, and resolutions of the Central Bank of Bahrain including Resolution no.15, Resolution no.18, 2020, Resolution no.39, 2021, Resolution No. (20) for the year 2015 in Respect of the Establishment of a Centralized Shariah Supervisory Board.[2]

Besides, this research study relies on the Islamic worldview methodology.[3] It refers to the *Quran* and authentic *Sunnah* as written in *Ṣaḥīḥ al-Bukhārī* and *Ṣaḥīḥ Muslim*, and the practice of the companions as well as the opinions of Al-Māwardī because he is a scholar of Islamic law of governance and political Islam. This is to examine the duties, roles, and responsibilities of the concerned stakeholders toward each other and define the nature of the relationship between them from an Islamic perspective.

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[1] Doctrinal legal research, as conceived in the legal research domain, is research about what the prevailing state of legal doctrine, legal rule, or legal principle is. A legal scholar undertaking doctrinal legal research, therefore, takes one or more legal propositions, principles, rules, or doctrines as a starting point and focus of his study. He locates such a principle, rule or doctrine in statutory instrument (s), judicial opinions thereon, discussions thereof in legal treatises, commentaries, textbooks, encyclopedias, legal periodicals, and debate, if any, that took place at the formative stage of such a rule, doctrine or proposition. Thereafter, he reads them in a holistic manner and makes an analysis of the material as well as of the rules, doctrines and formulates his conclusions and writes up his study (Ahmad et al., 2020).

[2] Primary sources of law are rules of law that are binding upon the courts, government, and individuals such as constitutions, statutes, regulations, treaties, court orders, administrative regulations, policy material. See (Ahmad et al., 2020).

[3] Islamic worldview methodology includes Islamic epistemology, which unites *ḍarūrī* knowledge (knowledge obtained by necessity) and rational knowledge (*ʿaqlī*) evidence with *naẓarī* knowledge, and revealed knowledge (*naqlī*), the traditions of past and current relevant Islamic research (Alias and Hanapi, 2017).

4. Results and Discussion

4.1 The administrative relationship between the Shariah board and the bank

According to the Shariah governance system of the Bahraini Shariah system, all Islamic banks should establish an SB consisting of three scholars specialized in *fiqh al-muʿāmalāt* (Islamic law of transaction). The members of the SB shall be appointed by a resolution of the shareholders in their annual general assembly upon the recommendation of the BOD (Shariah Governance Module, section 2.1.1.)

The main function of the SSB is to supervise the Islamic bank's operations and activities to ensure compliance with the Islamic Shariah, and also monitor and review transactions to ensure full compliance with Shariah rules and principles and its pronouncements (Shariah Governance Module, section 2.3.2.). In pursuit of this, the SSB may issue *fatwas* on matters presented by the bank (Shariah Governance Module, section 2.3.1.). These *fatwas* should be disclosed to the shareholders (Shariah Governance Module, sections 6.1.2, 2.9.6.). On this matter, Allah (ﷻ) forbids the people to hide the truth [Islamic teachings] while you know (the truth) (Surah al-Baqarah, 2:42).[4] The same goes for the amendment and revocation of these *fatwas* in obedience to the *Qurānic* verse ''Allah (ﷻ) said those who suppress the proofs and the guidance "Except those who repent, and reform, and proclaim. Those—I will accept their repentance. I am the Acceptor of Repentance, the Merciful' (Surah al-Baqarah, 2:160).

The SSB should also review the contracts, agreements, and other legal documentation, and the annual *zakāh* calculations. It also should review the reports and observations of the Shariah coordination and implementation function and internal Shariah audit function and provide advice on such reports and observations. These roles fall under '*'muḥāsabat al-nafs*''(the duty of self-judgment).

The SSB should specify the means of disposal of earnings that have been released from sources or by means prohibited by Shariah rules and principles (Shariah Governance Module, sections 2.3.6, 2.3.10, 2.3.12., 2017). This action follows the *hadīth* reported by Abu Dharr and Muʿādh Ibn Jabal (may Allah be pleased with him) that says ''Fear Allah wherever you are, follow a bad deed with a good deed and it will erase it, and treat people with good morals" (*Jamiʿ At-Tirmidhī, ḥadīth* no.1987). *Fatwas* and rulings issued by the SSB are binding on the bank. This indicates that the members of the SSB are in authority (Shariah Governance Module, section 2.3.1.). In this regard, Allah said ''O you who believe! Obey God and obey the Messenger and those in authority among you'' (Surah an-Nisa`, 4:59).

In pursuant to the principle of *amānah* (trustworthiness), the SSB is not allowed to act for their own interest at the cost of the bank.[5] Thus, in case of a conflict between the member's personal interests and the interest of the bank, members of the SSB should disclose their interest to the SSB and abstain from participating in the *fatwa*/ruling-making process and discussions. This also applies to the interests of their family member (Shariah Governance Module, 2.5.6.).[6] The *Quran* alerts people of following their own desire while judging. In one verse Allah said ''O you who believe! Stand firmly for justice, as witnesses to God, even if against yourselves, your parents, or your relatives. Whether one is rich or poor, God takes care of both. So do not follow your desires, lest you swerve. If you deviate or turn away—then God is Aware of what you do'' (Surah an-Nisā`, 4:135). In another verse, Allah said "O David, We made you a ruler in the land, so judge between the people with justice, and do not follow desire, lest it diverts you from God's path. Those who stray from God's path will have a painful punishment, for having ignored the Day of Account (Surah Sād, 38:26).

The SSB is also bound to keep the bank's information obtained in the course of its duties confidential as this information is considered *amānah* (trust) (Shariah Governance Module, 2.3.30).[7] Moreover, members holding a dissenting opinion on a *fatwa* given by the SSB are not allowed to criticize such a *fatwa* publicly (Shariah Governance Module, 2.3.33). This is to avoid ''*fitnah*'' (discord) and maintain the stability of the rulings. On this subject, the *Quran* warns the Muslims of the serious consequences of quarrels. In this sense, Allah said '' Those in whose hearts is deviation, they follow the unspecific part, seeking (to create) discord'

[4] The word truth in the verse includes the teachings of Islam (Ibn Kathir, 1999, p.245).

[5] See the independence of the SSB and confidentiality obligation and the duty to disclose matters of Shariah non-compliance in sections 2.5, 2.3.30, and 2.3.26, respectively, of the Shariah Governance Module. *Amānah* includes all the rights of Allah and the people that are secretly trusted to the others (Ibn Kathir, 1999, p.339).

[6] According to article 10 of the Resolution No. (20) for the year 2015 in Respect of the Establishment of a Centralized Shariah Supervisory Board, the duty to disclose the conflicting interest also imposed on the members of the CSSB.

[7] The duty to observe confidentiality is also applied to the members of the CSSB according to article 12 (5) of the Resolution No. (20) for the year 2015 in Respect of the Establishment of a Centralized Shariah Supervisory Board. Failure to fulfil this duty will result in termination of membership.

(Surah al-Imrān, 3:7).

To promote the principle of *amānah*, the SSB is forced to report to the shareholders the state of Shariah compliance and declare any event of *Shariah* non-compliance that may have occurred (Shariah Governance Module, section, 2.3.26). This is required as Islam commanded the people to testify as per the verse ''And do not conceal testimony. Whoever conceals it is a sinner at heart. God is aware of what you do''(Surah al-Baqarah, 2:283). Furthermore, at least one member of SSB should attend the annual general meeting to respond to any inquiries from the shareholders (Shariah Governance Module, section 2.3.9). This view finds support from Omer Ibn Al-Khattab (*R.A*) who had been sitting after every prayer to listen to the people during his rule (Ibn Saad, 2001).

Thus, the SSB is accountable to the shareholders who are authorized to dismiss any member of the SSB with the approval of the CBB (Shariah Governance Module, section 2.8.1.). However, the Bahraini Shariah governance system does not specify the liability of the members of the SSB if they violate their duties towards the bank. As a result, the SSB has advisory and supervisory authority over their relevant Islamic bank within the jurisdiction of Bahrain. However, this authority is restricted by the principle of *amānah*.

4.2 The administrative relationship between the shariah board and the community

The SSB involves in different relationships according to the Shariah governance system of Bahrain. It associates with the customers, the centralized Shariah supervisory board (CSSB), the CBB, the AAOIFI, the judiciary, the King, and the National Assembly as follows.

4.3 The administrative relationship between the Shariah board and the centralized Shariah supervisory board

The CSSB is entrusted with legislative power over the individual SSBs. It should approve or reject new banking products or services proposed by Islamic banks (Resolution no. (20) for the year 2015 in Respect of the Establishment of a Centralized Shariah Supervisory Board, article (3) (1)). It should also issue *fatwas*/ rulings on Shariah matters referred by individual SSBs or the CBB (Resolution no. (20) for the year 2015 in Respect of the Establishment of a Centralized Shariah Supervisory Board, article 3 (6)). Decisions, *fatwas,* and rulings issued by the CSSB have superiority over any conflicting SSB *fatwa*/ruling (Shariah Governance Module, sections 2.10.1, 6.1.1, and 2.10.2). The importance of this practice lies in the fact that it manifests the concept of *shūra* which is required in the eyes of Shariah. It also ensures the consistency of the SSBs' rulings which is in line with the view of *Malīkī* and *Shafʿī madhabs* that says what is right in Shariah matters is only one (Al-Zuhaili, 1997).

Based on the discussion above, it seems that the CSSB has the privilege of making prevailed decisions, *fatwas,* and rulings on SSB regarding Shariah matters. However, this authority is with no teeth as the Shariah governance framework does not state a penalty on members of SSB who violates the decisions, *fatwas*, and rulings of the CSSB (Shariah Governance Module; Resolution no. (20) for the year 2015 in Respect of the Establishment of a Centralized Shariah Supervisory Board).

4.4 The administrative relationship between the Shariah board and the customers

Like the duties of the SSB towards the bank, the SSB should ensure that the customer's financial obligations and rights are compatible with Shariah (Shariah Governance Module, section 2.3.28.). It should also make its rulings and *fatwas*, together with their evidence, and any amendments thereof available to the customer through publication and communication channels such as the internet and annual report (Shariah Governance Module, 6.1.2). The Prophet Muḥammad (ﷺ) commands people to convey the teachings of *Qurān* and *Sunnah*. ʿAbdullah Ibnʿ Amr Ibn Al-ʿāṣ (*R.A.*) reported that the Prophet (ﷺ) said, "Convey from me even a verse of the *Quran*; relate traditions from Banu Israel, and there is no restriction on that, but he who deliberately forges a lie against me let him have his abode in the Hell''(*Ṣaḥīḥ al-Bukhārī*, *ḥadīth* no. 3461).

The SSB should also deal with them honestly, fairly, and truthfully as per the principle of *amānah* (Shariah Governance Module, section 2.4.6). Thus, members of SSB should not prevent a customer from transacting or gaining profit merely because he is in competition with a company or partnership of which he is a member. Furthermore, information on their *fatwa*/ rulings should be true. They are also bound to keep customers' information confidential (Shariah Governance Module, 2.3.30.). Members of SSB who breach the confidentiality duty in bad faith will be liable to imprisonment and a fine not exceeding 10,000 Bahraini Dinar

or either penalty (Central Bank of Bahrain and Financial Institutions Act 2006, article 171).[8]
Thus, the authority of the CSSB, and SSB over the customers is similar to their authority over the bank.

4.5 The administrative relationship between the Shariah board, the central bank of Bahrain, and the accounting and auditing organization for Islamic financial institutions

As for the relationship between the SB and the central bank, the latter takes the responsibility of regulating Shariah supervision. In pursuit of this, the CBB established the Shariah governance model. This model states the requirements for the appointment, dismissal, qualification, and meetings of the members of the SSB. It also defines the roles and responsibilities of the members of the SSB. Moreover, it disciplines the relationship between the SSB and other stakeholders. This model has the force of law and, consequently, it is legally binding on the SSB (Shariah Governance Module, section A.1.5; Central Bank and Financial Institutions Act 2006, article 38 (c)).

Additionally, the CBB is authorized to approve or reject the dismissal of the members of SSB but not their appointment (Shariah Governance Module, section 2.8.1). This agrees with the *Mālikīes* and most of the *Shafʿīes* who give the people the option to follow any jurist or jurists even if they are not the best (Al-Zuhaili, 1997). It is also empowered to appoint the members of the CSSB (Shariah Governance Module, section 2.8.1 and Resolution No. (20) for the year 2015 in Respect of the Establishment of a Centralized Shariah Supervisory Board, article 6).

Furthermore, it is empowered to obtain any confidential information from the members of the SSB and the CSSB (Central Bank of Bahrain and Financial Institutions Act, 2006, article 117 (4)). If the member (s) of the SSB refrain from providing the CBB with the requested confidential information in a bad faith, they would be punished by imprisonment and a fine not exceeding twenty thousand (20,000) Bahraini Dinars, or by either penalty (Central Bank of Bahrain and Financial Institutions Act, 2006, article 163 (1)).

The CSSB, in turn, may advise the CBB on Shariah internal and external audits and Shariah review and opine on the rules and regulations on Islamic banking services that are proposed by the CBB (Resolution No. (20) for the year 2015 in Respect of the Establishment of a Centralized Shariah Supervisory Board, article 3 (4) and (6)). The principle of *shūra* underlies this role.

With respect to the relationship between the SSB and the AAOIFI, the former is subject to the standards issued by the AAOIFI for Shariah compliance. These standards include the AAOIFI standards of Shariah banking contracts, payment cards, and *bayʿ ad-din* (sale of debt) (CBB Resolution no.18, 2020; CBB Resolution no.39, 2021; CBB Resolution no.15, 2021). Additionally, it should also abide by the AAOIFI standards for reporting Shariah compliance (Shariah Governance Module, section 2.3.26). However, the CSSB has not adopted the AAOIFI standards for Shariah governance yet. Accordingly, the proactive roles of the CSSB are not integrated into the national Shariah governance. These roles include the role of the CSSB to rectify non-Shariah matters that the market participants think are known or approved by the CSSB, the role of the CSSB to put right a major Shariah non-compliance not being taken care of by the CBB or the government, and the role of the CSSB to prevent many stakeholders from harm (AAOIFI, GSIFI no.8, sections 31 (a) and (c)). Thus, the CBB is a founder of the CSSB and both the CBB and the AAOIFI are regulators for the CSSB and the SSB whereas the CSSB and the SSB are merely consultants for the CBB and the government.

4.6 The administrative relationship between the Shariah board and the judiciary

Since the Bahraini constitution states that no authority shall prevail over the decision of a judge, the SSB *fatwas*/ rulings should not contradict it (Constitution of the Kingdom of Bahrain 2002, article 104 (b)). To ensure that *fatwas*/ rulings of the SSB and decisions of the courts are congruous with each other, the legislature obliged the Bahraini courts, as is the case with the SSB, to apply the standards ordered by the CBB including the AAOIFI standards for transactions performed by Islamic banks (Central Bank of Bahrain and Financial Institutions Act 2006, amendment no. 14, 2020, article 3).[9]

Furthermore, as an exception to the confidentiality obligation mentioned above, the SSB should provide the court with any confidential information or document upon its request in the execution of the law (Bahraini Code of Civil Procedure 1996 articles 113 and 114; GSIFI no.8, section 43). Although the supreme power is conferred on the courts by the constitution, the courts may seek the advice of the CSSB on Shariah matters

[8] According to article 116 of the same law, the word confidential information refers to any information on the private affairs of any of the bank's customers. Thus, it does not include confidential information on the private affairs of the bank.

[9] The SSB are also bound to apply the AAOIFI standards according to section 2.1.2. of the Shariah Governance Module.

(Resolution No. (20) for the year 2015 in Respect of the Establishment of a Centralized Shariah Supervisory Board, article 3 (5)). From a legal perspective, the opinion given by the CSSB is deemed as expert evidence because they are specialized in these matters (Bahraini Law of Evidence in Civil and Commercial Matters 1996, article 132). However, referring Shariah matters to the CSSB depends on the discretion of the court and the advice of the CSSB is not compulsory for the courts. Consequently, the judicial authority over individuals and corporations is superior to the supervisory and advisory authorities of the CSSB and SSB.

4.7 The administrative relationship between the Shariah board, the King, and the National Assembly

Primarily, the King and the National Assembly are the legislatures of the country (Constitution of the Kingdom of Bahrain 2002, article 32 (b)). They make laws governing the duties of the SSB and the CSSB. However, these laws do not address them specifically but the entire employees of the banks. For example, they impose on these employees, the duty to observe confidential information, the duty to disclose any information and provide any document, be it confidential or not, to the CBB or the court upon their request (Central Bank of Bahrain and Financial Institutions Law, 2006, article 119). Thus, these laws do not cover the whole subject of Shariah governance. Rather, according to the Central Bank of Bahrain and the Financial Institutions 2006, the National Assembly delegated their legislative powers on the matters of Shariah governance to the governor or the board of the CBB as the case may be (The Central Bank of Bahrain and Financial Institutions Law, 2006, article 37 (b) and 38 (a)).

The laws and directives shall prevail over the rulings/*fatwas* of the SSB and the CSSB according to the principle of the supremacy of law.[10] That being said, the SSB and the CSSB should abide by the AAOIFI standards of transactions because these standards are incorporated into the law of Bahrain (CBB Resolution no.18, 2020, article 1). The CSSB, on the other hand, may provide Shariah consultation to the King and the National Assembly with regards to Shariah matters of Islamic financial services (Resolution No. (20) for the year 2015 in Respect of the Establishment of a Centralized Shariah Supervisory Board, article 3 (5)). As a result, the legislature lays down the general obligations of the SSB and the CSSB and the references on which their rulings/ *fatwas* are based.

5. Conclusion and Recommendation

It can be concluded from the discussion above that the nature of the relationships between the SB and the stakeholders in ICG varies with the type of stakeholder. The SSB- bank, and SSB- CSSB relationships, are based on *wilāyah*.[11] Both the SSB and the CSSB are *walī* rather than Shariah advisors (*muftī*) or agents because their rulings/*fatwas* are obligatory. The SSB is a *walī* (ruler) for the bank and the CSSB is a *walī* for the SSB. However, the former is *wālī khāṣ fī aʿmāl khāṣah* (private ruler with a specific mandate) because it works only for the relevant bank, while the latter is *wālī ʿām fī aʿmāl khāṣah* (public ruler with specific mandate) because it works for the whole Islamic banking industry in Bahrain. In addition, the former deals only with Shariah matters, while the latter deals with both *Shariah* and administrative matters. As for the relationship between the SB and the customers, it may take the form of proactive *mufti* (religious consultant) - *mustaftī* (enquirer of Shariah matters) or fiduciary–beneficiary relationships.

When it comes to the relationship between the judiciary and the SB, it is similar to the relationship between SSB and CSSB. However, the judicial authority is higher than both SSB and CSSB. The relationship between the SB and the judiciary may also turn into a consultee-consultant relationship.

As for the relationship between the SB, the BDCB, and the AAOIFI, it is also based on *wilāyah*. However, this *wilāyah* is *wilāyah ʿāmmah fī aʿmāl ʿammah* (public authority with a general mandate) by which the BDCB, and the AAOIFI upon authorization of the former, regulate all the administrative and Shariah matters of the SB.

With respect to the relationship between the SB, the King, and the National Assembly, it is premised on *imāmah* (the guardianship of religious matters and the Islamic society). The King and the National Assembly

[10] Article 33 (b) of the Constitution of the Kingdom of Bahrain, 2002 makes reference to the supremacy of the constitution and law which means that the government has no arbitrary authority over the citizen and equal subjection of all (including officials) to the ordinary law administered by the courts (Martin, 2013).

[11] *Wilāyyah* refers to an authority to do something. Holder of the *wilāyyah* is called *walī* (Al-Khafif, 1996). For classifications of *wilāyah* see (Al-Mawardi, 1960). According to the verse ''God instructs you to give back things entrusted to you to their owners. And when you judge between people, do justice. God's instructions to you are excellent. God is All-Hearing, All-Seeing'' (Surah an-Nisaʾ 4:58) rulers are under fiduciary duty towards citizens (Al-Tabari, 2001, p.173).

possess the ultimate legislative and executive powers (*ʿrāsat ad-dīn wa siyāsat al-duniyah*) over all matters of the SB (Al-Mawardi, 1960, p.3). Although the King and the National Assembly set down only the basic duties of the members of the SB, they authorize the BDCB which in turn authorizes the AAOIFI to develop comprehensive Shariah governance and Shariah compliance models.

To improve the relationship between the SB and both the bank and the customers, the Bahraini Shariah governance framework should bind the members of the SSB to act with reasonable care and skill based on *amānah*. Moreover, it shall impose a penalty on a member who acts in favor of himself and not only who breaches the confidentiality obligation towards the bank as it did with the customers. Additionally, it should punish the members who negligently give permission to a new product without the approval of the CSSB. Furthermore, it should grant the customer the right to appeal the rulings/ *fatwas* of the SSB to the CSSB.

The CSSB should also intervene on its own initiative as prescribed by the AAIOFI governance standard for central SB for the following reasons:

(i) to put right major Shariah non-compliance not being taken care of by the CBB.

(ii) to rectify non-Shariah matters in the market that are thought to be known or approved by the CSSB. In support of the two previous duties, the *Quran* orders Muslims to reveal the truth. In this regard, Allah said "And do not mix truth with falsehood, and do not conceal the truth while you know (Surah al-Baqarah, 2:42). The Prophet Muḥammad (ﷺ) also says ''whoever amongst you sees an evil, must change it with his hand; if he is unable to do so, then with his tongue; and if he is unable to do so, then with his heart, and that is the weakest form of faith (*Ṣaḥīḥ Muslim*, *ḥadīth* no. 148).

(iii) to protect the interest of the larger stakeholders. Here, Ibn Abbs narrated that the Prophet Muḥāmmad (ﷺ) said ''no harm and no reciprocated harm'' (*Sunan Ibn Majah*, *ḥadīth* no. 2341). The above-mentioned self-initiative roles are consistent with Al-Mawardī's point of view who believes that *wālī,* in this case, the CSSB, should undertake its function by itself and should not completely depend on its representatives (Al-Mawardi, 1960).

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Islamic Social Finance and Sustainable Development Goals: Issues and Challenges

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Abstract

Islamic finance is an important driver to support the implementation of sustainable development goals. Theoretically, the core principle of Islamic finance aligns with the sustainable development goals. Moreover, the application of Islamic social finance instruments especially zakat, waqf, and sadaqah can be managed efficiently and effectively to support the specific sustainable development goals. However, there are many issues and challenges in the understanding and application of Islamic social finance, and some perceptions of the sustainable development goals agenda from the Islamic perspective. This study firstly discussed the concept of Islamic social finance and discusses each Islamic social finance instrument. Then, a qualitative research method based on Focus Group Discussion was employed to investigate the issues and challenges of Islamic social finance to support the sustainable development goals. The findings include an investigation and discussion on the important themes which are on: (1) the definition of Islamic social finance; (2) the relation of *Maqasid* Shariah and sustainable development goals in Islamic social finance; (3) The application of Islamic social finance in eliminating poverty; and (4) the issues and concern in the utilization of Islamic social finance to improve socio-economic well-being. The study suggests a more focused definition of Islamic social finance as a subset of Islamic finance; and the findings may enhance the policy implication, especially on the application of Islamic social finance instruments due to their unique characteristics as compared to the widely use Islamic financial instruments.

Keywords: *Islamic social finance, Sustainable Development Goals, Poverty, Zakat, Waqf, Sadaqah*

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1. Introduction

Islamic finance has received a lot of attention in the academic area. The researchers' concentrations are mainly on banking issues from theoretical and practical aspects (Kuanova et al., 2021). However, Islamic economics' other elements, especially Islamic social finance, received less attention (Belouafi and Belabes, 2016). Many past researchers have provided the definitions of social finance. A social finance ecosystem is composed of four main parties which are social welfare initiators, social finance providers, social ecosystem coordinators and beneficiaries (Tahiri Jouti, 2019). Doulatramani and Raje (2020) expand on the general idea of social finance as allocating capital and financing that generates economic gain together with social impact and environmental protection. Thus, any proceeds generated from the social financing and investment are used to address major socio-economic problems such as healthcare, education, house ownership and others. They further argue that social finance somehow is not only a philanthropic or charitable activity but also acts as a step forward toward behavioural finance instead of the existing practice of traditional finance. In addition, Rexhepi (2016) further argues that the sole dependence of the charity fund from the donor cannot afford to address the issues of poverty globally. Thus, social finance may act as one of the effective economic mechanisms to solve this issue to meet one of the sustainable development goals (SDGs) which is to end

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poverty in all its forms everywhere (i.e., SDG1).

Besides, social entrepreneurship is also important as it reflects the combination of the business and the economic contract design which create the social values. Moreover, in implementing the social goals, it considers different participating agents such as the government, non-profit organisation, and private investors (Rexhepi, 2016). Since the economic crisis of 2008, many organisations and institutions have raised high interest and concern for the social orientation in their operations and business, especially the banking and financial institutions which may act as the intermediaries in delivering social impact. Accordingly, banking and financial institutions play an important role in extending access to financial services as to alleviate the issues of poverty. Hence, the financial products ought to be socially responsible to sustain the social, environmental, and economic well-being. There are common tools of the conventional social finance includes: (1) micro-financing; (2) socially responsible investing; (3) social impact investing; (4) social impact bond; (5) environmental, social and governance (ESG) bond or investing; and (6) ethical investing (Mitic and Rakic, 2017).

In contrast with the nature of the financial institutions which are profit-oriented, there are some encounters facing the conventional financial institutions in fully utilising their social financial tools. Rexhepi (2016) points out there are three (3) arguments towards social finance of which: (1) social finance should not be seen as a substitute but rather as a complement to the government funding; (2) the social finance approach should not be seen as identical to other private social services; and (3) social finance faces similar challenges as other enterprises with no guarantee of success.

Despite the wide discussion on the definition and operation of social finance in general, studies specifically on the background and landscape of Islamic social finance are still very few. Tahiri Jouti (2019) presents a conceptual framework based on case studies and literature review describing the necessary steps to build sustainable social finance ecosystem and found that the impact of building social finance ecosystem can tackle social issues. Accordingly, an Islamic social finance ecosystem has its specific instruments in terms of both funding and investment which are in line with Shariah principles. However, Islamic social finance has not been defined well and currently, there is no specific definition of Islamic social finance. This may be due to the absence of a clear distinction between Islamic finance and Islamic social finance terms. However, Islamic social finance is currently receiving a lot of attention, especially during the Covid-19 pandemic where Islamic social finance instruments have supported the economic well-being of the people, especially the poor. Hence, the objectives of this paper are: (1) to discuss the definition of Islamic social finance; (2) to examine the interrelation among Islamic social finance, *Maqasid* Shariah, and sustainable development goals; and (3) to discuss the issues and challenges for Islamic social finance in eradicating poverty i.e., SDG1.

The next section discusses the selected Islamic social finance instruments which are zakat, sadaqah, waqf and Islamic microfinance. Also, the issues and challenges on SDGs and the impact of Islamic social finance and SDG1 are examined further.

2. Literature Review

The focal point of *Maqasid* Shariah and SDGs is sustainable and inclusive development (Abdullah, 2018). Islamic social finance may fill the gaps and address the challenges facing the society in addressing some of the recent socio-economic problems plaguing the world economy, such as high rate of poverty, inequality, deficiency, and environmental destruction (Odeduntan, 2016). The Value-Based Intermediation (VBI) strategy document of Bank Negara Malaysia is essential to Islamic financial institutions from the point of view of Islamic financial institutions. The document highlighted that VBI aims to deliver the intended outcomes of Shariah through practices, conducts and offerings that generate positive and sustainable impact to the economy, community, and environment, consistent with the shareholders' sustainable returns and long-term interests (BNM, 2017). Islamic social finance may have a similar approach to social finance, targeting to have a social, environmental, and economic impact. Islamic social finance is akin to the conventional social finance, but it is subjected to the established principles of Shariah (Zain and Ali, 2017). However, since the principle of Islamic social finance is value-oriented, Islamic social finance is well-guided by the principles of Shariah that emphasises behavioural ethics and humanity. Thus, Islamic social finance through its various instruments may provide a wide opportunity in delivering the social and environmental impact. Among the Islamic social instruments that are widely adopted are zakat, sadaqah (donation), waqf, *qard hassan* (benevolent loan) and Islamic microfinance.

Zakat and sadaqah are social instruments in Islam to alleviate poverty. Zakat is one of the pillars of Islam. It is a charitable pay-out to re-distribute the wealth among the rich to the poor. Zakat is obligatory for all the Muslims who fulfill certain requirements. Zakat plays an important role as part of the Islamic socio-economic system and is said to be one of the financial tools to alleviate poverty apart from micro financing and micro credit (Razin and Rosman, 2021). Zakat funds will then be distributed to the eight (8) categories of zakat recipients (i.e., asnaf), as mentioned by Allah in Quran (9:60);

"Zakat expenditures are only for the poor and for the needy and for those employed to collect [zakat] and for bringing hearts together [for Islam] and for freeing captives [or slaves] and for those in debt and for the cause of Allah and for the [stranded] traveller - an obligation [imposed] by Allah. And Allah is Knowing and Wise."

In contrast, sadaqah is a voluntary charitable act towards others. Both instruments may address many of the society's problems for wealth circulation and sustain the balance in the economy. As such, the proceeds generated are fully utilised in assisting the less privileged people such as the poor, widow, and orphan whether in a one-off assistance or by providing resources for their economic activities. Also, the fund can be used to support community-based activities such as supporting education, providing health care, assisting the debtors by offsetting their debts and many other difficulties prevailing in the community (Odeduntan, 2016). Furthermore, Ilahi and Akhbar (2022) state that zakat plays a crucial role in the recirculation of the stagnant wealth of the rich, enabling it to be injected back into the economy to the poor, not only allowing the poor to survive but also ensuring that the most are made from that money.

Another common Islamic social finance instrument is waqf. Waqf means devoting something for the cause of Allah (Md Kamdari et al., 2017). Waqf which is a charitable endowment is one of the important financial instruments in preventing poverty among the community and generating economic well-being of people (Khairi et al., 2014). Looking into its potential benefit to the socio-economic system, waqf can assemble additional resources to address the socio-economic problem in various sectors of education, healthcare and in the creation of employment (Odendutan, 2016). Moreover, waqf is more flexible than zakat and hence can be optimized in any productive and strategic sector, for instance, agriculture, tourism, and food security (Listina and Mutmainah, 2022).

Another Islamic social finance instrument is *qard* (loan). *Qard* refers to a contract of money lending by a lender to a borrower where the latter is bound to repay an equivalent replacement amount to the lender (BNM, 2018). While *qard hassan* is the act of granting the lender the debt to the debtor with no interest needed to be paid back from the money borrowed (Sadr, 2015). Generally, the concept of the *qard hassan* is grounded on the principle of Islam which is based on brotherhood and cooperation. The provision of the *qard hassan* is to encourage the rich people to help the needy people and to establish a positive relationship among them. Thus, *qard* is an instrument to achieve the long-term goals of 1) circulating the wealth among the community, 2) eradicating all the discrimination that existed in the community, 3) encouragement of the good deeds, 4) creating the employment by using the loan to do some business or ventures and 5) reinforcing the national economy (Odeduntan, 2016).

Finally, Islamic microfinance is among the common Islamic social finance instruments that have been widely adopted by financial institutions. Becoming the major answer to socio-economic problems, microfinance may provide short term financing with some flexibility as compared to common financing provided by financial institutions to support small and medium enterprises (SMEs). Islamic microfinancing may become an alternative source for the SMEs to obtain financing from the financial institutions. In addition, microfinance has become an effective tool to alleviate poverty by improving financial inclusion, especially for SMEs.

To utilize the Islamic social finance instruments, there is a need for coordination and planning to address the socio-economic problems in the respective countries. For example, collaboration among non-government organisations and private institutions can be made to support the sustainable development goals agenda. Tahiri Jouti (2019) in his research paper assesses the integrated approach to attain sustainability in the Islamic social finance ecosystem. By using the qualitative study, the conceptual framework on creating and maintaining sustainable Islamic social finance ecosystem was built based on the past case studies and literature reviews.

The finding shows the positive relationship between sustainable Islamic social finance ecosystem and the tackling of both socio-economic and environmental issues. Accordingly, the author suggests that there is a need of involvement of different parties ranging from the government to businesses with integrated initiatives to provide Shariah-compliant funding in achieving the sustainable development goals.

The literature shows that there are gaps and issues to be addressed in relation to Islamic social finance especially on its application to support sustainable development goals. Among the pertinent issues include the definition of Islamic social finance, the interrelation between *Maqasid* Shariah and Sustainable Development Goals, and the application of Islamic social finance instruments to improve the poor and asnaf (zakat recipients) well-being. The next section briefly explains the methods adopted to achieve the research objectives.

3. Research Method and Respondents

The study adopted a qualitative research method. The qualitative method attempts to dig up more comprehensive and extensive information from various sources. Moreover, qualitative studies are flexible, and they attempt at explaining and analysing patterns. This approach allows a vast exploration of the theory and practice of Islamic social finance as well as towards its achievement of the SDGs. The data collection approach adopted for this study is a Focus Group Discussion which contains a similar concept of *syura* (discussion) (Mokhtar and Mohd Ismath, 2020). According to Tiraieyari et al. (2017), qualitative research is suitable for gathering information that cannot be quantified, such as the experiences of participants. Ten interviewed participants were selected for this research. All of them are either academicians or practitioners, and they were chosen because of their involvement in Islamic social finance. The participants were experienced practitioners in this field for more than 10 years and the longest is 33 years. This allows the researchers to communicate rich knowledge about the topic of this study. In relation to the number of participants selected, Dworkin (2012) states that there are an extremely large number of articles suggest anywhere from 5 to 50 participants as adequate. In addition, some experts in qualitative research avoid of "how many" interviews "are enough", when there is indeed variability in what is suggested as a minimum (Dworkin, 2012). This approach is considered apt as the method entails gathering experts on the subject matter to share their ideas and opinions towards a better understanding of Islamic social finance as practiced in our community.

The main questions for the Focus Group Discussion include the following:

1. What is the definition of Islamic social finance?
2. What are the differences between Islamic finance and Islamic social finance?
3. Are there any contradictory elements between sustainable development goals and *Maqasid* Shariah?
4. What are the differences between value-based intermediation and social banking institutions?
5. Can Islamic social finance and value-based intermediations improve B40 community and asnaf well-being?
6. How to prioritise between asnaf and B40 community?

Details of the respondents of the Focus Group Discussion are in Table 1 as follows:

Table 1: Details of respondents

Respondent	Academician / Industry Expert	Area of expertise	Working experiences (years)
Respondent 1	Academician	Islamic Economics and Finance	18 years
Respondent 2	Industry Expert	Islamic banking, takaful and Shariah governance	11 years
Respondent 3	Industry Expert	Financial Literacy	18 years
Respondent 4	Academician	Shariah and Islamic Banking and Finance	23 years
Respondent 5	Industry Expert	Microfinance, Islamic Social Finance and Financial Inclusion	16 years

Respondent 6	Industry Expert	Treasury, Islamic Banking, Shariah Review and Shariah Research	11 years
Respondent 7	Industry Expert	Islamic Capital Market, Islamic Banking and Finance	13 years
Respondent 8	Academician	Islamic Financial Planning and Wealth Management	28 years
Respondent 9	Academician	Islamic Banking Product and Operation	33 years
Respondent 10	Industry Expert	Islamic (Waqf and Zakat) Socio Economics or Social Finance, Islamic Political Economy and Public Administration	25 years

The next section explains the main findings from the data analysis of the Focus Group Discussion. The qualitative analysis addresses the issues found and group them to several themes accordingly.

4. Findings and Discussion

This section summarises the findings based on the questions that were asked and discussed during the Focus Group Discussion. The findings have been categorised into the four (4) important themes as follows:

1. Definition, background, and landscape of Islamic social finance.
2. Interrelation among Islamic social finance, *Maqasid* Shariah and Sustainable Development Goals.
3. Application of Islamic social finance to help the B40 group in eliminating poverty and achieving SDG1; and
4. Issues and concerns in utilising Islamic social finance tools in improving the socio-economic well-being of B40 in Malaysia.

Theme 1: Definition, background, and landscape of Islamic social finance

The idea was to ascertain the expert's view on the 'Islamic social finance' and its function. Indeed, all respondents posited that the ultimate objective of Islamic social finance is predominantly philanthropy-based and not-for-profit for the benefit of the poor, needy and the destitute in the society. Islamic social finance facilitates a fair and just financial system, that is to protect the poor and needy by reducing the income gaps and provide sustainable financial support for them. One of the respondents remarked the following:

> *"So, basically, it is an Islamic financial instrument that complies with the Shariah principle and then it is designed basically to provide financial access to all that include underserved and poor. It is based on the idea of "كَيْ لَا يَكُونَ دُولَةً بَيْنَ الْأَغْنِيَاءِ مِنكُمْ"", So that the wealth is not distributed only among the wealthy people. So, the end result of this Islamic social finance is basically financial inclusion. And I can say that Islamic social finance is part of the instrument to support financial inclusion." (Respondent 2).*

However, one of the respondents raised the need to lay out the landscape and definitions of Islamic social finance while expanding the scope of Islamic social finance from Islamic finance to be beyond just zakat, waqf, sadaqah and microfinance. Respondent 1 remarks the following:

> *"…. I think the missing part is more on the background of social finance because the focus has been more on banking and finance. Apart from the words of social finance is mentioned, for example, research on zakat, waqf, and other areas has been mentioned repeatedly with more recent the things like Socially Responsible Investing (SRI)." (Respondent 1).*

Regarding the operational definitions of Islamic social finance, most of the respondents believe that none of the literature available can provide a strong and comprehensive definition, as most of them are limited the specific kinds of tools. Some of the literature on Islamic social finance are confined only to waqf, sadaqah and zakat. Some even extend into microfinance. They also include even *qard* or other charitable contracts such as *tabaru'* (donation). One of the respondents pointed out that:

> *"From the Shariah, we have those three components: fiqh, Ibadah and muamalah. So, Islamic finance falls under the muamalah matter. And basically, Islamic finance can be further divided into two types, into two components. One is Islamic commercial finance. The second one is Islamic social finance. In Arabic term, we used to call the Tijari aspect that refer to Islamic commercial finance, and then the ijtimai' aspect refers to Islamic social finance. But currently, the term Islamic finance is confined by meaning that include by the practitioners and academician to only cover Islamic commercial finance, to the exclusion of Islamic social finance." (Respondent 2).*

Respondent 5 quoted further that the potential of Islamic social finance should be beyond normal Islamic financial instruments:

> *"…. the definition of social finance is something challenging because we cannot find the standardized definition of social finance or even Islamic social finance. If we form people to fund Islamic social finance, it only can fund to the key instruments, which is waqf, zakat, and sadaqah. Why? Actually, when we further explore in terms of the potential of the Islamic social finance, it's actually more than that. It's beyond than these 3 instruments, and actually from the banking perspectives, for example, we can unlock more potential of the normal Islamic financial instrument." (Respondent 5).*

It is important to note that the concept of zakat, infaq, sadaqah and waqf which form the core fundamentals of Islamic social finance can be traced to over 1400 years ago, and that firmly rooted in the Quran and the teachings of Prophet Muhammad (ﷺ). This shows that the principle of redistribution of wealth for the benefit of the poor and needy in society is a huge part of the Islamic economic system and the Islamic financial system. Most of the respondents were in consensus that both Islamic finance and Islamic social finance are not different from the more recent concept of social finance and sustainable finance, as the intended outcome of all these concepts are towards achieving a better quality of life for the present generation and to preserve the environment and system for the future generations. One of the respondents pointed out that:

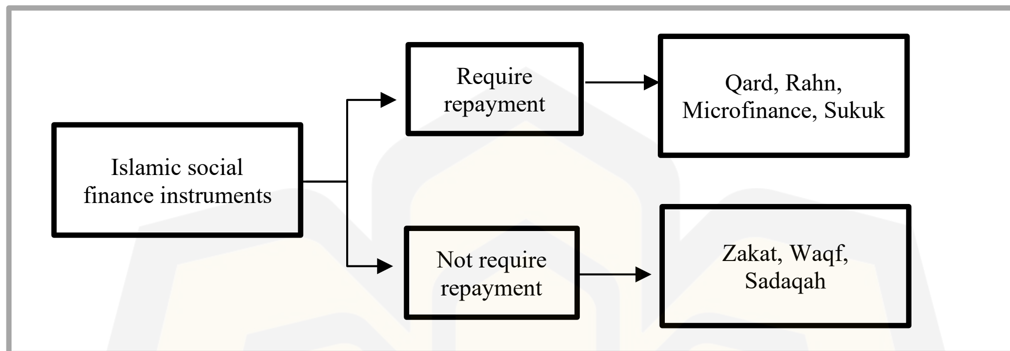
> *"That's why we cannot say that we must separate between Islamic finance and social finance because it embedded in the Islamic finance itself." (Respondent 4).*

However, the fact that the principles of Islamic social finance need to be rediscovered in very recent times shows that the Islamic financial sectors have perhaps unintentionally excluded the Islamic social and philanthropy-driven segments of the Islamic economy in pursuit of profit maximisation and shareholder-centric goals. That made one of the respondents questioned the framing of Islamic social finance. He questioned the following *"So, what makes Islamic social finance different from Islamic finance?"* He further continued, *"I think we failed to understand that basically Islamic social finance is an integral part of Islamic finance, which is in the social (Ijtimai') sector."* According to him, even if the Islamic financial sector is to serve society by nature, social finance itself should have a specific definition, that is different from Islamic commercial finance (*tijari)* sectors. He suggested that the instruments of Islamic social finance should be classified into two (as indicated in Figure 1); the first part, instruments that require repayment and not for profit-making or commercial motives such as *qard* and *rahn* (pledge), and the second part is basically an instrument offered to the people, especially the low-income segment which does not require repayments such as zakat, waqf and sadaqah. Clearly, these two components of the Islamic financial industry must converge to achieve greater social and economic prosperity towards achieving sustainable development and growth.

In summary, all respondents have attempted to shed light on the various concepts of Islamic finance and Islamic social finance. Obviously, it is just a drop in the ocean of information and knowledge regarding this vast subject matter. Moving forward, in highlighting the landscape of Islamic social finance which may help

in the definition, there are three aspects that can be questioned. First, 'to what extent the 'charity' is in Islamic social finance?'. Secondly, 'how much profit are you able to compromise for the sake of the society?', and the third aspect which is the most important in Islamic social finance is 'what are the targeted areas that will give bigger social impacts?' Figure 1 illustrates the types of Islamic social finance instruments.

Figure 1: Types of Islamic social finance instruments



Theme 2: Relation of Islamic social finance with SDG and Maqasid Shariah

In general, most of the respondents were in consensus that Islamic social finance pursues the same direction as the recent SDGs that is to help the society. However, some of the respondents posited that the introduction of SDGs and value-based intermediation (VBI) have posed a challenge to the financial services sector. This is because financing the SDGs is a complex task as it requires an unprecedented coordination between private institutions and the public sector, and a reform of global financial regulations and consequential commitment from all financial institutions. One of the respondents posited as follows:

> *Now coming to SDG, I think when all so-called world the countries and leaders, they meant to discuss SDG, one of the countries has say, the implementation will be 'localized'. So that means, whatever we put is not necessarily applicable to Malaysia, or applicable to Sudan. (Respondent 1).*

The ideas behind SDGs are to highlight a need for consideration for people, planet, and purpose that can be considered in the context of Islamic finance. With the step-change proact by Bank Negara Malaysia (BNM) towards Islamic financial institutions to adopt SDGs and VBI. Regarding the SDGs implementations, all the institutions have tried to understand and define their role in delivering the SDGs whilst making a commercial return. Although momentum has been built in the conventional finance sector, there is still a lack of knowledge and understanding of the adoption of the SDGs among Islamic financial institutions. It would appear to be a natural alignment in many areas with the concept of Islamic social finance and *Maqasid* Shariah. On the other hand, although BNM recognises the ideas of VBIs, some respondents commented that it would need more resources and time for adoption. One of the respondents posited as follows:

> *"Why do they need to embrace VBI when all of these while they have been practising is actually VBI? So, some banks have said that embracing VBI is wasting their time. They are wasting their time doing so many things Bank Negara required to prepare a report. Whereas we should focus on competing with the conventional bank." (Respondent 4).*

Islamic social finance, which aims to achieve global economic, social, governance and environmental goals, is embedded in SDGs and VBIs. The respondents were in consensus that it is time to move from words to action and start focusing on practical solutions to unlock the achievement of the SDGs in the Islamic social finance.

One of the respondents pointed out the following issues:

> *"And why don't we think about how the product itself should provide to the variant of people. For example, in Islamic Home Financing, it should be really affordable enough and different from how the conventional banking doing their finance. Of course, it's not easy. I also previously was from the bank, so I understand the risk management perspective and all that. for example, the act of the bank to option house, which is criticize by some of Shariah scholars that we should be more 'human' in dealing with people that has problematic situation. Yeah, we should do that as well. And in regards of whether the social finance can improve the situation, yea, definitely. If we able to look and refine it further, it can definitely help and improve the wellbeing of b40 and asnaf together" (Respondent 8).*

However, some of the respondents posited that SDGs have potential implication as most financial institutions are witnessing an unprecedented increase in the prominence of this agenda. It is even more critical when the SDGs need to be aligned with the *Maqasid* Shariah. Respondent 1 highlighted the following:

> *"Using SDG to achieve Maqasid, I think we have to be very careful. Because these 17 variables (i.e. SDG goals) origin from Western, which perhaps to some extend neglect the Shariah part. For example, on the goal number 5, gender equality. This variable is inconsistent with the Maqasid" (Respondent 2).*

In general, the respondents believed that most of the 17 goals of SDGs could fit under *Maqasid* Shariah with certain conditions. One of the respondents posited that *Maqasid* Shariah is more extensive because it stands before SDGs, and in fact, it has been unchanging. While the concept of Islamic social finance and *Maqasid* Shariah are broad and already existed long ago, the idea of development is constantly changing. SDGs can sometimes be confused in its meaning of 'sustainable'. In this concept, sustainability often appears under various thematic such as Corporate Social Responsibility (CSR), Responsible and Sustainable Finance and Investing, Environmental, Social and Governance (ESG) screening, and Green or Socially Responsible Investing (SRI) themes.

On the other hand, *Maqasid* Shariah will remain forever. That is why the alignment of both concepts needs a thorough revision. A respondent suggested the following:

"I think the relationship here is how do we map this under the five pillars of Maqasid and my suggestion is that those mapping should not be linear in the sense that we don't just map one to one, or two to one. Because they can be a kind of enclosed, when we map, we should look at those multiple dimensions. For example, the concept of property in Maqasid Shariah could relate to wealth, to nafs, and to religion in conjunction with the hadith from Prophet ﷺ, so those mappings are very important in terms of SDG." (Respondent 1)

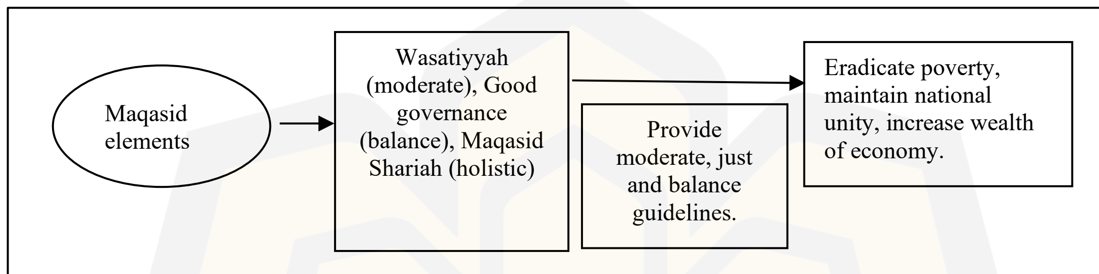
Focusing on Islamic social finance, all respondents agreed to look in-depth into the reality of Islamic social finance and its crucial role in preserving *Maqasid* Shariah. This is because such analysis could help discover the relationship between Islamic social finance and the definitions of *Maqasid* Shariah. One of the respondents believes that the definitions of *Maqasid* Shariah itself justified the concept of sustainability as the focus of *Maqasid* Shariah. He remarked the following:

> *"And even Maqasid, by definition itself is (meaning) sustainable because they use the word Hifz (which mean 'preserve). Hifz In Arabic has two components. That means 'you preserve it so that it doesn't get back' and 'then you sustain its existent'. (This is) based of view on the meaning of Maqasid. And I agree with what the scholar said. It does not only look at Maqasid dunya, but also Maqasid in akhirah. I agree, the missing of (components of Maqasid) that I mentioned earlier in SDG is that part". (Respondent 1).*

Accordingly, the respondent also suggested that to align the means of *Maqasid* Shariah with social enterprise, the scopes of *Maqasid* Shariah should be widened. He stressed the importance of identifying the means and areas in *Maqasid* Shariah into social enterprise. This is because the traditional framework of

Maqasid is perceived to be inflexible in the hybrid model of corporate entities in social entrepreneurship that is more profit oriented. That is only through the achievement of profits they could serve the society. Nowadays, this could be perceived in the Islamic banks. The elements of *Maqasid* Shariah can be measured to certain dimensions suggested by the respondent: good governance, *Maqasid* Shariah and *Wasatiyyah* (moderation) Theoretically, good governance with *Wasatiyyah* and *Maqasid* Shariah approaches allows all the social enterprises to perform better. This could be formulated based on Figure 2 below, on *Maqasid* elements that may eradicate poverty, maintain national unity, and increase wealth of economy.

Figure 2: *Maqasid* elements in eradicating poverty, maintaining national unity, and increasing economic wealth



In summary, the *Maqasid* Shariah, which underpins Islamic finance, makes the sector capable of leading in promoting the SDGs to achieve global economic and social justice. Nowadays, the success of implementing sustainable finance that is in line with the SDGs, VBI and *Maqasid* Shariah hinges deeply on the adoption of technology-based solutions. This will enable the allocation of financial resources to the high-impact economic segments so that the nations can achieve financial inclusions far more efficiently and effectively.

Theme 3: Application of Islamic social finance to help the B40 group in eliminating poverty and achieving SDG1

In general, most of the respondents agree that Islamic social finance is intended for social benefit and is done through various approaches permissible by the Islamic law. Among the main methods in Islamic social finance are philanthropic tools such as zakat, waqf, sadaqah, microfinance and sukuk.

According to the respondents, innovative investments in humanity through Islamic social finance tools will lead to long-term social improvements, resilience, and adaptive capacity-building for society at risk. Such investments will inspire communities to recover more significantly from financial shocks and facilitate social and economic inclusion within their populations.

However, some respondents remarked that Islamic banking practices should adhere to the true nature of Islamic social finance that is intended for philanthropic driven and not for profit maximization. When utilizing philanthropic tools such as microfinance and *rahn* that require repayment, the focus should be on how it will help the people, especially B40 communities and not on profit-making, especially when some fees are posed in the financing. For example, the *wakalah* (agency) fees should be low. Respondent 7 mentioned some of the challenges faced by the B40 in taking up Islamic financing whereby the charges are high. This may be due to the general expectation of people who expect Islamic banks that operate Islamically should offer much lower rate that their conventional counterpart. Th respondent did suggest that Islamic banks could lower the charges.

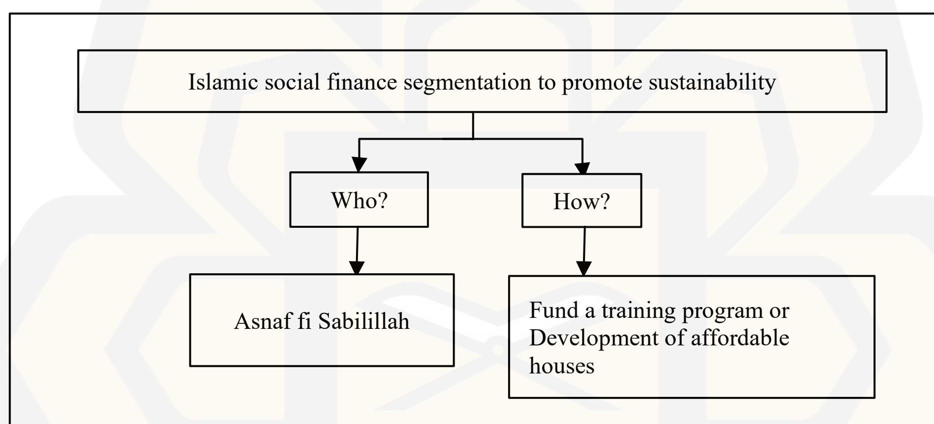
Some respondents also posited that it is also important to investigate segmentation in financing that would be more beneficial for B40 groups. While the role of Islamic social finance tools is to provide financial assistance to targeted groups with no expectation of profit from the transactions. Rather than focusing on a 'one-off' manner, sustainability could be achieved by looking into more significant perspectives that would benefit them in the long term. For example, Islamic CSR can be channelled to fund vocational training such as training the beneficiaries to run a small business or to support the development of affordable houses. Respondent 8 explained:

> *"If we cater on a house (development for them), rather than we go to CSR to distributing foods for the asnaf, it means we only able to cater for the short-term period. We also can give them monthly income,*

> *for example Rm300/month, it surely can resolve any hunger and any poverty issues. If we try to look into building a house (using the CSR fund), then we can give them at least a shelter. So maybe we can propose at our end as a banking institution, that is rather than focus only for the small CSR, but also for the long-term impact for B40 and asnaf as well". (Respondent 6)*

Most of the respondents unanimously said that the assistance in the form of zakat should be given according to the fixed beneficiaries. However, a respondent highlighted that although the beneficiaries of zakat in Shariah are fixed, the application could be different. Nowadays, there are uncontrollable issues whereby many of them are still reluctant to improve their lives towards a better quality of life despite various efforts taken such as capital assistance. Therefore, the priority should be on who among the asnaf would benefit the society more. The respondent suggests that the fund will be more beneficial for the long-term if it is distributed for the asnaf *fi sabilillah* (in the cause of Allah). In summary, the segmentation in Islamic social finance to promote sustainability can be postulated in Figure 3.

Figure 3: Islamic social finance segmentation to promote sustainability



Theme 4: Issues and concerns in utilising Islamic social finance tools in improving the socio-economic well-being of B40 in Malaysia

In general, the respondents agree that the failure of Islamic social finance tools in eradicating poverty among the B40 group is not because of the instruments themselves. Among others, it can be from internal factors related to the individual himself or external factors such as regulation constraints and inefficient management. The findings of the Focus Group Discussion on the issues of utilising Islamic social finance tools in Malaysia can be explained as follows:

The first issue is the readiness of the individuals; that is both from the demand side such as the B40 communities, and the supply side including industry players, regulators, or policymakers. According to the respondents, the internal factors from the demand side include lack of education, skills, and attitudes. One of the respondents stated that most customers seeking financial advice from debt management institution lack financial literacy. The lack of understanding caused the people to be in unmanageable debt, eventually leading to bad credit rating results.

> *"Most of the people that came to us and seek for our financial advice are those who cannot pay their debts because they don't aware on the planning part. So, they didn't plan well during taking out loans. And taking also from my personal experience when I deal with the bank, there's no such bankers that explain on planning financial; "you have to do this, so this, you know?" (Respondent 3)*

Accordingly, the respondents also highlighted the roles of educators to educate the asnaf on managing their wealth. This is important as without proper financial education or literacy, the recipients cannot manage the contribution that they received well:

> *"Maybe I can add on the roles of educators. We can educate properly on the asnaf on how to manage their wealth and money. Because rather than we give monthly zakat contribution to them, without the financial planning education, they would not be able to manage their money properly" (Respondent 7)*

Besides, from the external factor's perspective, the respondents in consensus that even though Bank Negara ascertained the idea of VBIs, specific departments in Bank Negara face some challenges in procuring the balance between VBIs idea well as the financial stability requirements. Accordingly, Islamic financial institutions would also face some risk management problems. A respondent remarks that the bank is always going for risk aversion. Most banks will prompt joint ventures with other institutions and participate in risk-sharing ventures that guarantee capital protection to lower the risk.

Secondly, there is the issue of innovation capability. A respondent remarked that innovation capability is about the supply side's (i.e., the bank) readiness for innovation to go beyond traditional banking. The financial institutions' lack of innovation in crafting the financial instruments and products that could impact society. As indicated by Respondent 5.

> *"It is about how they want to create a product and create a financial instrument that gives impact to the society. It is about how the personal financing department can craft a new product so that it can give an impact for the social" (Respondent 5)*

The third issue is the unorganized initiative and inefficiency in applying Islamic social finance. The practice of *qard* and *rahn* funds varies in different Islamic banks. Some Islamic banks provide it to poor local students and the financially weaker group of the society. In contrast, some other banks fund through a third party to small businesses, producers, and farmers who do not have access to the formal financial services. Although these charitable activities can reduce some types of poverty, the efficiency is questionable because the societies are barely improved. Therefore, the respondent suggested that there must be a central charity body that collects and invests in Islamic social enterprises to grow the funds. He implied that the large funds accumulated from different Islamic financial institutions in the central charity body would surely be sufficient to be invested in Islamic social enterprises. Moreover, if the funds are collectively invested in Islamic social enterprise, it will be a more sustainable and efficient process for poverty eradication.

The fourth is the lack of synergy with third sectors that facilitate the instruments, such as charitable institutions, zakat authorities, and the State Islamic Religious Council (SIRC) that governs zakat and waqf. Accordingly, the fund could be efficiently channelled to the recipients if they have good governance of social impact initiatives and charitable activities.

5. Conclusion

In conclusion, Islamic social finance is important to support the society and achieve sustainable development goals. The definition of Islamic social finance can be further refined to ensure the operational definition is well understood. The application of Islamic finance may perhaps unintentionally exclude the Islamic social and philanthropy-driven area in pursuit of profit maximization goals. However, the recent development of value-based intermediation has supported the application of Islamic social finance by Islamic financial institutions. The application of common Islamic social finance instruments especially zakat, waqf, and sadaqah needs to be enhanced in supporting the sustainable development goals.

Among the pertinent issues and challenges discussed there are other internal and external factors such as inefficient management and the attitude of the recipients themselves as the reason for the ineffectiveness of the application of Islamic social finance to reduce poverty and support SDG1. Not only that but new innovative investments through Islamic social finance are also needed to support long-term social improvements and sustainability that will enhance the socio-economic well-being of the community. Also, from an institutional perspective, the Islamic banking practices should adhere to the nature of Islamic social finance in achieving *Maqasid* Shariah and not only for profit maximization. Hence, the *Maqasid* Shariah, which underpins Islamic finance, makes the institutions become the example in promoting the SDGs in attaining a global economic and equitable financial system. These findings may contribute to the improvement of the policy especially about

Islamic social finance instruments due to their unique nature as compared to the widely use Islamic financial instruments.

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Factors Influencing Behavioral Intention to Participate in Family Takaful in Malaysia: An Extension of UTAUT2 Theory

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Abstract

This paper aims to investigate the critical success factors that affect behavioural intention to participate in family takaful in Malaysia using the extended Unified Theory of Acceptance and the Use of Technology Model (UTAUT2) among Muslim Malaysians. This study examines the direct relationship between performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit towards behavioural intention to participate in family takaful in Malaysia. Moreover, the study explores the indirect relationship between behavioural intention and trust. This research uses quantitative methods. The data were collected from 389 respondents using a convenient sampling technique. The relationship among the variables is assessed using partial least squares structural equation modelling (PLS-SEM) for hypothesis testing. The findings showed that performance expectancy, effort expectancy, facilitating conditions, hedonic motivation, price value are strong predictors of behavioural intention to participate in family takaful in Malaysia. Moreover, trust mediated the relationship between behavioural intention and participation in family takaful. However, social influence and habit insignificantly influence the behavioural intention to participate in family takaful in Malaysia. This study provides an extended UTAUT2 model that has never been tested in the context of family takaful. The study contributes to the field of consumer behaviour and marketing of Islamic financial products.

Keywords: *Family takaful, Behavioural intention, UTAUT2 model, Trust, Islamic financial products*

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1. Introduction

The growth of Islamic finance led to the augmented demand for Islamic insurance, better known as takaful, in many Muslim countries (Md Husin and Haron, 2020a; Nasir et al., 2021). The takaful market has gained great momentum compared to when it was first introduced. As one of the components of Islamic financial services, takaful contributed $27.6bn to the global market in 2021 (Research and Markets, 2022). The takaful market is expected to grow at a CAGR of 13% from 2022 to 2027 to attain USD 49 billion by 2026 (Expert Market Research, 2022). The data indicate that the takaful market had grown over the years, both internationally and locally, evidenced by the notable increase in CAGR and the number of takaful operators operating worldwide as well as in Malaysia.

The takaful market has expanded internationally and locally as there has been an enormous increase in the number of takaful operators operating worldwide as well as in Malaysia (Md Husin and Haron, 2020b). The global finance industry consists of; banking, sukuk, takaful, Islamic funds and other Islamic financial institutions. Among all the markets, banking and sukuk are the two main markets that provide significant growth to the Islamic finance industry. According to Islamic Finance Development Report 2020, the Islamic finance industry's assets grew to US$2.8 trillion in 2019 from US$2.5 trillion in 2018, a rise of 3% (Thomson Reuters, 2020).

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Despite the growth, it must be acknowledged that takaful is still hugely under-tapped in Malaysia. Many still do not have takaful protection despite its growing market penetration (Md Husin, 2019). This indicates that the penetration of takaful is still inadequate in Malaysia. This observation is supported by the Malaysian Takaful Association that the family takaful penetration rate rose marginally to 18.6 per cent from 2020 to 16.9 per cent in 2021 (MTA Annual Report, 2021). Even in terms of coverage in the literature, it seems that takaful has been somewhat less covered relative to Islamic banking, although both represent imperative segments of Islamic finance (Alkhan et al., 2020). The takaful segment is admittedly very small compared to the other segments of the Islamic financial system, such as Islamic banking and sukuk.

The contribution for family takaful was relatively better at approximately RM10.8 billion in 2021, compared to general takaful, which contributed RM2.9 billion only in 2020 (Bank Negara Malaysia, 2019). Yet, the family takaful market in Malaysia still has a lot of room for further development. However, the rate of growth is still below the target set by BNM in its Financial Sector Blueprint (2022-2026). The Financial Sector Blueprint stated that the initiatives under life insurance and family takaful framework are expected to spur the innovation of a wider range of life insurance and family takaful products, as well as delivery channels to suit diverse consumer needs based on individual risk appetites, financial goals, and levels of financial capability. The initiatives aimed at helping to reduce the gap with efforts to increase penetration rate of 4.8-5% by year 2026 (Bank Negara Malaysia, 2019). Additionally, the market share for family takaful was only 41.9% in 2022 (Fitch Ratings, 2022). It shows that penetration for family takaful is still low compared to conventional insurance.

Therefore, it is essential to explore and identify the factors that may drive consumer intention to participate in family takaful in Malaysia (Husin et al., 2016; Md Husin and Haron, 2020a) and this study intends to do so. The factors that will be examined are adopted from the UTAUT2 model by Venkatesh et al. (2012) i.e.: performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit. Moreover, this study also investigates trust as the mediator toward the purchase intention to penetrate family takaful in Malaysia. The examination of these factors in the context of family takaful is meant to facilitate the development of a guiding framework for takaful operators in improving their business focus and decision-making so that they are strategically geared towards better market penetration for family takaful in Malaysia.

The paper starts by providing a brief overview of the takaful industry development, followed by sections on the theoretical background, the hypotheses, the research framework, and the research method, followed by findings the analysis result, the conclusion and future research recommendations.

2. Literature Review

2.1 Theoretical background

This study relies on the UTAUT2 model, which was developed by Venkatesh et al. (2012) as an extension of their earlier Unified Theory of Acceptance (UTAUT) of 2003 (Venkatesh et al., 2003). The UTAUT2 model will be used as a framework for examining the critical success factors for the penetration of family takaful in Malaysia. The original UTAUT model of 2003 was based on a mixture of eight technology adoption theories namely the theory of reasoned action (TRA), the technology acceptance model (TAM), the motivational model, the theory of planned behaviour (TPB), the personal computer (PC) utilization model, the social cognitive theory, a combination of TAM and TPB (TAM-TPB) and the innovation diffusion theory (IDT).

From the theories, Venkatesh et al. (2003) adapted four constructs for the purpose of the UTAUT model, namely, performance expectancy (PE), facilitating conditions (FC), social influence (SI) and effort expectancy (EE). In an extension of the UTAUT model, Venkatesh et al. (2012) introduced an improved model known as UTAUT2, which incorporates three new constructs, i.e., price value (PV), hedonic motivation (HM) and habit (H), on top of the previous four in the original UTAUT. UTAUT2 is considered more comprehensive and provides better explanations, compared to other technology adoption models (Kalinić et al., 2020).

The UTAUT2 model was originally developed in studies related to technology adoption. Later, the model has also been used in the context of technology adoption in banking and internet banking. Hence, it is argued that the UTAUT2 model can also be used for a study on behavioural intention to accept family takaful in Malaysia. The UTAUT2 model is considered one of the most widely used models due to its simplicity, parsimony, and robustness (Yuen et al., 2010; Venkatesh et al., 2012; Tarhini et al., 2016). The UTAUT2 model was also proved to be superior to other prevailing competing models (Venkatesh et al., 2003; Venkatesh et al.,

2012). Moreover, and as noted earlier, UTAUT2 is considered more comprehensive and provides better explanations, compared to other models (Kalinić et al., 2020).

2.2 Behavioral intention (BI)

According to Conner and Armitage (1998), behaviour intention (BI) represents a person's motivation in their sense of a conscious plan or decision to act in certain behaviour. Intentions and behaviour are held to be strongly related when measured at the same level of specificity in relation to the action, target, context, and time frame (Conner and Armitage, 1998).

Various studies have been conducted to determine the behavioural intention of an individual towards an action. Based on the studies of Cunningham et al. (2005) and Lapointe and Rivard (2005), the intention to adopt technology varies and highly depends on the features of the technology. Information about the new system, its operations, benefits features and other people's perceptions about it are important issues affecting users' intention to adopt or not to adopt the new system and use (Kwateng et al., 2019).

For this study, the individual's behavioural intention is a significant aspect of his/her decision to participate in the family takaful scheme. Overall, there seems to be some evidence to indicate that behavioural intention towards participation in family takaful could be explained by the determinants of the UTAUT2 model. UTAUT2 model is used in this study to predict consumer behaviour towards family takaful schemes. Thus, the present study investigates factors that determine the intention to participate in family takaful schemes.

2.3 Performance expectancy (PE)

Performance expectancy (PE) is defined as how individuals improve their performance (Venkatesh et al., 2003). PE is an important construct for behaviour intention in the UTAUT2 model. It refers to the extent to which the usage of new technology or a new technology product can provide consumers with benefits in performing certain activities (Venkatesh et al., 2012).

For instance, an individual believes that using mobile banking will improve his banking activities. The individual will apply the technology when he has the guarantee that it will bring in encouraging results (Raza et al., 2019). Abu Shanab and Pearson (2007) found that the adoption of internet banking in Jordan was significantly motivated by PE. Similarly, Lu and Su (2009) used the UTAUT model in their study and discovered that PE has influenced on mobile technology adoption. Another study by Luo et al. (2010) also outlined PE as a significant determiner. Literature shows that PE has been considered one of the most significant variables in influencing the behavioural intention to adopt internet banking (Alalwan et al., 2018; Hassanudin et al., 2020).

Another literature from Morosan and DeFranco (2016) revealed that PE has a significant effect on behavioural intention to adopt online banking. Similarly, various studies also stated that PE influences mobile technology adoption (Lu and Yu-Jen, 2009; Samsudeen et al., 2022). Another study by Mazhar et al. (2014) explained that the adoption of a certain technology and thus the attainment of the advantages that come with it are initiated by the technology user's positive intention to use it. In the context of family takaful, the PE will influence consumers to participate in family takaful if they are convinced that such participation can improve their ability to meet their needs in life, despite unexpected contingencies that might otherwise affect their livelihood. Therefore, the hypothesis would be:

H1: Performance expectancy positively influences consumer intentions towards family takaful.

2.4 Effort expectancy (EE)

Effort expectancy (EE) is defined as the degree of ease associated with consumers' use of technology (Venkatesh et al. 2012). Samsudeen et al. (2022) found that if the technologies are easy to use, it will surely increase the adoption rate. Users will be more interested to adopt technology for their banking activities if the usage of mobile banking is demonstrated to be effortless. Samsudeen et al. (2022) also recounted an e-learning adoption report that suggested the significance of perceived ease of use in driving the intention to adopt e-learning. In an earlier study by Luarn and Lin (2005), it was found that there exists a positive causality between perceived ease of use and usage intention. In contrast, Amin et al. (2008) suggested that perceived ease of use has no influence on the intention to adopt mobile banking.

From an internet banking perspective, the customer can feel that internet banking is easy to use and does not require much effort, they would have a high chance to adopt internet banking (Chaouali et al., 2016). Koenig-Lewis et al. (2010) demonstrated that the ease of use using a certain technology improves the rate of technology acceptance. Amin et al. (2008) found that there exists a relationship between perceived ease of use (EE) and mobile banking usage intention. Likewise, Raza et al. (2019) examined the acceptance of M-banking services and reported that EE influences the intention to adopt it. These studies revealed inconsistent results and the phenomenon was less explored in family takaful; therefore, the following hypothesis is formulated:
H2: Effort expectancy positively influences consumer intentions to participate in family takaful schemes.

2.5 Social influence (SI)

Social influence (SI) is directly correlated to the degree to which outcomes from using new products or innovations are noticeable to friends and relatives (Eneizan et al., 2019). They pointed out that if consumers observe others deriving pleasure from the use of new products or innovations, those products are more likely to be distributed faster among customers. Venkatesh et al. (2003) suggested that technology adoption is influenced by the personal belief of what others think of a certain technology, especially the perception of close relatives and friends. Similarly, Püschel et al. (2010) also highlighted the significance of SI in driving the intention of a person to use mobile banking in the context of Brazil.

In contrast, Raza et al. (2019) and Kaabachi and Obeid (2014) explored the factors affecting Islamic banking adoption in Tunisia and reported that SI does not affect the customers' intention to use it. The role of social influence in enhancing customer intentions and the use of internet banking has been widely analysed in previous studies (Tarhini et al., 2016; Hasanudin et al., 2020). Püschel et al. (2010) identified SI as a critical factor which affects the individual intention to use. Therefore, the hypothesis would be:
H3: Social influence positively influences consumer intentions to participate in family takaful schemes.

2.6 Facilitating conditions (FC)

Facilitating conditions (FC) is defined as the technical support available to the individual during technology usage (Venkatesh et al., 2003). Other studies from Venkatesh et al. (2003) and Kwateng et al. (2019) have indicated that FCs influence the behavioural intention to adopt mobile banking. Kwateng et al. (2019) further found that the extent of influence by FCs on behavioural intention is moderated by three factors, i.e., age, gender and experience. The older aged group is more affected by FCs compared to the younger ones; women are more affected by FCs compared to men; and the less experienced are more influenced by FCs compared to the more experienced ones (Kwateng et. al., 2019).

In the context of mobile banking, a person mainly needs to have a certain set of skills, a mobile phone, and a stable and secure internet connection (Samsudeen et al., 2022). The better FC available to the users, the more will be their willingness to accept the technology (Baptista and Oliveira, 2015; Raza et al., 2019). Alalwan et al. (2018) found that FCs significantly influenced the behavioural intention of the customers in Jordanian banks. This is further supported by Islam (2017) who identified FC as a significant factor in mobile internet usage among youth. A study by Alwahaishi and Snasel (2013) affirmed that FC has an impact on behavioural intention and continuous usage of technology. Therefore, the hypothesis would be:
H4: Facilitating conditions positively influences consumer intentions to participate in family takaful schemes.

2.7 Hedonic motivation (HM)

Eneizan et al. (2019) described hedonic motivation (HM) as the value of escapism in its potential to fulfil consumer needs for entertainment or emotional involvement. Thus, pleasant, and likeable mobile marketing is generally thought to have a positive impact on consumers' attitudes towards the brand (Eneizan et al., 2019). In other words, HM refers to the feeling or emotion that emerges from using a certain technology, or in the case of mobile banking, the pleasure or fun when using the said technology (Venkatesh et al., 2012). In the consumer context, HM has also been found to be an important determinant of technology acceptance and use (Venkatesh et al., 2012). Venkatesh et al. (2012) also stated there is a direct relationship between HM and technology usage intention. In addition, the role of HM in banking and electronic platform has appeared in several studies (Curran and Meuter, 2007; Alalwan et al., 2017).

Alalwan et al. (2017) studied the adoption of mobile banking in Jordan and reported that HM influences the intention of the users to adopt it. Another study from San-Martin et al. (2015) found perceived enjoyment to

be a strong predictor of satisfaction in m-commerce, but only for young adults (less than 25 years old). Similarly, San-Martin et al. (2015) examined the drivers of customer satisfaction in mobile shopping and reported perceived entertainment as one of the key predictors of satisfaction. Therefore, this study hypothesizes the following:
H5: Hedonic motivation positively influences consumer intentions to participate in family takaful schemes.

2.8 Price value (PV)
Venkatesh et al. (2012) defined price value (PV) as "consumers' cognitive trade-off between the perceived benefits of the applications and the monetary cost of using them". In other words, consumers while adopting any new technology tend to compare the utilitarian benefits of the technology with the monetary cost involved in using it (Venkatesh et al., 2012). It means the greater the price value, the higher would be the motivation to adopt the new technology (Dhiman et al., 2020). In accordance with this assumption, Dhiman et al. (2020) suggested that if the price value is positive then the consumers' preference to adopt the technology is more.

Goh et al. (2014) also reported that the more value the customer perceives from the system, the more likely would be its adoption of the Islamic mobile banking. Another existing research confirmed that price value acts as a strong determinant of consumers' behavioural intention in the context of mobile banking (Mahfuz et al., 2016).

According to Eneizan et al. (2019), PV is significant in determining the BI to adopt mobile marketing among Jordanian customers. In addition, the studies conducted by Kwateng et al. (2019) among the m-banking users have also described PV as a significant predictor to behaviour intention. Consequently, this study assumed the following:
H6: Price value will strongly influence consumer intentions to participate in family takaful scheme.

2.9 Habit (HA)
Habit entails an individual's repetitive actions driven by his knowledge and experience. Habit is also positively correlated to usage intention and actual usage (Venkatesh et al., 2012). Kolodinsky et al. (2004) found that habit influences the decision to adopt mobile banking for the US consumers. Other studies by Kim and Malhotra (2005) and Limayem et al. (2007) also discovered the significance of habit in affecting the continuous usage of information system (IS).

Habit has been included in several studies of continuance intention for use of IT-based technologies, as customers use these technologies or devices frequently and the behaviour becomes automatic (Kalinić et al., 2020). Lin and Wang (2006) reported that habitual prior preferences in the use of mobile commerce directly and strongly increase customer commitment, i.e., their intention to continue using mobile commerce in the future. Habit has been included in several studies of continuance intention for use of IT-based technologies, as customers use these technologies or devices frequently and the behaviour become automatic (Hsiao et al., 2016).

Habit is one of the proven to be significant constructs determining the behavioural intention of consumers in adopting m-banking services (Farzin et al.,2021; Ferreira et al., 2021; Kwateng et al., 2019) in adopting m-banking services by individual customers in Bangladesh. Given this situation, this study proposes the following hypothesis:
H7: Habit will strongly influence consumer intentions to participate in the family takaful scheme.

2.10 Mediating role of trust
Trust is known to be one of the most powerful influencers of relationship quality, intentions of loyalty and enduring buyer-seller relationships (Shukor, 2020). Trust also involves behavioural intention that signifies a customer's confidence in a service provider (Sumaedi et al., 2015). Trust is also important in a service relationship due to the intangible nature of services where trust is often used as a tool to market the organization's services to a customer (Sumaedi et al., 2015; Haron et al., 2020).

Trust in the banking sector exists when customers feel confident and secured once they have some assurance that the bank will look after them (Jarvinen, 2014; Tabrani et al. 2018; Haron et al., 2020). Jarvinen (2014) explained that consumer trust is based on consumer's experience, feeling of confidence and security in the ability of banks to behave honestly, committed with rules and regulations. It is very essential for the banks to keep their promises, be honest and committed to build bank trust relationship

(Jarvinen, 2014; Tabrani et al. 2018). This is supported by Cho and Hu (2009) who defined trust as a belief that a bank performs its business with a customer in a responsible, dependable, and competent manner, as well as behaves in a way that is not harmful to its customer to pursue its own interest.

Furthermore, trust is described as a consumer's conviction that a bank will carry out its operations as expected by the customer (Haron et al., 2020). According to Sumaedi et al. (2015), “the higher the level of customer trust with the connection, the higher the customer conviction that Islamic banks operate appropriately, and vice versa.” Positive customer experiences will enhance word of mouth to others in the long run (Sumaedi et al. 2015). Trust hence in Islamic banking services is based on positive customer experience that is supported by the bank’s ability to behave in a reliable way.

Sumaedi et al. (2015) investigated the impact of trust on emotional commitment in individual Islamic bank saving clients. They discovered that trust and affective commitment do not have a significant relationship. This finding differs from Sanchez-Franco (2009), and Fullerton (2011) findings on the connection between trust and affective commitment. The explanation for this discovery is that Islamic bank customers have the option of investing or their money in multiple banks. Despite the customer's faith in the bank, this situation precluded the emotional link that is at the heart of affective commitment.

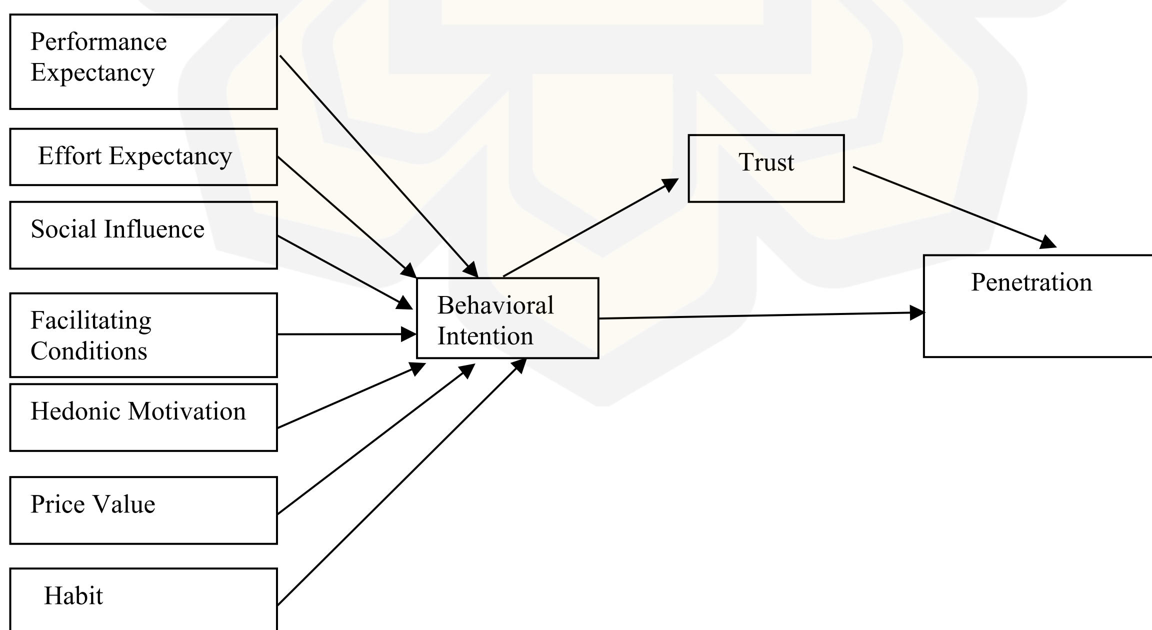
In the context of takaful, a trust may also have an impact. Shukor (2020) pointed out that trust reflects the client’s confidence towards the takaful agent’s integrity. Trust can be defined as “a belief in takaful providers’ honesty and that they will not behave opportunistically” (Aziz et al., 2019). In other words, trust reflects the extent of a client’s confidence in relying on takaful agent’s integrity.

The role of trust has been highlighted by Poan et al. (2021) to determine trust as a factor in the intention to purchase Islamic insurance (takaful) in Indonesia. In takaful industry, consumer trust is even more crucial. The result shows that trust significantly affected purchase intention regarding Islamic insurance. Considering the above discussion, the study assumes that trust can mediate between the path to behavioural intention and penetration of family takaful. Given this situation, this study proposes the following hypothesis:

H8: Trust will mediate between consumer intentions and the penetration of family takaful in Malaysia.

3. Conceptual Framework

Figure 1: Conceptual Framework



Note: Framework is extended from Venkatesh et al. (2003)

4. Research Methodology

The model of this research is illustrated in Figure 1, which is a conceptual model of this study. This model is extended from the UTAUT model (Venkatesh et al., 2003) which are performance expectancy, effort expectancy, social influence and facilitating conditions along with three additional factors such as hedonic motivation, price value and habit. In this study, these variables are used to study their influence on behavioural intention towards family takaful.

A self-administrated questionnaire (SAQ) was developed for the measurement of research variables and for the collection of demographic details. The questionnaire contains two sections. Section A related to the demographic information such as age, gender, occupation, educational level, and marital status. While Section B comprises five-point Likert scale measurement questions which range from strongly disagree (1) to strongly agree (5) for measuring the critical success factors on penetration family takaful such as performance expectancy, effort expectancy, social influence, facilitating condition, hedonic motivation, price value and habit toward the behavioural intention of family takaful. These items were adopted by Venkatesh et al. (2012), Hasanuddin et al. (2020), and Nawaz et al. (2020). The items for trust and behavioural intention variables were retrieved from Husin et al. (2016) and Poan et at. (2021), which are four items for trust and four items for behavioural intention. Prior to that, all the items in the questionnaire were validated by two (2) experts in the related field prior to distributing the questionnaires.

Sample research was also performed, and the questionnaire was distributed among Muslims in Klang Valley via email and social media. The sample data are collected from the survey method and the convenience sampling technique was used. A total of 410 participants returned the survey, of which the researcher deleted 21 participants' records due to inadequate responses. Thus, the total number of participants in the analysis was 389.

Once collected, the data are checked for errors, discrepancies, and outliers. The researcher used the partial least squares (PLS) method to analyse the data using Smart PLS software. PLS-SEM offers the use of many constructs and many items with a representative sample size to represent the total population and the model (Hair et al., 2019). The study uses Smart PLS because it is a variance-based structural equation modeling (SEM) approach and is a robust and incremental characteristic in predicting endogenous variables (Hair et al., 2017; Marko et al., 2022). Data analysis consisted of frequency analysis for demographic factors, confirmatory factor analysis for reliability and validity and bootstrapping for hypothesis testing.

In terms of ethical considerations, the objectives of the study were clearly stipulated for the survey participants. No participant was forced to participate in the survey, and personal information such as ID and personal email address was not collected. The data collected is only used for this research purpose and were not handed over to any other organization for any other use.

5. Results and Discussion

5.1 Demographic information of the survey participants

Table 1 denotes the demographic profile of the respondents. The total number of participants in the survey was 389, which 128 were male (32.9%) and 261 were female (67.1%). In terms of age, 181 participants belonged to the age group of less than 29 (46%), 44 participants belonged to the 30-34 years age group (11%), 50 participants belonged to the 35-39 years age group (12.9%), 39 participants belonged to the 40-44 years age group (10%), 65 participants belonged to the 45-50 years age group (16.7%) and 10 participants belonged to the above 50 age group (10%).

In terms of occupation, 39.8 per cent were professionals, 13.1 per cent were employees under non-professional and 47 per cent were those who were self-employed. In terms of education, 56.3 per cent respondents had a degree holder, 15.2 per cent respondents had Master holder, 4.6 per cent were PhD holder and the remaining 23.9 per cent belongs to another field of study. As for marital status, 48 per cent respondents were single and 48.6 per cent respondents were married while the remaining 2.8 percent were divorced.

Table 1: Profile of respondents

Demographic items	Frequency	(%)
Gender		
Male	128	32.9%
Female	261	67.1%
Age		
Less than 29	181	46%
30-34	44	11%
35-39	50	12.9%
40-44	39	10%
45-50	65	16.7%
Above 50	10	10%
Occupation		
Professional	155	39.8%
Non-professional	51	13.1%
Self-employed	183	47%
Education		
Degree	219	56.3%
Master	59	15.2%
Phd	18	4.6%
Other	93	23.9%
Marital status		
Single	189	48.6%
Married	189	48.6%
Divorced	11	2.8%

Source: Author estimates

5.2 Assessment of measurement model

The measurement model investigates the relation between latent variables and their measures. Table 2 shows the outcome of the measurement model. The measurement model has passed various tests for validity and reliability as described by Hair et al. (2011, 2012). Convergent validity of the measured items is validated by individual item reliability, Cronbach's alpha, composite reliability, and average variance extracted (AVE) in PLS- SEM. According to Tabachnick et al. (2007), convergent validity is established for a construct if the Cronbach's alpha is above 0.55, composite reliability is above 0.7 (Raza et al., 2019) and AVE is above 0.5 as proposed by (Fornell and Larcker, 1981). All the constructs surpass this criterion (see Table 2 supported by Figure 2).

Furthermore, it is observed that all items have a loading above 0.7 (see Table 2 supported by Figure 2). Scale reliability was assessed through composite reliability and Cronbach's alpha (see Table 2 supported by Figure 2), and both were greater than 0.7 for each construct.

Two tests are carried out to analyse the results of discriminant validity: analysis of the average variance extracted (AVE) and cross-loadings. Fornell and Larcker's (1981) criterion is used to examine discriminant validity and compare the square root of AVE and inter-construct correlations. Table 3 represents discriminant validity results. The first value of every construct is in italic and the diagonal part should be greater than the off-diagonal part. Fornell and Larcker's (1981) criterion was successfully met, and no cross-loadings were greater than their respective loadings. Also, the heterotrait-monotrait ratio of correlation results in Table 4 shows that none of the heterotrait-monotrait criteria is greater than 0.85 (Henseler et al., 2015).

Table 2: Measurement model results

Constructs	Items	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Effort Expectancy (EE)	EE1	0.882	0.963	0.971	0.87
	EE2	0.953			
	EE3	0.936			
	EE4	0.947			
	EE5	0.945			
Facilitating condition (FC)	FC1	0.947	0.959	0.97	0.889
	FC2	0.943			
	FC3	0.936			
	FC4	0.945			
Hedonic Motivation (HM)	HM1	Deleted			
	HM2	0.925	0.924	0.952	0.868
	HM3	0.944			
	HM4	0.926			
Habit (HA)	HA1	0.876	0.948	0.96	0.829
	HA2	0.923			
	HA3	0.894			
	HA4	0.942			
	HA5	0.916			
Performance expectancy (PE)	PE1	Deleted	0.91	0.937	0.757
	PE2	0.937			
	PE3	0.941			
	PE4	0.946			
	PE5	0.929			
	PE6	0.511			
Price Value (PV)	PV1	0.93	0.908	0.942	0.844
	PV2	0.905			
	PV3	0.921			
Social influence (SI)	SI1	0.929	0.955	0.967	0.88
	SI2	0.943			
	SI3	0.935			
	SI4	0.945			
Trust (TT)	TT1	0.742	0.879	0.913	0.726
	TT2	0.855			
	TT3	0.909			
	TT4	0.893			

Note: HM1 and PE1 were deleted due to low loadings

Figure 2: Measurement model results

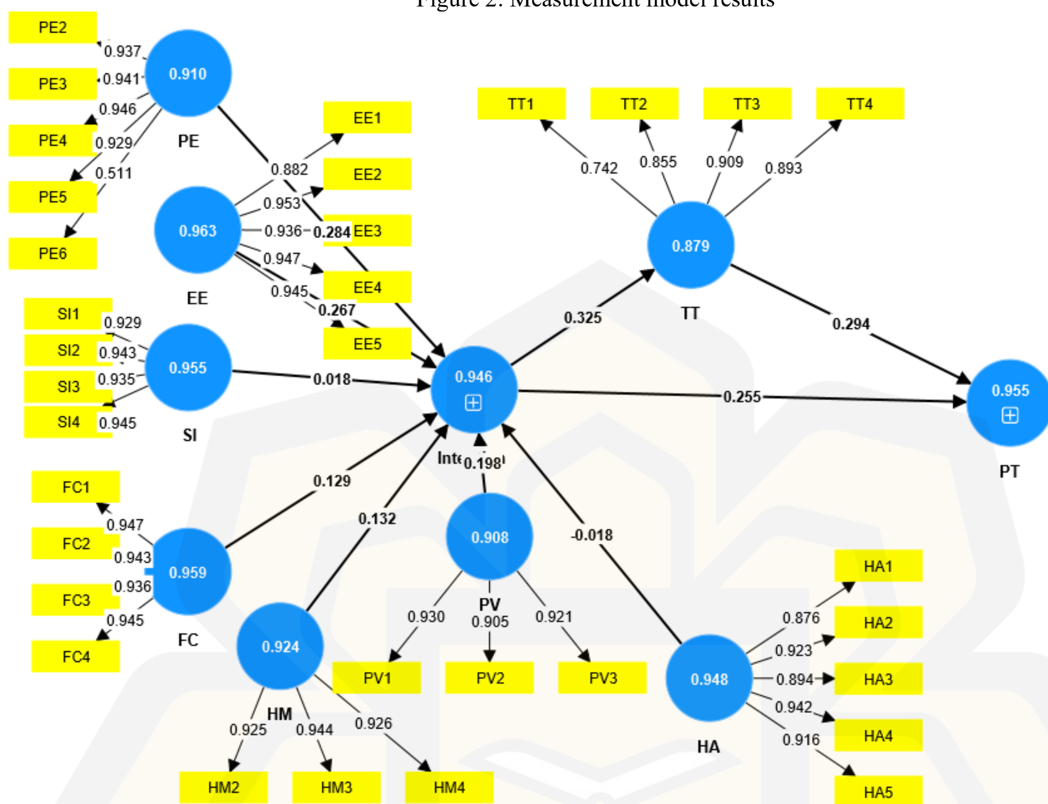


Table 3: Discriminant validity using Fornell and Lacker Criterion

	EE	FC	HM	HA	Int	PE	PV	PT	SI
EE	*0.933*								
FC	0.583	*0.943*							
HM	0.699	0.711	*0.932*						
HA	0.315	0.271	0.351	*0.911*					
Int	0.691	0.599	0.672	0.348	*0.928*				
PE	0.656	0.63	0.652	0.386	0.702	*0.87*			
PV	0.315	0.186	0.364	0.432	0.456	0.364	*0.919*		
PT	0.348	0.241	0.267	0.318	0.361	0.357	0.274	*0.831*	
SI	0.756	0.522	0.623	0.259	0.593	0.561	0.348	0.251	*0.938*
Trust	0.473	0.208	0.386	0.506	0.325	0.476	0.477	0.386	0.487

Note: The diagonal elements (italics) represent the square root of AVE (average variance extracted)

Table 4: HTMT criterion

	EE	FC	HM	HA	Int	PE	PV	PT	SI	TT
EE										
FC	0.6									
HM	0.739	0.748								
HA	0.33	0.284	0.375							
Int	0.715	0.619	0.713	0.368						
PE	0.715	0.653	0.706	0.434	0.743					
PV	0.332	0.193	0.392	0.467	0.49	0.427				
PT	0.359	0.248	0.282	0.332	0.377	0.399	0.29			
SI	0.785	0.539	0.659	0.27	0.617	0.614	0.372	0.261		
TT	0.508	0.207	0.419	0.544	0.332	0.569	0.51	0.388	0.54	

Notes: EE= Effort Expectancy, FC= Facilitating Conditions, HM= Hedonic Motivation, HA= Habit, Int= Intention, PE=Performance Expectancy, PV= Price Value, PT= Penetration, SI= Social Influence, TT= Trust

5.3 Structural model

After the assessment of the measurement model, the structural model was assessed. The structural model includes the model's predictive competencies and the relationships among the reflective constructs. For that reason, R^2 values and Q^2 predictive relevance were calculated. As shown in Table 5, R^2 for the behavioural intention was 64 per cent, penetration was 21 per cent and trust 10 per cent. This suggests that the model has a moderate explanatory power (Hair et al., 2011).

Furthermore, to assess the predictive relevance of the model, the blindfolding technique was used. Blindfolding should only be used for an endogenous variable that has a reflective measurement. If $Q^2 > 0$, then the model has a predictive relevance. The study showed Q^2 value for behavioural intention was 0.548, for penetration it was 0.143 and for trust was 0.068 (Table 5).

Table 5: Goodness of Fit and Predictive relevance

	R^2	Q^2
Behavioural intention	0.644	0.548
Penetration	0.211	0.143
Trust	0.105	0.068

The hypotheses tested in this research are performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value and habit which directly influence behavioural intention and trust as the mediator to influence between behavioural intention and penetration. Table 6 presents a summary of the hypothesised relationships among the constructs. As shown in Table 6, almost all hypotheses were accepted, except two hypotheses were rejected.

Table 6: Hypothesis testing

Hypotheses	Relationship	STDEV	t- value	p- value	Decision
H1	PE -> Int	0.046	6.169	0.000	Supported
H2	EE -> Int	0.059	4.561	0.000	Supported
H3	SI -> Int	0.05	0.348	0.728	Not supported
H4	FC -> Int	0.043	2.993	0.003	Supported
H5	HM -> Int	0.057	2.333	0.02	Supported
H6	PV -> Int	0.044	4.518	0.000	Supported
H7	Habit -> Int	0.035	0.493	0.622	Not supported
H8	Int -> Trust -> Penetration	0.022	4.446	0.000	Supported

The research explores the factors influencing the behavioural intention of an individual to participate in family takaful in Malaysia. The model of this study involves trust as a mediator between behavioural intention and penetration of family takaful. The results showed that performance expectancy (H1) is directly and significantly influence customer to participate in family takaful. These outcomes are consistent with the previous study (Hassanudin et al., 2020) which conclude that the performance expectancy influence customer to adopt internet banking. It shows that the customers can improve their ability to meet their livelihood when they participate in family takaful.

Similarly, effort expectancy (H2) also has a significant impact on the behavioural intention to participate in family takaful. The outcomes are similar to the study (Samsudeen et al., 2022). It concludes that customers will be more interested to participate in family takaful if the usage is demonstrated to be effortless. On the other hand, social influence (H3) is statistically insignificant, hence H3 is rejected. This means that the aspects of social influence will not influence the participants to be involved in family takaful. The result is consistent with a previous study (Kaabachi and Obeid, 2014) that stated that social influence does not affect the customers in Islamic banking adoption.

Furthermore, the results of the current study indicate facilitating conditions (H4) has a positive relationship with behavioural intention. The result is consistent with (Raza et al., 2019) that facilitating conditions play a significant role in influencing behavioural intention to use banking technology. Next, the hedonic motivation (H5) of this study is accepted and significant towards behavioural intention. The findings in this study correspond with previous studies that hedonic motivation plays a significant role in predicting behavioural intention to use technology in the wide variety of contexts (Beh et al. 2021; Farzin et al. 2021).

Furthermore, the current research indicates price value (H6) has a positive relationship with behavioural intention. The result is consistent with (Eneizan et al., 2019) that price value is significant in determining the behavioural intention to adopt mobile marketing among Jordanian customers. In the context of this study, price value significantly influences behavioural intention to participate in family takaful. In contrast, the aspect of habit (H7) and behavioural intention were not significant, hence H7 is rejected. It is consistent with (Mahfuz et al., 2016) that habit is not a significant driver in adopting m-banking services in Bangladesh, in line with (Kwateng et al., 2019).

The outcome of this study indicates that trust (H8) has a significant mediating impact between behavioural intention and penetration of family takaful in Malaysia. This means that the greater the consumer's confidence in family takaful, the stronger that the consumer's intention to subscribe to family takaful. The result of the study is in line with the findings from Kalinic et al. (2020) and Hanif et al. (2021) that stated the trust significantly influence the behavioural intention in mobile banking.

6. Conclusion and Recommendation

Based on the analysis, this study provides evidence that out of eight hypotheses, six hypotheses are accepted, and two hypotheses were rejected. Those hypotheses which are accepted are performance expectancy positively influence behavioural intention (H1), effort expectancy significantly influence behavioural intention (H2), facilitating conditions significantly influences behavioural intention (H4), hedonic motivation positively influences behavioural intention (H5), price value has a direct effect toward behavioural intention (H6) and trust significantly influences as mediator between intention and penetration (H8). However, social influences(H3) and habit (H7) positively influence behavioural intention is rejected.

The recommendation for this study helps family takaful managers and policy makers to develop strategies for family takaful customers. The result from the research will assist family takaful companies to form customer- oriented financial solutions. It is noteworthy opinion that the sale of family takaful plan needs extra skills and effort; therefore, the findings will be useful to understand the behavioural intentions for the customer to participate in family takaful. The reason behind it due to the research successfully implemented a well-established theoretical framework known as UTAUT2 model in the context of family takaful. Through this, the potential participant of family takaful plan will be attracted which will create a demand for family takaful companies.

The takaful operator must enhance the promotional campaign about family takaful to promote participation in its products. This can be done by increasing awareness within society on the benefits of having family takaful protection, especially in line with the seven factors identified as the critical success factors for behavioral intention under the UTAUT2 model.

More specifically, takaful providers should focus on educating their clientele about the comparative advantage of having a family takaful as opposed to not having one, or as opposed to conventional insurance. When the people are convinced that family takaful can ease their life and their loved ones, especially when facing difficult situations like death and permanent disability, they will be more receptive towards participating in the scheme. Hence, takaful providers need to create good reputation and satisfactory customer experience so that positive word of mouth can further reinforce popularity of takaful among the bigger populace.

If takaful providers decide to go for digitalization and fintech, attention must also be paid to facilitating condition as an important factor influencing behavioural intention of consumers. Matters, such as, fast and secure internet connection when using mobile phones or computers, user friendly interfaces, and stable and functional IT systems are crucial to provide conducive customer experience and facilitating conditions. In addition, ease of access to information related to family takaful will facilitate consumers' awareness and choice about family takaful. Facilitative takaful agents with excellent product knowledge will also influence the consumers' behavioural intention to participate in family takaful schemes.

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An Analysis of the Legal and Governance Framework for Protection and Promotion of the Rights of the Islamic Bank, Customers, and Community: A Case Study of Brunei Darussalam

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Abstract

Islamic corporate governance is aimed at maintaining Shariah compliance in the Islamic finance industry. Thus, it seeks to achieve the strategic objectives of Shariah (*maqāṣid* al-Shariah). Accordingly, it should protect and promote the stakeholders' rights as long these rights are recognized by Shariah. However, the literature on the role of Islamic corporates in protecting and promoting the rights of the stakeholders is not sufficient in contrast to conventional corporate governance. This paper fills this gap by looking into how far Shariah board in Brunei Darussalam protect and promote the rights of the bank, customer, and community with reference to the *maqāṣid* (objectives) of Shariah, specifically, the *maqāṣid* of wealth as well as the laws of the Brunei Darussalam. After the discussion, it can be concluded that Shariah boards in Brunei Darussalam significantly protect and promote the rights of the bank, the customer, and the community but they prioritize the bank over the customer, especially, in the deposit products and the attached facilities. This paper makes use of legal and content analysis methods.

Keywords: *Shariah board, right, Islamic bank, customer, community, Maqāṣid of wealth.*

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1. Introduction

Islamic Corporate Governance (ICG), like its conventional counterpart, refers to a system by which corporates are directed and controlled with the purpose to meet the corporation's objective by protecting all the stakeholders' interests and rights (Hasan, 2007). Thus, an Islamic corporation be it an Islamic bank (IB), Islamic insurance company, or the like, should take responsibility to make certain that the stakeholders' rights and interests are respected and fulfilled. This also applies to the contractual rights provided to the banks and the customers. It also goes hand in hand with the *maqāṣid* (objectives) of Shariah, especially, the preservation of wealth.[1] The wealth *maqṣad* (singular of the word *maqāṣid*) is manifested in obtaining wealth through legitimate means and using it for legitimate channels (Ibnu ʻĀshūr, 2001). It also implies making wealth within the reach of the *ummah* (Muslim community) (Ibnu ʻĀshūr, 2001). Ibn ʿĀshūr broke the wealth *maqṣad* down

[1] The *maqāṣid* (objectives) of Shariah includes the preservation of faith, life, mind, progeny, and wealth (Al-Imam Al-Ghazali, 2014).

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into the circulation of wealth, establishment of ownership, explicit wealth, protection of wealth, and legitimate wealth (Ibnu ʻĀshūr, 2001). These five domains emerged from a deduction process based on the *Qurān*. It should be noted that the word "wealth", in this context, shall include the right to acquire or use it as the means should follow their ends (Kamali, 1989).

2. Literature Review

Literature shows that researchers of Islamic corporate governance agree that ICG takes into account the welfare of the whole Islamic society (Fatima et al., 2019). In the context of an Islamic bank, the Islamic society includes BOD, managers, shareholders, SB, customers, and regulators (Al-Nasser Mohammed and Muhammed, 2017). According to (Iqbal and Mirakhor, 2004), the relationships between these stakeholders are based on concepts of the right of property and contract. The former principle requires the stakeholders to acquire property through lawful means and not to waste or squander it. It also gives them the right to jointly own it. Under the latter principle, the managers should fulfill their explicit and implicit obligations toward other stakeholders under partnership contracts, namely, *mushārakah* and *muḍarabah* (Besar, 2019). The existing literature discussed the general principles aimed at protecting and promoting the rights of the stakeholders such as *shūra* (consultation, accountability, transparency, and adequate disclosure (Alnofli, 2021). However, they are concerned with the relationship between managers and other stakeholders rather than between SB and other stakeholders.

Moreover, one should remember that the contractual rights of the stakeholders are not always the same. They depend on the nature of the contract between the stakeholders. Similarly, the protection of financial rights under the *maqṣad* of wealth is continuously open for research through legal reasoning (*ijtihād*) (Malik, 2019). Accordingly, attention should be given to the contracts between the stakeholders and the context where and when *maqāṣid* al-Shariah applies. This paper fills this gap by considering the role of the SB in protecting the rights of the stakeholders and the appropriate methods it proposes for doing so within the jurisdiction of Brunei Darussalam.

3. Methods

This study uses qualitative content analysis for examining the rights of the stakeholders and the methods of protecting and promoting these rights. It also makes use of doctrinal analysis for understanding the relevant legal rules (Hutchinson and Duncan, 2012). These legal rules are used as a yardstick for benchmarking the role of the Shariah board (SB) in protecting and promoting the rights of the stakeholders. The SB's standpoints on the rights of the stakeholders are inferred from secondary sources. These secondary sources consist of the resolutions/ *fatwas*, terms and conditions of the banking products, annual reports, and official websites of the Bank Islam Brunei Darussalam (BIBD). The legal rules are obtained from primary sources. These primary sources are legislation and central banks' guidelines.[2]

The paper also applies the wealth *maqāṣid* framework mentioned above according to the view of (Ibnu ʻĀshūr, 2001) for evaluating the role of the Shariah board in protecting and promoting the rights of the stakeholders from an Islamic perspective.

4. Results and Discussion

4.1 Protection and promotion of the rights of the bank and customer

SB took different methods for protecting and promoting the rights of the bank and customers. These methods vary with the time of communication between the bank and the customer, and the types of products as follows.

4.1.1 Protection and promotion of the rights of the bank and customer before the conclusion of the contract

Aiming for promoting the freedom of the bank, and the customer, SB considers that communication including offer and acceptance between the parties to a contract is a precondition for the conclusion of the contract and should be present at the same ceremony (*majlis al-ʿaqd*) (Rani et al., 2020). This ensures that the parties are aware of each other, directing their attention to making a contract and agreeing to it. To support this aim, SB typed the terms and conditions of the offered transactions in both Malay and English languages and give the

[2] Primary sources of law are rules of law that are binding upon the courts, government, and individuals such as constitutions, statutes, regulations, treaties, court orders, administrative regulations, policy material. See (Ahmad et al., 2020).

latter superiority over the former in event of a contradiction between them (BIBD *Wakālah* Terms and Conditions of Deposit Products, section 25.8). It goes, further, to publish them via its official website (General | Bank Islam Brunei Darussalam, 2022). These terms and conditions are shown to the customers to read before the conclusion of the contract in writing (BIBD account opening form, paragraph 6).

In addition, any communication between the parties, be it an offer or acceptance, notification, or instruction of the customer to the bank, approval of the assignment of the customer's rights, or waiver of a bank's right shall be made in writing (BIBD *Wakālah* Terms and Conditions, sections, 1.7,7.4, 8.2 and 10.2); (*Tawarruq* Terms and Conditions of Sale, sections, 15 (a), 10, 19). Besides, SB necessitates the submission of the customer's identity card or passport and any other document as it thinks necessary before or during the conclusion of the contract (BIBD *Wakālah* Terms and Conditions of Deposit Products, sections 1.6 and 25.2 (I)). To prove the contractual rights of the parties, SB encourages the presence of two witnesses at the time of the conclusion of the contract regardless of their gender (Rani et al., 2020). This supports the *maqṣaḍ* of explicit wealth.

Furthermore, SB requires that the parties to a contract should be *rāshid* (sensible). Again, this is to make certain that they can fully, comprehend the contents of the contract and inhibit imprudent and reckless behavior usually caused by infants. A legal entity such as companies must contain shareholders, contracts, capital, business, and profit (Rani et al., 2020). This enables the counterparty to know the company and trust it. On the part of the IB, they are an incorporated and registered company with the object of Islamic banking business. Moreover, managers representing the bank are adults and professionally qualified for understanding the banking contracts and putting them into practice. The staff is rich with experts in various areas including Islamic banking, finance, accounting, and law (BIBD Annual Report, 2020). With regards to the customers who are willing to contract with the bank, they should attain the age of 18 years old or, in some cases, above (BIBD *Wakalah* Terms and Conditions, Section 1.3).[3]

From a legal point of view, the offer and acceptance of the parties are essential for the formation of a contract. They can be expressed by spoken, written words, or gestures (Bruneian Contract Act, article 3). They should also be declared by the free will of the parties orally or in written form. In addition, the parties should have a common understanding of the terms of the contract (Bruneian Contract Act, article 10). As for the parties of the contract, they should be at, or above the age of majority (Bruneian Contract Act, articles 11 and 12).[4] Thus, the age requirement laid down by SB is aligned with the law.

In support of the circulation of wealth around the community, SB considers that the religion of the parties is immaterial for the validity of commercial contracts (Rani et al, 2020). Similarly, according to them, it does not matter whether the corporate customer is practicing Islam or not. The bank can open an account for conventional insurance companies and other companies with Shariah non-compliance (Rani et al, 2020). When it comes to the law, all competent people whatever their religion are free to contract (Bruneian Contract Act, article 10). Nevertheless, according to the SB, IBs may penalize people who have been blacklisted for failing to pay their debts by boycotting them (General *Wakalah* Terms and Conditions of Deposit Products, section, 1.8) (Rani et al., 2020). In practice, banks measure the borrowers' creditworthiness by referring to their self-inquiry report lodged with the credit bureau.[5]

4.1.2 Protection and promotion of the rights of the bank and customer after the conclusion of the contract

Methods used for protecting and promoting the rights of the bank and customer after the conclusion of the contract vary with the purpose, and then, the type of the contract. Thus, this section is divided into two parts. One for the deposit products and the other for financing products.

4.1.2.1 Protection and promotion of the rights of the bank and customer under deposit products

On the side of *maqṣad* of the circulation of wealth, SB recognized some deposit products including *wadīʿah yad ḍamān* (safekeeping with guarantee), *mushārakah* (joint partnership), and *muḍārabah* (dormant partnership), *bayʿ bi thaman ʿājil* (BBA) (deferred payment sale) and *wakālah* (agency). The SB went deeper

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[3] One example for products offered for customers above 18 years old is *al-mushārakah al-mutanāqisah* with minimum age requirement of 21 years old (Home Financing | Bank Islam Brunei Darussalam, 2022).

[4] The age of majority is defined to be 18 years (Martin, 2013).

[5] Self-Inquiry Report (SIR) is the credit report that contains the detailed credit information that one has taken up, such as credit card, car, home, personal education financing, electric bill, telephone and internet subscription, from different financial and non-financial institutions. The Credit bureau is a unit under the Regulatory and Supervision Department of Brunei Darussalam Central Bank (BDCB) established to facilitate the financial institutions in determining a borrower's creditworthiness. See (About Credit Bureau, 2022.)

to explain the ownership rights of the parties and support the means of promoting these rights. As far as the *wadīʿah yad ḍamān* is concerned, the bank is entitled to wholly, or partly use the money deposited for any kind of transaction, and, solely, acquire any profit resulting from it. The customer is entitled to have an amount equal to the deposit safe and available for withdrawal at any time. To facilitate utilization of the deposit, the customer is provided with a telegraphic transfer service and demand draft upon his request (Foreign Currency | Bank Islam Brunei Darussalam, 2022). However, they have no right to the profit unless the bank decides to give the customer a monetary gift out of the profit. This gift gives value to the relationship between the bank and its customers (Rani et al., 2020). To ensure that the transaction between the bank and the customer is explicit, IBs provide the customer with a monthly financial statement (Foreign Currency | Bank Islam Brunei Darussalam, 2022). Regardless of the term given for this transaction, Bruneian law recognizes this transaction since it is equivalent to the debtor-creditor relationship.[6]

As regards *mushārakah* and *muḍārabah* contracts,[7] SB acknowledges that each of the parties owns their share of the profit as per agreed. The loss caused on the capital shall be borne by both parties according to the respective ratio of contribution in *mushārakah* and solely by the customer in *muḍārabah* unless it is caused by negligence on the part of the bank. This is because it is difficult to ascertain the exact value of the expertise, effort, and skills exerted by the entrepreneur, in this case, the bank. Both parties have a right to be treated honestly and fairly (Rani et al, 2020).

From a legal point of view, both *mushārakah* and *mudhārabah* are called partnerships which is a relation that subsists between persons who have agreed to combine their property, labor, or skill in some business, and to share the profits thereof between them (Bruneian Contract Act, article 192). The difference in the name given to the contract underlying a firm is traced back to the fact that Brunei Darussalam applies two legal systems; Islamic law and English common law (Constitution of Brunei Darussalam 1959, article 3 (4); Application of Laws Act, article 2). In Bruneian law, partners are free to agree on how to distribute profit and loss among them (Bruneian Contract Act, article 206). Thus, rulings declared by SB with regard to the profit and liability of the partners of *mushārakah* and *muḍārabah* mentioned above are applicable. In parallel with the values of Islam, partners, by law, are bound to be just and faithful to each other (Bruneian Contract Act, article 210).

SB suggested that the *mushārakah* and *muḍārabah* capital should be in the hands of a Muslim partner (Rani et al., 2020). Thus, IBs themselves would be responsible for managing the capital as specified by the two contracts. This greatly enhances the chance of commitment to Islamic principles of business, thus, promoting the legitimacy of the ownership and wealth while using capital.

As to the BBA (sale of property with deferred payment), designed for investment deposit, SB recognized the parties' freedom to circulate and own the property. The bank sells an asset to the customer with prompt payment of the price, and, accordingly, grants the right to immediate price while the customer enjoys the ownership of the asset. Then, the customer resells the same asset to the bank on deferred payment giving the former a right to price and profit, whilst the letter re-owns the asset (Rani et al., 2020). The rights of the parties mentioned above are the same as the ones stipulated by the law for the ordinary sale which gives the buyer and the seller the right to property in goods and price respectively (Bruneian Contract Law, article 4).

To make the terms and conditions of the two contracts clear and explicit and avoid any mix-up over them leading to disagreement between the parties, SB requires that the two contracts be separated (Rani et al 2020). This concurs with the *Ḥadīth* that the Prophet Muḥammad (ﷺ) prohibited one sale in one (Tirmithi, 1996). This also goes in the direction of Bruneian law which requires the meaning of the contract to be certain or capable to be certain, otherwise the contract shall be void (Bruneian Contract law, article 30).

With regards to *wakālah* products, the bank acts on behalf of the customer in dealing with the money deposited (Rani et al, 2020). It is free to use the money deposited for any investment project and transact with any third parties as long the dealings do not contradict Shariah (BIBD *Wakalah* Terms and Conditions of Deposit Products, section 2.3). This would widen the opportunities for the circulation of wealth. It also has a

[6] The English common law which is part of the Bruneian legal system, considers the relationship between the bank and customer as that of debtor and creditor relationship and not an agent and principal and nor trustee and beneficiary relationships. Accordingly, money deposited to the bank by the customer ceases altogether to be the money of the customer and, thus, the former is entitled to deal with it as his own, make what profit of it he can, which profit he retains to himself, paying back only the principal. See (Foley v Hill, 1848).

[7] *Mushārakah* is a profit-loss sharing partnership, while *muḍārabah* is a kind of partnership in profit whereby one party provides capital (*rab al-māl*) and the other party provide labor (*muḍārib*) (Rani et al, 2020).

right to *wakālah* fees deducted from the profit against its work. Moreover, it is entitled to any sum amount out of the profit that exceeds the customer's expected rate of return (Rani et al, 2020). Contrary to the freedom of the customer to contract, the bank, holding a stronger bargaining position, may terminate the *wakālah* without assigning any reason to the customer (BIBD *Wakālah* Terms and Conditions, section 18.2).

Conforming to the legal concept of deposit, the customer has the right to recover the sum amount equivalent to the deposited funds and the expected rate of profit after deducing the *wakālah* fees (Rani et al, 2020).[8] From a legal perspective, *wakālah* is equivalent to the agency contract.[9]

The SB assented to the measures protecting the property of the parties. To protect the ownership of the bank, the bank may suspend an account opened under *wakālah* contract if the document or information required for the contract is not provided within the period prescribed by the bank (BIBD *Wakalah* Terms and Conditions of Deposit Products, section, 25. 2 (I). This matches with Bruneian law which regards the defaults of one party as a justification for not performing the other party's obligation in reciprocal contracts and the principle of reciprocity established by the verse '' If you were to retaliate, retaliate to the same degree as the injury done to you. But if you resort to patience, it is better for the patient'' and others (Bruneian law of Contract, article 55; *Surat al-Naḥl*, 16: 126).

For the protection of the customer's property, the bank should only rely on the customer's specimen signature in effecting transactions on the customer's account to prevent an unauthorized person from dealing with the customer's deposits (BIBD Wakalah Terms and Conditions of Deposit Products, Section, 1.7.). Again, this goes along with the Bruneian law of evidence which deems a statement in a document to be made by a person if such person has signed on it and, thereby, it may be admissible evidence for, or against that person (Bruneian Law of Evidence, article 73 (A) (4)).

Giving a boost to the circulation, ownership, and clarification of wealth, the bank offers customers various options to deposit and withdraw money, or cheques and transfer money. IBs established a number of branches distributed over various areas of the country for in-person dealings. They also installed cash deposit machines, cheque deposit machines operating 24 hours, and automatic teller machines (ATM) (Find ATM / Branch | Bank Islam Brunei Darussalam, 2022). The services provided by the ATM include account balance checks, cash withdrawals, bill payments, and money transfers from one account to another in Brunei Darussalam (Find ATM / Branch | Bank Islam Brunei Darussalam, 2022) (BBD Wakalah Terms and Conditions, section no.5.3). These services can also be conducted via a mobile application and an internet banking account which can also transfer money worldwide (BIBD NEXGEN Online | Bank Islam Brunei Darussalam, 2022). However, SB did not assent to the freedom of the bank to enter a deal with conventional insurance companies and other companies practicing Shariah non-compliance business under the bill payment facilities. The reason for this is that such agreements would amount to assistance or contribution to obtaining illegitimate wealth. Nevertheless, the payer is allowed to deposit the amount of payment into the abovementioned companies directly into their account at the Islamic bank (Rani et al, 2020).

Correspondingly, SB acknowledged the use of debit cards under *wakālah bi al-ujrah* (paid agency) (Rani et al., 2020). Within this concept, the bank represents the customer in paying any price owed to a merchant via deduction of the latter's available account balance. It deserves fees/charges for this task and any attached service such as ATM cash withdrawal on the condition that the customer receives a reasonable notification of these fees/charges to make the deal explicit (BIBD Debit Mastercard Terms and Condition, section, 9.1.). The customer is allowed to use the debit card within the spending limit and without exceeding the account balance as the customer's ownership ends when the bank's ownership begins (BIBD Debit Mastercard Terms and Conditions, sections, 4.2 and 7.2).

SB accepted certain rules leading to protecting the rights of the bank and customers for the debit card facility. For the former, the bank is authorized to cancel the debit card if the customer does not collect it within 30 days from the date the cardholder has been notified to collect the card. This discards the hanging liability placed upon the bank and the cost resulting from keeping the card in its possession. In the same manner, the bank is allowed to cease transactions if the account balance of the cardholder is inadequate, or the cardholder's account is closed (BIBD Debit Mastercard Terms and Conditions, Section 14.1). It also reserves the right to

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[8] According to article 2 (3) of the Bruneian Islamic Banking Order 2006, deposit denotes to any sum received by the bank on the condition that it will be repaid with or without interest.

[9] The Act does not define the word ''agency'' per see. However, it defines the parties involved in the agency contract. An "agent" is a person employed to do any act for another or to represent another in dealings with third persons while the principal is the person for whom such act is done, or who is so represented (Bruneian Contract Act, article 135).

withdraw the service without notice to the cardholder in the same cases and others such as breach of any material terms and conditions and default of payment of any other financing facility granted by the bank (BIBD Debit Mastercard Terms and Condition, Section 17.1). This is to avoid any probable overdrawn, loss, or criminal liability. In the legal sense, these actions are justified since, as previously mentioned, failing to perform a contractual duty by one party is a sufficient excuse for not performing the opposite duty imposed on the other party in a reciprocal contract.

For the latter, SB places a particular process aiming at proving the identity of the cardholder and averting fraud and impersonation. On this point, the customer shall sign at the back of the card upon receiving their card (BIBD Debit Mastercard Terms and Conditions, Section 3.1). The bank, in turn, shall provide the customer with a personal identification number (PIN) to avail of certain services related to the usage of the card, and a secure code to be sent via a short message to the customer's mobile phone number registered with the bank for purpose of online shopping (BIBD *Wakalah* Terms and Conditions of Deposit Products, section 5.3) (BIBD Debit Mastercard Contactless | Bank Islam Brunei Darussalam, 2022). This code can only be used once (BIBD Debit Mastercard Terms and Conditions, section 1.1). Furthermore, the bank may request the customer to provide their personal information and any document if deems necessary (BIBD Debit Mastercard Terms and Condition, Section 17.1 (g). On top of that, the bank is permitted to reject or suspend any transaction suspected to be fraudulent, and block or limit the usage of the card at any ATM that the bank deems unsecured and/ or does not meet the security standards (BIBD Debit Mastercard Terms and Condition, sections 10.4 and 14.1 (b). These arrangements meet with Bruneian law in two ways. In one way, they go side by side with the duty of the agent (the bank) to use all reasonable diligence in communicating with his principal (customer) and in seeking to obtain his instructions (Bruneian Contracts Act, article 167). In another way, they promote the duty of secrecy dropping on the bank (Bruneian Islamic Banking Order 2008, 58 (1)).

Just like *wakālah* deposit product, the bank shall send a monthly statement on all transactions conducted via the debit card during the month. Alternatively, the cardholder may check the updated passbook, IBs internet banking account, or mobile application (BIBD Debit Mastercard Terms and Conditions, sections 8.1 and 8.2). This lies within the legal duty of the agent (bank) to render proper accounts to his principal (customer) on demand (Bruneian Contracts Act, article 166).[10]

Likewise, SB permitted the use of the credit card facility as a method of payment for goods and services within the frame of *qard hassan* (benevolent loan), *kafāllah bi al-māl* (paid guaranty), and *wakālah bil māl* (paid agency) (Rani et al, 2020). Here, the bank obliges to pay the prices of the goods or services bought by the customer within the spending limit, while the latter undertakes to repay the agreed fund at a particular time and date and pay any charges in return for the credit card facility.

Because the credit card facility involves a financial obligation on the part of the cardholder to pay the fund owed, the bank is given several options to protect its rights of ownership if the cardholder defaults. It may debit the cardholder's account, or combine, set off, or consolidate any or all indebtedness on the card account with other accounts (BIBD Credit Card Terms and Conditions, sections 4.5 and 20.1). These options are also conferred by the banking law (Garnett v M'Kewan [1872] LR 8 Ex 10). Alternatively, the bank may withhold the credit card facility as a legal contractual defense pursuant to the principle of reciprocity mentioned above (BIBD Credit Card Terms and Conditions, section, 16.1 (a)).

All the measures arranged to secure the property of the cardholder under the debit card facility mentioned above are also applicable to this facility (BIBD Credit Card Terms and Conditions, sections 2.5, 3.4, 4.9, 12.1, 12.3, 15.1). To defend the rights of both parties on the deposit, the bank is enabled to refuse to give the card to a person other than the cardholder if it thinks that in releasing the card to such person the bank or the cardholder would incur, sustain, or suffer any loss or damages (BIBD Credit Card Terms and Conditions, section 2.7). This behavior goes hand in hand with the reasonable diligence required to be exercised by agents in law. However, the freedom provided for both debit and credit card holders to contract is not without restriction. The bank, unilaterally, may change the terms and conditions of both facilities on the condition that it gives reasonable notification to the cardholder (BIBD Debit Card Terms and Conditions, section 18.9 and Credit Card Terms and Conditions, section 18.1).

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[10] The duty to account is also imposed on the bank under the banking law (Arora, 1993).

4.1.2.2 Protection and promotion of the rights of the bank and customer under financing products

Aside from depositing products, SB respected the freedom of the bank and customers to involve in various financing products. These products include *arrahnu* (Islamic pawnbroking), *mushārakah mutanāqisah* (diminishing partnership), *murābaḥah* (cost plus profit sale), BBA, *tawarruq,* and *al-ijārah thumma al-bay'* (AITAB). The SB went a step further to define the ownership rights of the parties resulting in these products. Because these products, as opposed to depositing products charges the customer with considerable financial responsibility generating credit risk for the bank, the SB requires evidence of the customer's financial ability for providing these products. This includes, for example, the latest salary slip, salary or pension confirmation letter, or service contract.[11]

Regarding Islamic pawnbroking, the customer acquires a right to receive the fund agreed upon by a contract, have the item pawned kept safe during the financing term, and regain possession of the pawned goods once the debt is paid off. The bank as a pawnbroker has a claim to a sum of money equal to the amount of fund, keeps the pawned goods, and the agreed charges for keeping them. For the protection of the rights of the bank, IBs may provide this product on the condition that the total funded amount is less than the market price of the pawned item by 20% (Ar-Rahnu Micro Financing | Bank Islam Brunei Darussalam, 2022). This would guarantee the bank to recover an equal amount of debt.

When a customer's financing period matures, the customer has a right to receive a written notice to clear any outstanding balance. This serves the *maqṣad* of the explicit ownership in the manner that it alerts the customer that the payment of the debt falls due before moving further with redemption or lawsuit. In case of default, the bank is allowed to sell the pawned goods and recover the amount due to it, provided that the customer has consented to do so (Rani et al., 2020).

In relation to house financing, SB stated the rights of the bank and customer during the *mushārakah mutanāqisah* agreement. Both parties share the ownership of a house under construction according to the ratio stipulated by *mushārakah* contract. The customer is given the right to monitor the construction of the property and authorized to pay for maintenance of the house by way of *wakālah* (agency) contract. The bank is granted a right to a monthly rent including the price of the bank's share of the property upon leasing it to the customer via a contract of *ijārah* (lease) and *bay' bi thaman `ājil* deferred payment sale. The customer possesses the whole house immediately after the payment of the whole share in view of the latter contract (Home Financing | Bank Islam Brunei Darussalam, 2022).

Targeting the *maqṣad* of explicit ownership, the bank requires the customer to submit the land title deed, house plan, and sale and purchase agreement between the customer and the owner of the property (Home Financing | Bank Islam Brunei Darussalam, 2022). This makes the subject matter of the contract clearly known to the bank and lends certainty to the contract as required by the law (Bruneian Contracts Act, article 30).

As for the BBA, it can also be directed to finance the customers whereby the bank acquires ownership of an asset sold by a third party upon the customer's request and then, resells the same asset to the customer for a deferred price who finally retransfers the property to the bank against the customer's right over a spot price (Rani et al., 2020). The SB make it clear that if the subject matter of the contract is land, the financing application should be in harmony with the Bruneian land code (Rani et al., 2022). Thus, the seller should prepare a memorandum of transfer (form D) which should be registered at the competent land office and witnessed by a land officer or magistrate (Bruneian Land Code Article 8, 9 (1), 23 (1)). This procedure serves as legal protection to the ownership of whoever party buys the land and is regarded as a notice to the public of the existence of the ownership rights over the land in compliance with the *maqṣad* of explicit ownership.

For *murābaḥah* (cost plus profit sale) contract, the customer involves in a BBA transaction with the initial intention to acquire the property. This intention shall be expressed in a written application describing the property required in detail to make it clear. Upon acceptance of the application, the bank issues a letter of credit guaranteeing the payment of the price and then transfers a sum amount equal to the price usually to a negotiating bank to conduct the payment. After receiving the property, the bank resells the property to the customer giving them a right to a property conforming to the agreed one, while the bank obtains a right to a price consisting of the property cost and profit to be paid in full during a specific term (Rani et al, 2020). To guarantee the customers' duty toward the bank to pay the price, the bank requires the customer to deposit an amount equal to the price before the issuance of a letter of credit (Trade Financing | Bank Islam Brunei Darussalam, 2022). In practice, the bank appoints the buyer/applicant as an agent to conclude the contract by himself. Hence, the

[11] Exception is made to students applying for education financing and short-term financing up to 6 months under *arrahnu*-micro financing. See for example home financing (Home Financing | Bank Islam Brunei Darussalam, 2022).

customer takes the responsibility for obtaining conforming goods by themselves and not the bank (Trade Financing | Bank Islam Brunei Darussalam, 2022). It goes without saying that the customer becomes acquainted with the price, description, and condition of the goods on his own. This serves the purpose of the disclosure imposed on the bank under the principle of *amānah* (trustworthiness) and puts an end to any probable dispute between the bank and the customer on the goods purchased.[12]

With regards to *tawarruq*, the customer may involve in BBA with an intention to acquire liquidity. Here, the bank acts as an agent to sell the asset to another merchant at a cost price in exchange for agency fees on the grounds of the *wakālah* contract. Subsequently, the bank credit sum amounts equal to this cost price to the customer's account and, consequently, the customer owns it (Rani et al, 2020). In practice, the IB gives the customer the option to perform the contract either in a telephone call or in person (BIBD *Tawarruq* Transaction Terms and Conditions of Sale, section 7). The bank also undertakes to provide the customer with a confirmation notice attached to the contract. The significance of this confirmation notice is that it shows the particulars of the facility offered to a specific customer, for instance, the exact amount of the price for explicit ownership (BIBD *Tawarruq* Transaction Terms and Conditions of Sale, section 9).

Concerning AITAB, the parties may opt to lease a property bought by the bank to the customer for a specific period and then, sell it to the customer after the termination of the lease contract instead of selling it directly to the customer once received from the third party. Therein, the bank deserves a monthly rent during the lease period whilst the customer is entitled to *manfaʿah* (usufruct) over the property and gain full ownership by another contract of sale. Like BBA, the latter contract of sale should be separate from the former contract (the lease contract). In law, AITAB is equated with the hire-purchase agreement (Bruneian Hire- Purchase Order 2006, article 2 (1)). However, the latter usually imposes interest on overdue rentals.

For the protection of the wealth of the bank, the bank may require the customer to promise to buy the property in due course. The promise (*waʿad*) shall be part and parcel of the initial contract of lease (Rani, et al.2020). This protects the bank from any attempt to renege on the commitment to buy the property by the customer. According to law, this promise shall take legal effect and the separate sale seems to be a contingent contract.[13]

The SB assent to several mechanisms providing a shield for the rights of the bank against the breach of the customer. One mechanism is that the bank may incorporate a term into the contract stipulating that if the customer fails to pay one or more monthly installment (s) or any fees or charges, or the customer becomes unable to pay any of them, all installments shall turn out to be payable in full immediately (BIBD *Tawarruq* Transaction Terms and Conditions of Sale, section 11) (Rani et al, 2020).

Another mechanism is that the bank may merge or consolidate any of the customer's accounts held to the bank against any liabilities or indebtedness owing to the bank, and the bank may set off or transfer any sum standing to the credit of all or any such account(s) towards the satisfaction of any of the customer's liabilities to the bank (BIBD Tawarruq Terms and Conditions of Sale, section 13) (Rani et al, 2020). A further mechanism is that the bank may require the customer to execute or cause to execute a security document which shall remain payable to the bank as long the price fully or partly is not paid by the customer (BIBD *Tawarruq* Terms and Conditions of Sale, section 5). One more mechanism is that the bank may refrain from delivering the asset bought to the customer until the price is fully paid (Rani et al, 2020).

Aside from these defense mechanisms, SB endorsed the right of the bank to be indemnified for actual financial loss due to the customer's default in payment of the debt through *taʿwīḍ* (compensation) clause (Rani et al, 2020). It applies to any financing products mentioned above. The compensation shall also cover any fees incurred by the bank to afford the facility such as takaful (insurance) contributions, the bank's processing fees, and stamp duty together with the fees required to enforce or protect the bank's rights such as the court fees (*Tawarruq* Terms and Conditions of Sale, section 14 (a) and (b)) (Rani et al, 2020). *Taʿwīd* clause is valid according to Bruneian law (Bruneian Contract Act, article 75).

The SB also recognizes the compensation made to recover the loss or damage that occurred against the customer by reason of the bank's misconduct, negligence, or breach of terms and conditions caused in the

[12] For the duty of disclosure is included in the definition of *murābaḥah* (Rani et al, 2020).

[13] Article 32 of the Bruneian contracts Act defines the contingent contract as a contract to do or not to do something, if some event, collateral to such contract, does or does not happen. In AITAB, the contract of sale can be concluded only if the lease contract is terminated.

course of *wakālah* and *tawarruq* (BIBD Wakalah Transaction Terms and Conditions, section 2.2; BIBD Tawarruq Transaction Terms and Conditions of Sale, section 3 (e)). SB, go further, to agree with the right of the bank to publish the names of the defaulters in the newspaper as a penalty (Rani et al, 2020). In support of *maqṣad* of the explicit wealth, the bank can enforce these rights on the condition that it notifies the customer of the delay of payment (Rani et al, 2020). Again, the purpose of this notification is to warn the customer and press them to make the payment before instituting a claim against them.

4.2 Protection and promotion of the rights of the community

Apart from the rights of the bank and the customer, SB maintained the rights of the public over banking transactions for the sake of *maqṣad* of legitimate wealth. The public authorities whether they are police, public officers, or a court should be informed of any information relevant to the customer's deposit account, card account, or the cardholder's transactions upon request from such authority whenever this information is required for the purpose of investigation in relation to any offense or law enforcement (BIBD *Wakalah* Terms and Conditions of Deposit Products, section 25.1; BIBD Credit Card Terms and Conditions, section 19.1). Customer information may also concern the credit bureau for the purpose of preparing the self-inquiry report. Similarly, the Bruneian banking law affirms the same right (Bruneian Banking Order 2006, article 58 (2)).

Importantly, IBs are bound to pay zakat to the poor and needy and take charge of overseeing the computation and distribution of it (BIBD Annual Report 2020). This is in tune with the legal liability imposed on Muslim people including those who carry on an enterprise, like banks, to pay zakat (Religious Council and Kadis Courts, article 116. Article 236 (1)).[14] Failure to do so will result in a penalty of a fine not exceeding $8,000, imprisonment for a term not exceeding 2 years, or both (Syariah Penal Code Order 2013, article 236 (1)).

Moreover, SB honors the sovereignty of the state of Brunei Darussalam. In this sense, it admitted the right of the state to control the banking business by means of rules and regulations for the *muṣlaḥah ʿāmmah* (Rani et al, 2020). Hence, laws such as company law and Islamic banking law should have a legal effect on private commercial activities in submission to the principle of the rule of law. Additionally, SB gives superiority to the laws of Brunei Darussalam over the agreement of the parties. Thus, it is of the view that terms and conditions should be governed and construed in accordance with the laws of Brunei Darussalam. It also closes the door against the bank as well as the customer from conducting illegitimate business. For example, according to the SB, IBs shall restrict the credit card to items that are not in violation of the Shariah penal law. By way of illustration, credit card facilities cannot be used for buying liquor, dating and escorting, and massage parlors under the codes 5921, 7273, and 7294, sequentially (Rani et al, 2020).[15] For this reason, IBs will terminate this facility in the event the cardholder uses the card for such purposes (BIBD Credit Card Terms and Conditions, section 3.1). Such termination shall not absolve the cardholder from his liabilities and obligations towards the Bank (BIBD Credit Card Terms and Conditions, section 3.2). This seems to be reasonable action for the contract to be void in law (Bruneian Law of Contract Act, article 25). Another example is that liquid obtained by way of *tawarruq* by the customer cannot be used for such purposes (BIBD *tawarruq* Terms and Conditions of Sale, section 23).

Aside from the above-mentioned, SB admit the Bruneian court's jurisdiction over any dispute between the parties about the contract and their decisions. The same goes for the public official instructions/directions on banking products. Thus, the bank shall suspend any account in obedience to such decisions or instructions/directions (BIBD *Wakalah* Terms and Conditions of Deposit Products, sections 24.2 and 25.2 (ii); BIBD *Tawarruq* Terms and Conditions of Sale, section 25).

5. Conclusion

It can be concluded from the discussion above, that the SB in Brunei Darussalam significantly ensures the rights of the bank, customers, and community as prescribed by law. From a legal angle, the rights and the methods protecting and promoting them stated by the SB are in line with the Bruneian law with exceptions to the barrier it set on the liberty of the bank to deal with the conventional financial sector under bill payment facility. This is sensible given the fact that SB shall promote Shariah-compatible property for the *maqṣad* of legitimate wealth.

[14] This liability applies also to Islamic banks (Islamic banking order 2008, article 24 (1) (b)).

[15] The said goods or services are against articles 104 (4), 196 (1) and 68 (1) of the Bruneian Syariah Penal Code 2013.

Similarly, the SB made considerable effort to attain *maqāṣid* al-Shariah. For *maqṣad* of circulation of wealth and establishment of ownership, it permits the bank, and the customer to exchange wealth under various bilateral agreements and enjoy the consequential title without prejudice to the *maqṣad* of legitimate wealth. The *maqṣad* of explicit wealth appears on actions requiring the parties to specify the contract particulars, keep and show records of transactions, and notify the customer of the due time of performance. The *maqṣad* of protection of wealth underlies the methods of keeping the communication between the bank and customer secret as well as the remedies provided for the former. The *maqṣad* of legitimate wealth is evident in the utmost respect given to both Shariah principles and laws of the country. However, the relationship between the bank and the customer, being an adhesion contract, tilts the balance of power between the two parties in favor of the bank. This is evident in the sole rights of the bank to terminate *wakalah* and to change the terms and conditions of the debit and credit card facilities. This deviates IBs from the *maqāṣid* of circulation and ownership of the wealth.

The paper is based on the opinions expressly or impliedly revealed in the documented resolutions of SB and the terms and conditions of the products. Thus, future research can dig beyond the theoretical angle to investigate the role of SB in practice by following the empirical method. The research could also be potentially extended to other countries.

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Digital Mutual Stimulation Theory for Strengthening Islamic Finance in China

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Abstract

Central Bank Digital Currencies (CBDCs) represent a very important innovation in the digital and payment space affecting the participants in the global financial services industry. A CBDC is an innovation and is a digital payment instrument that is denominated in the national unit of the account. Islamic finance has similarly experienced significant growth in the last several decades, but challenges remain in terms of transaction processing speed and cost. Given the significant opportunities of central bank digital currencies in reducing transaction costs, and increasing transaction speed, the interrelationship between the promotion of Islamic finance and CBDCs is of significant interest. The conceptualized theory digital mutual stimulation outlines the growing relationship between the strengthening of Islamic finance and the utilization of the digital yuan. Specifically, the theory provides an outline that the ease in the conduct of transactions, as well as reduction in transaction cost and greater democratization will significantly strengthen the provisioning of Islamic financial products. The article utilizes a grounded theory approach integrating empirical research data from interviews and surveys. The digital nature of the digital yuan acts as a stimulus for smart contract execution and reduces the need for an intermediary as well as increases trusts between the contracting parties. This becomes especially important for international trade and transfers, as well as for asset purchases. Given the connection in Islamic finance between financing and real assets, the digital Yuan can play an important role in strengthening this interconnection and support Islamic finance in China and beyond.

Keywords: *Digital mutual stimulation theory, Islamic finance, Central bank digital currencies, Economic growth, Grounded theory*

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1. Introduction

Central Bank Digital Currencies (CBDCs) represent a very important innovation in the digital and payment space affecting the participants in the global financial services industry. A CBDC is a new innovation and a digital payment instrument that is denominated in the national unit of the of the account. This is a direct liability for the Central Bank. This represents the legal tender that is issued by the Central Bank in a digital form. This shall represent a medium of exchange, store of value and represent a unit of account. The CDBC is a fiat currency that is issued in a digital form and amounts to the same value as the fiat currency (Auer et al., 2022).

Commercial banks and financial institutions are permitted to hold reserves of the central bank money, and the retail public can hold the money issued by central bank in the form of physical banknotes. This enables CBDC to be widely used by wholesale institutions, households, and businesses as a storage of value and to execute secure payments. This helps in streamlining and maintaining a Central Banks' function of money provisioning, financial stability and ensuring continued access to the digital economy. Table 1 provides an overview of the CBDCs, cash and alternative private currencies.

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Table 1: Comparison of CBDCs with physical cash and alternate private currency

Aspect	CBDCs	Cash	Alternate private currency
Issuing Authority	Issued and backed by a central monetary authority	Issued and backed by a central monetary authority	Privately owned, governed by algorithms
Form	Electronic/Digital	Paper/Physical	Electronic/Digital
Guarantee	Issued by the Central Bank as their liability	Issued by the Central Bank as their liability	Privately issued
Payment acceptance	Legal Tender	Legal Tender	Limited acceptance
Know Your Customer (KYC)	Required in most cases	Transfer doesn't require KYC	May not be required Anonymity is high
Structure	Centralized or permissioned decentralization	Centralized issue	Decentralized
Risk	Very low market, counterparty, liquidity risk	Very low market, counterparty, liquidity risk	Relatively medium to very high market, counterparty, liquidity risk

Source: Yu (2022)

There has been a global drive for faster payments, greater digitization, improved mitigation for clearing and settlement risk. Finally, there is significant demand for efficient domestic and cross-border value transfers in addition to financial inclusion. This has necessitated the increased focus on the exploration of a digital version of the fiat currency. Besides the leverage of CBDCs to enhance monetary and fiscal policies, there are four key drivers for Central Banks to evaluate CBDCs (Belke and Beretta, 2020).

The first driver is the need to ensure that Central Banks are the primary currency creators and provide trust into their currencies. Central Banks face the challenge that new forms of digital money and the utility of non-fiat cryptocurrencies may pose challenges to conventional fiat currencies. This implies a need to provide the public with digital currencies that provide similar benefits as any alternative private currencies but avoid any economic repercussions arising from the provisioning (Agur et al., 2022).

The second main driver is that CBDCs may deliver efficiencies in the financial system. This is because the CBDCs are executed in real-time and represent the final gross amount. The real-time and final execution helps in reducing any settlement risks in the financial system and both interbank settlement and reconciliation is not anymore needed. Additionally, the digital currencies may allow for real-time and cost-effective globalization of payment systems given that different time zones are no longer an impediment (Herstatt risk). Additionally, CBDCs may provide programmable money that can enable atomic transactions (Agur et al., 2022; Allen et al., 2022). Atomic transactions represent a transfer of CBDCs against another asset, where the transaction is contingent on that the asset is transferred in real-time. This may enable Payment versus Payment (PvP) for cross-currency transactions, as well as Delivery versus Payment (DvP) for where the asset may be a physical or financial asset. Utilizing cash can cost more than 0.5 % of the GDP for developed nations, while even increasing to up to 1.7 % for countries such as India. This cost is born by households, businesses, banks, and the Central Bank, and is not including any cost related to the environment, social and governance factors of printing money (Agur et al., 2022). CBDCs can increase the efficiency of clearing and settlements, as well as post-market activities. Currently, there may be a multi-day lag in the security clearing and settlement process. Hence, a digital currency could reduce this to an instantaneous transaction.

The third key driver is the improvement of financial access and financial inclusion. Many nations face the challenge that financial participation of a significant amount of the population is relatively limited, and CBDCs may provide an opportunity to achieve greater financial inclusion. This results from the reduction of intermediaries as well as physical boundaries. Nevertheless, there may be technological challenges and cost related to a digital currency that may keep some individuals outside financial system (Barrdear and Kumhof, 2021).

The final driver is the enhancement of monetary and fiscal policy. These CBDCs offer high efficiency solutions to the problem of the cost of remittances. The transfer of remittances plays a key role for many countries, and costs associated with the transfer can be significant. Furthermore, this allows to broaden the financial inclusion of individuals (Náñez Alonso et al., 2021).

The CBDC can improve the monetary policies for Central Banks and the architecture and structure may enable seamless and transparent distribution of government benefits. This may significantly enhance the control of the transactions and support the financial stability. Liquidity squeezes may represent significant challenges to banking institutions and cause potentially bank runs. CBDCs may provide significant opportunities for identifying theft risk. The digital trail enhances traceability and enhancing the security of the transaction. Furthermore, the central banks may also protect the purchasing power of money via an indexation scheme. For example, the nominal value of a holding of CBDCs can be incentivized during periods of higher inflation, and this provides a more targeted approach to fighting inflation. Another key aspect is that the central banks can collect more granular payment flow data, which may enable to gather macroeconomic data with higher integrity and better analytics. Commercial adoption may be increased by the adoption of a large economy, and this may even assist with the large-scale roll out of the CBDCs (Chorzempa, 2021).

There have been several initiatives across the world to utilize CBDCs and countries such as China, Cambodia and Bahamas that have implemented their CBDCs. Table 2 provides a summary of the CBDC currently in implementation in China, Bahamas, Cambodia, Eastern Caribbean and Nigeria. The implementation in China is by far the most advanced with several pilots having been completed in both 2021 and 2022. Several other countries, such as Cambodia, Bahamas, Eastern Caribbean and Nigeria have launched their own CBDCs (Chorzempa, 2021).

Table 2: Summary overview about selected CBDC implementations

	Description	CBDC Form and Access Technology	Issuance and Distribution of Currency
China	The project was initiated in 2014 with intention to enhance the retail payment system. Pilot has been launched in 2021.	Aimed towards retail based leveraging account-based technology for circulation	E-CNY follows a centralized approach with the Central Bank issuing the CBDC, while commercial banks are responsible for distributing it to general public
Cambodia	Project Bakong has been sponsored by the National Bank of Cambodia with the goal to improve financial inclusion reach rural unbanked population	Retail based CBDC leveraging DLT on a hyper ledger platform	The currency is issued by the Central Bank and 16 banks are currently supported through the system and 10,000+ users adopting it, with a retails throughput of 2000 transactions/ second
Bahamas	Central Bank of Bahamas launched its digital currency Sand Dollar for financial inclusion and interoperability of payments	Retail based CBDC leveraging DLT	While the currency will be issued by the Central Bank, banks, credit unions, PSPs or MTBs can circulate it to customers. Customer can also download the application to make transfers
Eastern Caribbean	Eastern Caribbean launched its CBDC involving 4 of the 8 member countries to reduce cost of transaction and make transactions possible to individuals without bank accounts	Retail based CBDC leveraging DLT	Dcash will be issued to Eastern Central Caribbean Bank (ECCB) and will be distributed by licensed banks and non-banks in the region
Nigeria	Central Bank of Nigeria launched its digital currency, eNaira, to facilitate financial inclusion, ease remittances, promote traceability and promote inclusion and security, among others	Retail based CBDC leveraging DLT	CBN will issue eNaira and the financial institutions will act as intermediaries between CBN and customers

Source: Yu (2022)

There are several major projects that are currently ongoing and there are several additional initiatives that aim to develop CBDCs with India starting its efforts to develop its own CBDCs. The Singaporean project Ubin represents a collaborative project between different industry bodies and incorporated a multi-phase approach. Each phase provides a solution to address some of the industry challenges. The first two phases addressed domestic payments and building the technologies for the support of the CBDCs. The next two phases focused on the interoperability of network and the cross-border facilities. The final phase of project focused on the development of a common platform to achieve greater efficiencies in payment systems and conduct faster and quicker transactions. The focus was on utilizing blockchain technology to solve existing payment challenges and may be utilized for international, multi-country and multi-currency settlements (Nabilou, 2020).

This implies that both the Monetary Authority of Singapore (MAS) and Bank of Canada (BOC) linked their networks to demonstrate how CBDCs can reduce pre-existing settlement risk in cross-border, cross-currency transactions. This is achieved via the synchronization of payment actions where the third-party platform is irrelevant. An expansion was conducted in 2020, where several digital currencies were investigated in terms of how they could be issued and transacted on a single platform. The solution was to utilize a distributed ledger technology for a multi-currency payment network to enhance commercial cross-border clearing and settlements globally. The project Partior, which is a joint venture between DBS Bank, JP Morgan and Temasek, is based on a digitized commercial bank money to facilitate this initiative (Nabilou, 2020).

Cambodia launched the project Bakong that aims at reducing its dependency on the USD Dollar. The project is adopted by more than 18 financial institutions and provides a legacy payment solution. Specifically, more than 5.9 million users were onboarded in the first year and conducted more than 1 million transactions with a total value of 500 million USD. The objective is to ease cross-border transactions to lower the transaction cost and provide instant settlement. This eliminates the dependency on a bank account as funds are directly transferred to the Bakong wallet. Bakong wallet also utilizes a leveraged blockchain technology for the setup of the platform (Kumhof and Noone, 2021).

China was a primary adopter of the CBDCs already back in 2014 where they set up a task force to investigate the digital fiat currency. 2016 led to the establishment of a first prototype and by 2017 several financial institutions were involved in testing the fiat currency. The pilot has been initiated in several regions to evaluate the performance of the digital currency. The objective is to utilize it for retail customers and leverage account-based hybrid payment instruments. The central bank issues the digital currency to the financial institutions and manages it throughout the lifecycle. This represents a centralized management model with a two-tier operational system (Kumhof and Noone, 2021).

Japan conducted a study, called project Stella, for assessing the applicability of a distributed ledger technology solution for the cross-border payment system. The study was conducted jointly with the European Central Bank in two phases, where the first focused on operations within the DLT environment, and the second explored opportunities for the operation and design of a security settlement framework. While the reports were published by 2018, there has been little progress by the central bank of Japan in the development of a CBDC. A critical focus of the bank was on offline CBDCs that were explored on basic feature phones in addition to smartphones. The five readiness criteria included the storing of monetary value, communication between users, verification of the transaction and ability to provide payment instructions. Finally, the offline feature requires the transfer to be conducted without access to the internet. One of the major concerns by the central bank was the security issues and avoiding double transactions by the users. There have been Offline Payment System (OPS) protocols that prevent such double transactions utilizing a trusted execution environment, which can be both used on a basic feature phone and smartphone (Kumhof and Noone, 2021).

The Reserve Bank of India (RBI) made the announcement of introducing CBDC in a phased approach, and the investigation revolved around several factors such as security, impact on financial institutions, monetary policy, and currency in circulation (Mohamed, 2020). During the design and implementation of CBDCs, there are several key decisions that must be evaluated during different stages. These stages relate to technology, access, privacy, and the distribution model. The CBDCs require the formation of payment infrastructure to cover aspects from the database based on which the CBDCs are recorded. This requires that the point-of-sale devices and applications have to be properly formed. From a regulatory point of view, the underlying technology and access has to be investigated in greater detail (Altwijry et al., 2021). Many CBDCs focus on a distributed ledger technology, but in many instances, such as in China, a centrally controlled database approach may be more feasible. A distributed form may be able to incorporate several useful innovations and

functionalities, which includes decentralized and the use of smart contracts. Challenges arise from the adoption of these features; regulatory trade-offs have to be investigated wisely. Most commonly, a central ledger is utilized that can store the data in different physical nodes but is controlled by a trusted administrator (Cunha et al., 2021).

New developments in Web 3.0 and decentralized finance (DeFi) may also produce interesting and important developments. Web 3.0 supports the facilitation of users to conduct financial transactions directly with others utilizing a smart contract. The lack of an intermediary brings several benefits, such as greater inclusion and easier access and cost reductions (Ahmed et al., 2022). A critical choice is whether the central bank shall adopt a token-based or account-based approach. For token-based structures, the distribution of the currency will involve the transfer of an object of value from one wallet to another. This ensures that the transaction is approved by the originator and the beneficiary based on digital signatures and public-private key pairs. The advantage of the system is that it provides significant level of privacy but makes the prevention of money laundering and fraudulent transactions a challenge. Furthermore, the customers are required to remember their access keys as otherwise they will lose access to their funds (Cunha et al., 2021).

In contrast, account-based CBDC involve the transfer from one account to another and the model ensures that the transaction is verified based on the verification of the user identities. This requires that the central bank has an account for every user (Fantacci and Gobbi, 2021). Another critical challenge is the choice between a retail CBDC and wholesale CBDC. Generally, token-based approaches have been preferred by regulators for cross-border transactions, where both entities solely need to have a wallet that facilitates the transaction. Furthermore, it helps in terms of financial inclusion as solely an internet connection is required to complete the payment. Furthermore, a token-based approach enables to achieve high anonymity. For regulator this poses challenges as transactions can be monitored only on a limited basis, and there is limited degree of involvement in the end-to-end process (Fantacci and Gobbi, 2021).

Retail-based CBDC focuses on the issue of households that have financial inclusion at its core as the main benefits. Furthermore, it strengthens to shift a cashless economy and reduces overall the cost of printing and management. The indirect retail CBDCs leads to a direct issuance of the digital currency by the financial institutions and those are responsible for backing the issued money. This also leads to the responsibility for sending payment messages to other financial institutions and convey the payment instructions to the central bank for the settlement of these payments (Fantacci and Gobbi, 2021).

The alternative direct retail CBDC model implies that the individuals and businesses hold the digital currencies in private accounts at the central bank. This eliminates the intermediaries but also affects the structure of the current financial system and increases the role and responsibilities of the central bank (Opare and Kim, 2020). In contrast to retail based CBDS, wholesale CBDCs are used for interbank transactions for the payments between financial institutions. This covers the settlement of cross-border payments and improves the settlement efficiency, security and generally reduces the risk related to credit and settlement (Opare and Kim, 2020). The decision of the approach requires an evaluation of the macro-economic conditions and the payment maturity of the region. For financial inclusion, a retail-based approach may be the best approach. In case there is already a Faster Payment System (FPS), then introducing another retail-based payment system may not be a good solution. Conventional CBDC may be either interest-bearing or non-interest bearing. For Islamic finance applications, such interest bearing is entirely forbidden, and digital currencies can only be non-interest bearing (Kosse and Mattei, 2022).

When focusing on the issuance and circulation, there are single-tier and two-tier models. In a single-tier model the central bank distributes the CBDCs and requires a scale-up in the manpower and infrastructure to support this ecosystem. In a two-tiered approach, the central bank issues the digital currency, but the financial institutions are still charged with the distribution (Kosse and Mattei, 2022). For a single tier approach, the central bank has full visibility on the data for every payment, and there are serious implications on financial services institutions. Their deposits would decrease significantly. Such a single-tier approach can be either account or token-deposit. This requires customer-facing infrastructure and deal with the stability risk. In contrast, a token-based approach requires a digital wallet for customers to store currencies (Kosse and Mattei, 2022).

The two-tier approach is similar to the normal distribution of currencies and banks can provide token-based accounts to customers and also enable cross-selling financial products to them. The challenge with a single-tier approach may lead to a move of deposits and account from the financial institutions to the central bank. While

this may help for countries where there are only a few banks available, it may reduce economic growth and reduce competition in conventional and Islamic economies (Kosse and Mattei, 2022).

A central bank may design an ecosystem with various categories of CBDCs wallets. These wallets may have varying transaction, balance, and time limits. The tiered approach has the benefit to prevent any mass withdrawal of bank deposits in the case of stressful conditions and it maintains the economic stability. The design of digital wallets may be implemented in a distributed manner, where the central banks design the rulebook for the development and the use of the wallets. The engagement with a private entity for the provisioning and development of such digital wallets may be rather beneficial and will support the development. These wallets may vary by nature, be it personal, corporate, software and hardware wallets. These CBDCs program shall incorporate a comprehensive risk management framework that define the roles and responsibilities for the identification of risk and management. Furthermore, it establishes a rigid risk tolerance policy and the required controls to mitigate risks (Bian et al., 2021).

The CBDC may lead to a shift of global and domestic economic operation model, and this may significantly affect conventional and Islamic banks, and their profitability as well as operations. The main benefit may be the disruption of existing value transfer paradigms, which may enhance value creation leverage customer data. Specifically, CBDCs may reduce cost, improve service, and reduce settlement risk in addition to fuelling innovation. Additionally, the customer data and spending pattern may provide support and protection for individuals, preventing abuse and fraud. This is a critical element of Islamic finance given the strong focus on trustworthiness (Bian et al., 2021).

The e-CNY plays a critical role in the implementation of a CBDC in China and beyond. The e-CNY is a centralized, cash-like digital currency that shall become a mainstay for retail payments in China (Zheng et al., 2020). There have been several large-scale e-CNY pilot programs in several cities and on multiple e-commerce platforms. The e-CNY is an account-based CBDC form, where the PBOC centralized ledger maintains the information where each issued e-CNY is currently stored. The main objective of the PBOC in introducing the e-CNY are two-fold. The first long-term objective is to create a digital currency that competes with other digital currencies, such as bitcoins, stablecoins and other CBDCs. Furthermore, this shall ensure the renminbi maintains its primary presence in China. Furthermore, the objective is to reshape China's existing payment system via the provisioning of cash-like digital payment methods. This shall be accessible to all, low-cost, anonymous and facilitate the competition among payment service providers. Anonymous in this regard implies that the transaction participants do not share complete information about the wallets of one another. However, the account-based system implies that the central bank maintains an overview of the transactions conducted utilizing the e-CNY (Zheng et al., 2020).

The e-CNY is entirely backed by the PBOC and operationalized via payment service providers. This enables to achieve greater anonymity and better personal information protection but ensures that records are kept for tracing illegal activities. This includes amongst others money laundering and tax evasion. An interesting aspect is that the PBOC has stated that the e-CNY is defined as cash in circulation, or part of the M0 (cash) money supply. The implication of being M0 rather than M1 or M2 has several implications. First, the M0 definition implies that the e-CNY is a direct liability to the PBOC, while M1 and M2 also include liabilities from commercial banks. This implies that the e-CNY is entirely risk free (Knoerich, 2021). Furthermore, the digital wallets that keep the e-CNY are not to be considered bank accounts. Specifically, there is currently only a mobile phone number required for the maintenance of the e-CNY wallet.

Another key point is that the e-CNY does not pay any interest, as no interest is paid on M0 (cash). This contrasts with interest paid on M1 or M2 (bank deposits). This stands in significant contrast other intended digital currencies that have not ruled out interest payments. Finally, the e-CNY can be converted into bank deposits and cashed out only at banks. The main objective of the M0 definition is the prevention of disintermediation of banks. The objective is to avoid the replacement of bank deposits for the e-CNY and the objective is to have a limited number of e-CNY in circulation (Knoerich, 2021).

The e-CNY introduced a two-tier structure where the PBOC is at the top tier and plays a top-level role. For the opening of an e-CNY account/ digital wallet, the user has to approach a second-tier institution. This includes the six largest state-owned banks, and two internet banks. These internet banks are MYBank and WeBank, and the opening can be done both online and offline (Kurien and Geoxavier, 2020). As soon as the e-CNY wallet is setup, the users have access to the services provided by the bank, other banks, and payment services. These 2.5 tier institutions are not e-CNY exchanges but enable to provide payment and other services to e-CNY

holders. The bottom tier consists of merchants, corporates, and consumers. This allows peer-to-peer e-CNY transfers between consumers but most merchants will utilize a tier 2 or tier 2.5 institution to set up the infrastructure to receive these e-CNY payments both online and offline. Therefore, the PBOC shifts the delegation of responsibilities to tier 2 institutions. Tier 2 institutions will provide customer service and protect customer privacy, also enforce the know your customer requirements, and invest in the hard and soft infrastructure for retail e-CNY use. There may be some cost associated with this for tier 2 institutions, but this will be a welcomed alternative to provide better payment services and new opportunities, such as Islamic finance. Another key aspect is that the e-CNY will be more anonymous to avoid that online platforms can easily collect user information, and trace illegal transactions (Kurien and Geoxavier, 2020).

3. Research Questions

The research question revolves around whether the e-CNY has an impact on the provisioning of Islamic finance products and what the impact is going to be. All the research hypotheses are formulated in terms of a null hypothesis, which will be disproven. This assists the solid development of the theory surrounding the impact of the Digital Yuan on Islamic Finance both within China and abroad.
The null hypotheses are outlined below:

1. Individuals are indifferent about whether to use the digital yuan or paper-based currency.
2. There is no positive impact of the digital yuan on the provisioning of the Islamic finance products.
3. Trade between China and Muslim-majority countries has not grown within the last 20 years.
4. The impact of the digital yuan on cross-border trade with Islamic countries will be minimal.
5. There is no change in the ease of access to Islamic finance products
6. Cross-border payments are not affected by the digital yuan

The null hypothesis about whether the digital yuan is attractive to new individuals to use and whether they prefer paper-based currency or the digital yuan. This enables researcher to determine the preferences of individuals and obtain an indication about the general acceptance level of the digital yuan amongst the population. The next hypothesis on the impact between the digital yuan and Islamic financial products aims to demonstrate that there is an impact between the digital yuan and the provisioning of new Islamic financial products in China.

The subsequent hypothesis on the trade relationship between China and Muslim countries has not changed in real terms. If the null hypothesis can be rejected, this implies that the trade relationship between China and Muslim countries has increased within the last 20 years, which justifies stronger engagement between Chinese and Muslim nations. This has an impact on the utilization of the Digital Yuan in addition to the growing importance of Islamic financial products to satisfy the demands of Shariah compliant financial products.

The hypothesis related to cross-border trade focuses on determining whether the digital yuan is expected to have an impact in fostering cross-border trade with these Islamic countries. The hypothesis plays a critical role in determining the impact the digital yuan has on the provisioning of Islamic compliant cross-border financial products, and whether it will ease transaction processing. Another hypothesis determines whether the ease of access to Islamic financial products is reduced when utilizing the digital yuan. This hypothesis addresses whether the digital yuan helps in equalizing opportunities for the access of Islamic finance products within China. The final hypothesis revolves around whether the digital yuan will impact the cross-border payment system, and whether this will affect existing cross-border payment services and instruments. These questions determine a comprehensive analysis and validation of the research problem, thereby supporting the development of the theory.

4. Grounded Theory

For the development of the theory, a grounded theory (GT) approach is utilized. GT is a structured but flexible approach to analyse a phenomenon to develop an explanatory theory to support the processes occurring in inquiry. A key aspect of GT that makes it very suitable for a variety research objective, is its being grounded in data. This data basis makes it ideal to have a solid foundation that is supported by data. Below, there will be an outline of the history behind GT, and how a conventional approach is conducted (Wolfswinkel et al., 2013).

The main founders of GT are generally recognized as Barney Glaser and Anselm Strauss (Glaser and Strauss, 1967), who were two sociologists collaborated on research on dying hospital patients. Strauss was well versed with symbolic interactionism, and Glaser had strong expertise in statistics, which led them to combine their strengths for the initial constant comparative method development (Birks et al., 2013). Their research on the study in the 1960s on the experience of terminally ill patients that had different knowledge of their health status, was of critical interest to the community with relatively little firm understanding of the individual behaviours and effect on these patients. Some of the patients had the suspicion that they were dying and did either confirm or disconfirm this suspicion. Other patients aimed to understand the situation by interpretation of the treatment by their care providers and family members. The key question was how these patients dealt with the knowledge of going to pass away, and how the healthcare staff reacted in terms of caring for these patients (Dunne, 2011).

While collaboration, the two questioned the adequacy of the scientific methods they utilized for the verification. This led them to the development of the constant comparative method in addition to the theory of dying. The constant comparative method is original in terms of organizing and analysing the qualitative data (Holland, 2005). This led to the subsequent development of the discovery of the GT. The work outlined how the data can be utilized to inductively generate the theory. This led to the challenging of traditional methods of testing and refining a theory via deductive testing. Specifically, the GT questioned the view at that time that a quantitative methodology is only valid and enables an unbiased way of determining the truth about processes in the world (O'Reilly et al., 2012). The work was especially critical in supporting qualitative research and show that it has rigour and can provide a solid comparative analysis to generate a theory from it. While the GT was jointly developed by Glaser and Strauss (1967), they later held different views on how to apply the GT approach. The philosophical perspective has diverged for the positivist versions of Glaser, and the post positivism stance of Strauss and Corbin. Additional philosophical perspectives have since emerged that influenced the methodological development in time (Xiao et al., 2004).

There have been several philosophical continuums for grounded theorists. These range from the theoretical perspective of symbolic interactionism to the constructivist perspective of Charmaz. While different philosophies arose, there is a general approach to utilize GT adequately. There are different methodological genres that are based on the traditional, evolved and constructivist GT. The traditional GT is based on the views by Glaser. The evolved GT considers the developments by Strauss, Corbin and Clarke. The constructivist GT went along the path of Charmaz and plays a critical role in going beyond the initial approach by Glaser and Strauss. While each variant is based on the original GT and extends it to more circumstances. The traditional or classic GT aims to create a conceptual theory that considers behaviour that is relevant and challenging for the participants (Qureshi and Ünlü, 2020).

The evolved GT is based on symbolic interactionism based on the work by Strauss, Corbin and Clarke and is incorporating a sociological perspective relying on symbolic-meaning individuals that are connected to the processes of the social interaction. This symbolic interactionism addresses the subjective views that individuals have in terms of objects, behaviours and events depending on their belief of the truth. The third genre developed is the constructivist GT that was explicated by Charmaz. This theory has its roots in constructivism and focuses on how the participants construct meaning within their area of inquiry. This implies that the experience and the meanings are co-constructed together with the participants (Elhaei Sahar et al., 2020).

While all these genres share significant similarities there are different factors that distinguish them, which also includes the philosophical position of the researcher. Additionally, the use of literature, and coding, analysis and theory development are incorporated (Qureshi and Ünlü, 2020). GT plays a dual role as both a method of inquiry and being the product of that inquiry. Specifically, there is a set of integrated conceptual hypotheses that are systematically generated to produce the inductive theory for the area under consideration. Additionally, this can be articulated as a theory derived from systematically gathered data and analyzed through a rigorous research process. This allows the researcher to begin an area of the study and then the theory gradually emerges from the data. The most important part is the view that the theory is not discovered but constructed by the researchers that view the area with their own lens. The latter clearly outlines that GT has a strong data foundation, whose interpretation and the constructed theory will still depend on the researcher. While this may raise concerns of bias or improper derivation of conclusions from a developed theory, the strong data foundation provides sufficient support in general to develop a theory that is accepted as legitimate considering the interpretations of the researcher (Dunne, 2011).

5. Analysis and digital mutual stimulation

This chapter will provide a comprehensive summary of the qualitative and quantitative research results that will then be integrated with other data sources for the development of a comprehensive grounded theory approach. The first step of the research was the conduct of the interviews and evaluate the responses.

5.1 Interview results

For the qualitative interview, 25 different individuals were interviewed from various regions and age groups. These individuals are located both in China, Africa, Europe, and North America, and were selected based on their expertise with cryptocurrencies and either living or having lived in China. This ensured that there is sufficient diversification in the view's representative of the overall population, and to maximize information retrieval.

The first question revolves around the digital renminbi. While most of the respondents referred to the digital renminbi as a digital currency that is similar to the conventional renminbi, only a few outlined that there exists a different technology as compared to the existing renminbi. Several respondents assumed that the digital renminbi is identical with the existing mobile payment services, such as utilizing WeChat or AliPay. A few comments also related the digital renminbi to a digital footprint by the government to control which funds are allocated to which individuals. This implied that the assumption is that the government will provide direct services to the consumers via the digital yuan and may become a competitor to commercial banks.

The question revolving around the purpose of the digital renminbi, was mostly reasoned by the growing digitalization of the currency environment. Furthermore, many respondents replied that the government aims to have greater control about the allocation of funds. This assumption is associated primarily with the news indicating that the Chinese government aims to strengthen control over its currency and focus on reducing money laundering associated crimes. While security concerns are a factor, many commented that the purpose of the digital yuan is to enhance payment options for individuals and strengthen the payment ecosystem both within China and abroad. Currently, Alipay and Wechat Pay make up most payments in China, which hinders the growth of other payment providers. Additionally, many respondents commented that the digital yuan strengthens the ability of individuals to have easy access to banking services and reduce the necessity and risks associated with cash payments.

When inquiring about the challenges that the digital renminbi faces, many respondents mentioned that general acceptance of the digital renminbi is a challenge, with individuals having sometimes concerns that they may lose access to their funds. This is primarily because of potential technical issues as well as the lack of having the physical cash in hand. Additionally, several respondents outlined that the technological ecosystem still has to be developed in order to support the digital yuan both within China and abroad. While the expectation by the respondents is that within the China the technological integration and acceptance will be rather rapid, fostered by the government, being able to pay for cross-border trade and services will still encounter significant technological challenges.

The question about whether the digital renminbi is compatible with Islamic law, most of the respondents commented that it will be given that the existing Chinese yuan is a valid, state-backed currency. Some respondents viewed the digital nature as a challenge, but for most of them the fact that it is a legal tender in the country will not cause any challenges to its acceptance under Islamic law.

When asking between cryptocurrencies and the digital renminbi, most respondents assumed that the difference is marginal with the only aspect being that the digital yuan is owned by the People's Bank of China while cryptocurrencies are decentralized. Only three to four respondents outlined that the underlying technology behind the digital yuan is different from other decentralized cryptocurrencies such as bitcoin. Specifically, the respondents mentioned that the digital yuan utilizes a centralized technological framework that is not utilizing blockchain.

When questioning about the base technology, only a few respondents knew the base technology that underlies it. While several guessed that it utilizes blockchain technology, most respondents were not aware of the technology behind it. Only a few outlined that the technology is based on a centralized database approach, which requires an internet connection to conduct the transactions.

When asked about the impact of the digital yuan on Islamic financial products, most of the respondents claimed that individual would have easier access to financing options and perform the transaction automatically via the application without engagement with a bank. As explained by some respondents, the digital yuan also

reduces the threshold of financial service providers that do not necessarily need API connections to banks to provide the Islamic financial services. This reduces cost of provisioning of Islamic financial services and makes it more attractive to individuals. Given the greater control and traceability of transactions, this further reduces Shariah compliance concerns in terms of how funds are utilized.

When interviewed about the most likely countries for the adoption of the digital renminbi outside China, several interviewees said those countries along the Belt and Road initiative, such as Pakistan, Laos, Kazakhstan, Cambodia, Kenya and Middle Eastern countries will be the first to adopt the digital renminbi. Recent developments that oil is priced in renminbi for trade, and the growing investment into these countries by Chinese companies were given as the main reasons for such a development.

When it came to security challenges, most respondents focused on the potential compromise of the application may enable others to transfer the funds outside their wallet. Additionally, fake payment codes which lead to a transfer of funds to an illicit wallet may be another factor to be considered as mentioned by the respondents. This has been an issue with the existing Wechat and Alipay payments, and has led to significant fraud, where fraudsters replaced the QR codes to their wallets. Given that the transfers require internet access, outages related to internet drop-off as well as people utilizing insecure connections may lead to additional security compromises.

With respect to the impact of the digital yuan on Shariah incompliant funds, most of the respondents explained that the traceability of the transactions will be a major safeguard against illicit utilization of funds. This implies that the central bank can trace transactions for each of the digital yuan, and with sufficient sharing of the data with the Islamic financial providers, this will enable tracing and taking adequate actions.

When inquired about which new financial instruments may be enabled by the digital yuan, various degrees of different views were outlined. The most common view was that it will ease the provisioning of Islamic microfinance options. Given the current challenges of costs associated with Islamic financial products, the digital yuan can lower transaction and finance costs due to its digital nature. Another tool is the development of customer-to-customer Islamic finance options, where individuals provide direct loans to others.

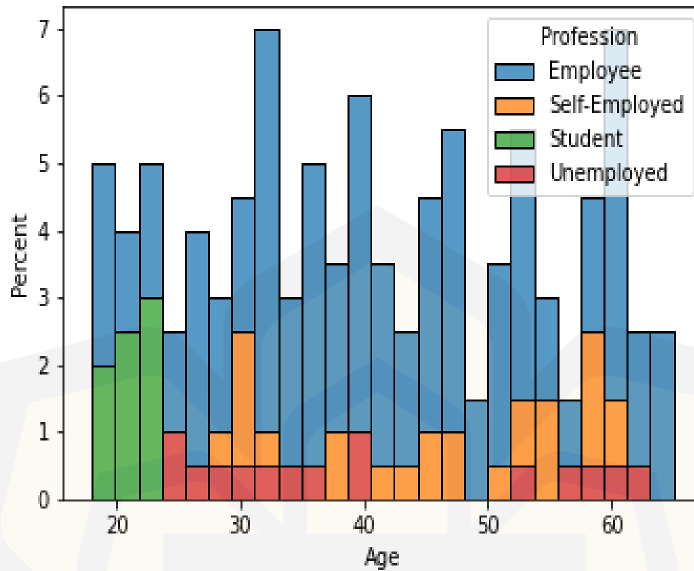
The final two interview questions focused on trade and the majority of respondent said that the digital yuan will significantly support trade and the belt-and-road initiative. Specifically, many respondents believed that the digital yuan would provide opportunities for lowering the investments for belt and road initiatives and provide greater opportunities for local cross-border initiatives. For example, it will enable the setup of local transportation services across the border between Myanmar and China, which can assist in increasing local trade. Additionally, the respondents explained that the digital yuan would enhance payment procedures for cross-border trade, and this will reduce the transaction costs. Hence, cross-border trade will become significantly more attractive.

Summarizing, the interview results provided some crucial insight into the individual views of the digital yuan, as well as its impact on Islamic finance. Based on the interviews, the first coding of the data and initial conceptualization of the grounded theory was established and related to the research hypotheses. While there were differences in the responses, the common view is that the digital yuan has a positive impact on Islamic finance services in China and may foster trading relationships. Hence, the interviews enable to form a first theory that the digital nature of the digital yuan spurs growth in the Islamic finance sector both within China and abroad.

5.2 Survey results

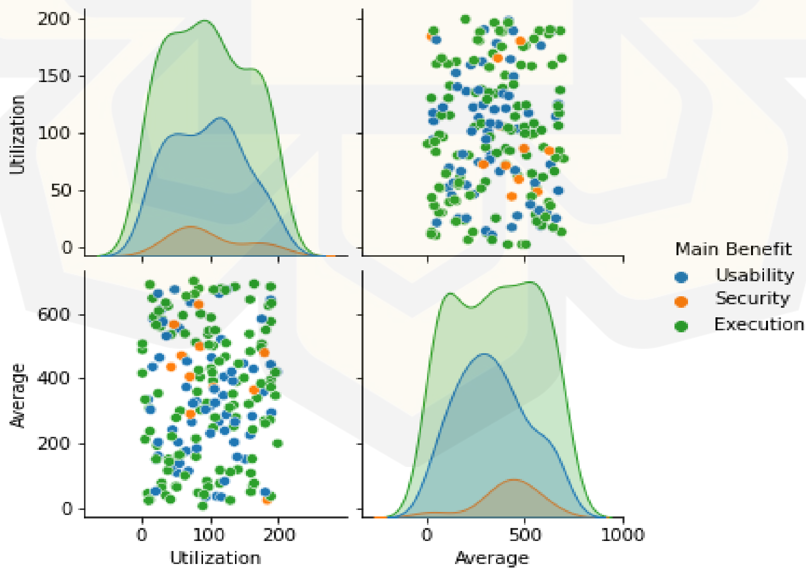
The interview questions were supplemented by a quantitative survey with more than 200 participants. The participants were located both in China, and abroad, with more than 50 % of the respondents being located within China. The individual questions are outlined in (Figure 1 – 7) but focussed on both the background of the participants as well as views towards and experience with the digital yuan and Islamic finance products. Figure 1 shows the distribution of the age of the survey participants and the profession in which they engage. Generally, the age distribution is quite diverse to cover as much the overall population tendencies as possible. As expected, most of the participants are employed, with a few individuals being unemployed or self-employed. For younger participants, almost half of the respondents were students, which is expected.

Figure 1: Histogram of age and profession of the survey participants.



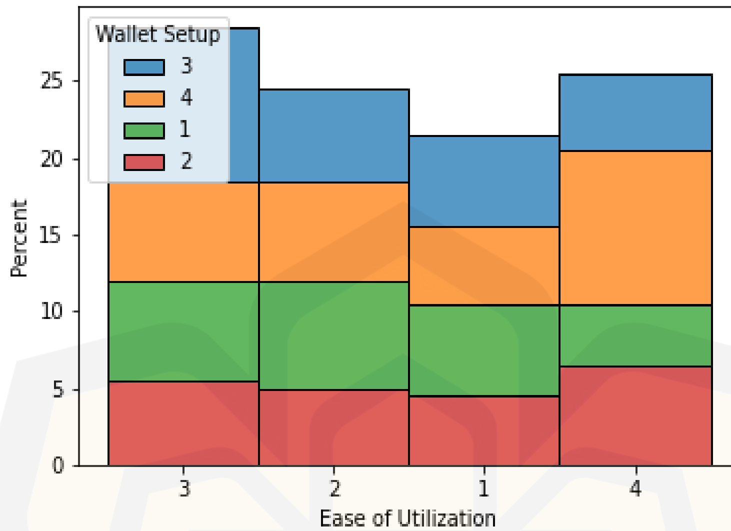
The next questions revolved around Figure 2 showing the utilization and average amounts spent with respect to the digital yuan. The data are categorized based on the main benefit of the digital yuan mentioned. Generally, most participants conducted several transactions being mostly between 100 to 200 and spent an average of more than 60 to 70 yuan in a single transaction. This implies that the digital yuan has been particularly attractive for small amount transactions, such as online shopping, as well as in convenience stores and restaurants.

Figure 2: Spending and utilization overview separated by the main benefits.



The questions related to the ease of utilization of the digital yuan, and the setup of the digital yuan wallet indicate that the majority of the survey participants feel that the digital yuan is relatively easy to use, and also that the wallet setup is fairly acceptable to be completed. As expected, participants stating that the utilization of the digital yuan is rather convenient and easy also imply that the digital wallet is convenient to set up.

Figure 3: Histogram of the ease of utilization categorized by the ease to set up the digital yuan wallet



A critical part of the survey was to determine the general trends related to the main benefits and associated challenges. Figure 4 displays that most individuals see the execution speed as well as usability within a variety of circumstances the greatest benefits of the digital yuan. Specifically, most of the respondents perceive the execution speed as the greatest benefit. Given that the payment is done immediately, and the transaction is automatically verified within a matter of milliseconds, this makes the transaction favourable as compared to other options such as credit and debit cards. While execution and usability are most preferred, most respondents felt that acceptance and potential fraud risk are the major impediments for the digital yuan. Acceptance both within China and abroad is a major challenge. Additionally, fraud risk, such as false payment QR codes, may represent another risk.

Figure 4: Histogram of the main benefits categorized by challenges

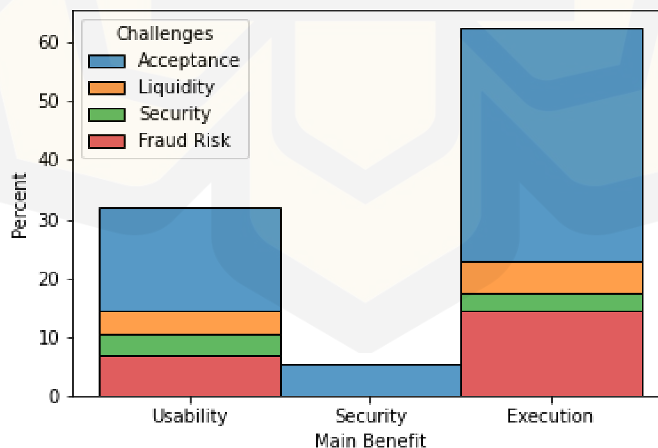


Figure 5 exhibits a comparison of the attractiveness of the digital yuan for Islamic project financing and takaful. The general trend is that most of the survey participants consider the digital yuan as supportive in project financing, and providing funds, in addition to helping with the provisioning of Islamic insurance options.

Figure 5: Histogram comparison of the scores for Islamic Project financing, and the takaful insurance opportunities

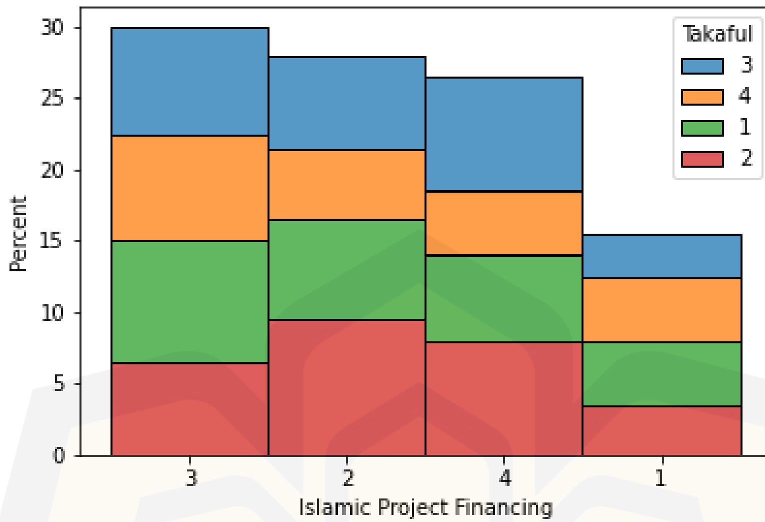
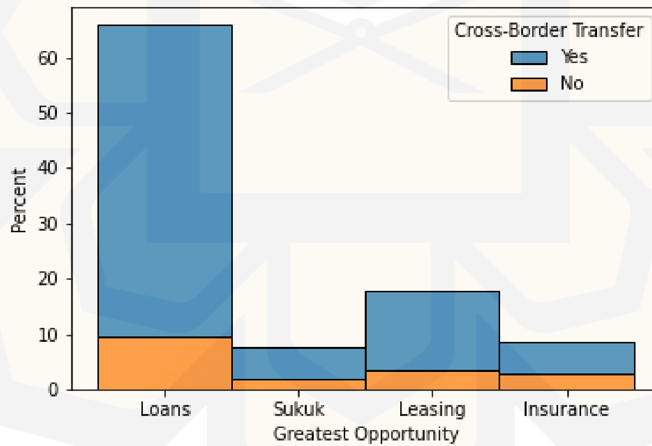


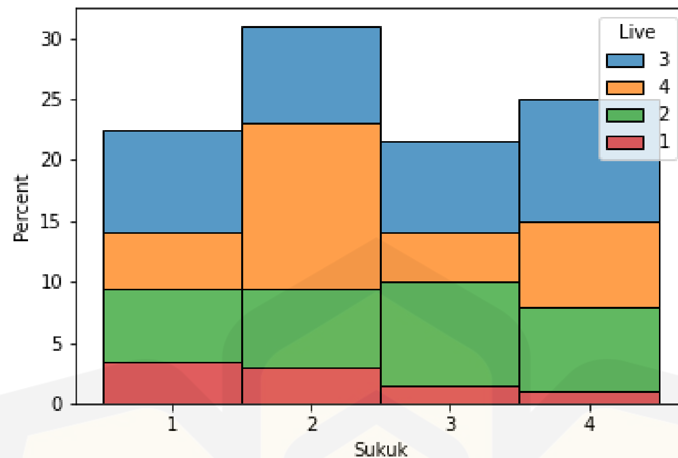
Figure 6 shows that most of the respondents think that the digital yuan will have a major impact on the provisioning of loan as compared to sukuk, leasing and Islamic insurance options. While most respondents view that the digital yuan will ease cross-border transfers, there are still a significant number of respondents with the opinion that there will be frictions.

Figure 6: Histogram comparison for the greatest opportunities and cross-border transfer usage



Finally, Figure 7 displays the impact on sukuk provisioning utilizing the digital yuan, and the impact the digital yuan will have on daily life. Most survey participants have a positive view towards the impact of the digital yuan on their daily life, and that it will improve transactions.

Figure 7: Histogram comparison of the impact on sukuk and the live of individuals



The analysis of the interview and survey results, in addition to economic data related to the impact of digital currencies on Islamic finance has given rise to a new theory on the digital mutual stimulation between digital currencies and Islamic finance. The new theory revolves around the research findings that both digital currencies and Islamic finance are stimulating each other and support their growth due to their intertwined characteristics. The survey and research results demonstrated that there is generally a positive trend between the growth of Islamic finance, and the digital currencies.

The main components of the theory indicate that the digital currencies and lowering of transaction costs stimulate the development of new Islamic financial products and reduces overall transaction costs for Islamic financial services, which makes these products more attractive and accessible to a large number of consumers. This significantly strengthens the economic financial system and encourages greater utilization of currencies. Likewise, the greater presence of Islamic financial services and the interest-free nature of digital currencies, will make digital currencies a trustworthy means of exchange, where individuals desiring an Islamic compliant currency and certainty that it can be traced how the money is utilized and invested.

The key factors for theory of digital mutual stimulation are the transaction costs, availability of sufficient Islamic financial products and the ease of transaction utilizing the existing digital infrastructure, such as wallets. Furthermore, the theory on digital mutual stimulation also states that the trust of the immediate transfer between parties supports international trade as there is no need to have an intermediary or trustee and the transaction can be performed in the form of smart contracts. This implies that as soon as the contract is fulfilled, the funds will be automatically released to the supplying party. Strengthened trust that the contracts are honoured will be very supportive of Islamic financial options given the importance of trust and honesty within the Islamic finance ecosystem.

6. Conclusion and Recommendation

As outlined in this article, the critical success factors for the utilization of Islamic finance for the Fintech environment in China vary. However, the most important factor is the political support and the willingness of the government to establish an effective framework for the Islamic compliant products and services for Fintech operators. This also implies that a strong focus on the establishment of sound regulations for China's financial market is critical for the success of Islamic finance. Islamic finance has significant opportunities in supporting the objectives of the government in terms of society, environment, and engagement with the Muslim world.

China is currently undergoing a rapid transitioning from a primarily infrastructure and export driven economy to one supported more strongly by domestic consumption. Given the significant indebtedness of the Chinese economy, Islamic finance may better align the real economy to the financial markets, reducing the potential opportunities for a detachment of the market values from the real values. Such a disconnect has been experienced in China in the real estate sector where excessive investment into the real estate market has led to significant speculation. Similar situations occurred in the Chinese stock market, where several companies were valued significantly above their real value becoming primarily a tool for speculation and gambling. Islamic Finance may play a critical role for assisting Macao in reducing its dependence on gambling revenues and

establish themselves as a hub for Islamic finance for small and medium sized enterprises.

Islamic finance for the financial technology industry may provide solutions to overcome some of the existing challenges caused by excessive leverage of companies in the financial market. Given its focus on real assets and the backing of it, Islamic finance may be well-suited for real-estate financing and micro and small loans for individuals and enterprises. The financial technology sector may specifically be well suited as it will allow to streamline the linking of Islamic financial services with real assets and the real-time access to the value of the underlying asset. As outlined, this will create a significant opportunity for financial services to become more digitalized and provide robust and sustainable financing solutions. Given the rapid rise of the e-CNY, the integration of Islamic financial services, such as Shariah compliant loans for domestic purchases or providing instantaneous options to invest into Shariah compliant forms of savings utilizing mobile payment technologies.

The Belt and Road initiative is particularly an accelerator for this trend, given the growing engagement of China with many Muslim countries and reduction in its reliance on nations such as the United States. This will become a boon for businesses that seek Shariah compliant financing forms when investing in China, as well as Chinese businesses seeking Shariah compliant financing options for performing business within these countries. Additionally, there will be the growing need to enhance financial services to stimulate economic growth and increase consumption.

The conceptualized theory digital mutual stimulation outlines the growing relationship between the strengthening of Islamic finance and the utilization of the digital yuan. Specifically, the theory provides an outline that the ease in the conduct of transactions, as well as reduction in transaction cost and greater democratization will significantly strengthen the provisioning of Islamic financial products. The digital nature of the digital yuan acts as a stimulus for smart contract execution and reduces the need for an intermediary as well as increases trusts between the contracting parties. This becomes especially important for international trade and transfers, as well as for asset purchases. Given the connection in Islamic finance between financing and real assets, the digital Yuan can play an important role in strengthening this interconnection and support Islamic finance in China and beyond.

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Quranic Perspective on Commercial Transaction (Trade) and Riba: Thousand Years of Banking Theories and Practices

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Abstract

Al Quran describes the prohibition of *Riba rā bā wāw* (ر ب و) (often translated as usury) and permission of commercial transaction or trade (*bā yā ʿayn* ب ي ع). We conducted a desk-study reviewing and analysing the historical connection between these two and their current implications through empirically proven and attested central bankers' modern banking theories and practices. We anchored our study on the etymological and ontological approaches. We specifically applied the spectrum of Al Quran (AQ) Chapter Al-Baqarah (2), verse 275 (AQ, 2:275) as the benchmarks. We discovered the root of the propagation of legalized *riba* through banks operating licenses issued by the government (temple *biyaʿ* (بِيَع) as a derivative of trade (*bā yā ʿayn* ب ي ع)). This makes the current permissible legal, commercial transaction or trade no longer isolated from prohibited *riba*. We argue that under the current banking practices and infrastructure, no transaction is *riba*-free, including those under Islamic banking and finance. Mitigating this requires immunized national banking practices that are detached from international banking systems and infrastructure.

Keywords: *Quranic finance, Islamic banking, Debt history, Trade, Commercial transaction, Riba, Usury, Slavery*

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1. Introduction

In this paper, we are peeking into 5000 years of the history of debt, trade, and *riba,* primarily based on the works of Graeber (2011) and Michael Hudson[1] (e.g., 1992, 1993, 2018). The discussions and writings on *riba* and/or usury—despite their meanings might be different, we are using these terms interchangeably—with their relevance to banking practices being unsettled, even at the religious levels such as in Islam, Christianity, Buddhism, and Hinduism. Muslim scholars agree that *riba* is forbidden, but they could not incisively concord with its contextualization regarding money and banking. *Riba* is often referred to as charging (excessive) interest on loaned money, and while most held that this is forbidden, the rest are on the "depends on the context" side. In our view, *riba* does not necessarily mean interest and is not always relevant to money. Dictum-wise, the root word of *riba* (ر ب) has hundreds of meanings. Some argue that *riba* is categorized as *riba an-nasiya* that is charging interests that expand the principal amount (Razi, 2008) 'in cash and/or credit' or as *riba al-fadl* which is an exchange of unequal quantities or qualities of commodities (Investment and Finance, 2013; Nethercott and Eisenberg, 2012; Razi, 2008). The word *'nasiya'* implies postponement, deferment, or delay,

[1] Prof Michael J Hudson has written extensively on debt and trade history and analysis. Here we mentioned only three of them. His writing collections are found here https://michael-hudson.com/(28 Mar 2022). Refer details in reference for Hudson (1933a, 1993b, 2002, 2011, 2018c, 2019).

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while the word *'fadl'* signifies to increase, add, expand, or surpass. Another term for *riba* for loans in 'hard cash' (not credit money or 'soft or electronic *e-cash*' generated by computer) is *riba* of old times *(riba al-jahiliyya)*, and a price for time over the borrowing period, which deals with borrowing coin-money, goods and/or commodities.

Despite Pakistan becoming the first country to declare nationwide in 2000 that current banking interest taking and paying (*ar-riba*) is *haram* (forbidden) based on Islamic jurisprudence (Usmani, 2006), the issue remains unsettled. This is simply judging by the modern banking practices that are based on three banking theories, namely financial intermediary banking (FIB), fractional reserve banking (FRB), and Credit Creation (CC) or also known by Post Keynesians as endogenous money (EM). For example, Pakistan has banking systems that transact cross-international boundaries. Also, it borrows money with interest from international (development) banks, such as the World Bank, and Asian Development Bank.

No single country conducts international trade and cross-country financial transactions without engaging the banking systems (Centre for Applied Research, 2015). This includes Islamic banking and/or finance, whose primary constructs or building blocks are similar to any commercial banks but with different facades. All of them must operate within the banking infrastructure, which were developed following the three banking theories and practices.

Numerous writings have been produced and argued about the application of the term 'usury' or mostly translated as '*riba*' and their relevance to trade or commercial transactions. Yet there is no unifying view on its meaning and contextual application. Let alone thoroughly analyse its application under the most prevalent banking theories and practices. Even the second Caliph, Umar b. al-Khattab, who is one of the closest companions (*Sahabah*) of the Prophet Muhammad, peace be upon him (ﷺ), noted.

> *"There are three things. If God's Messenger had explained them clearly, it would have been dearer to me than the world and what it contains: (These are) kalalah, riba, and khilafah."* (Sunan Ibn Majah, Book of Inheritance, Vol. 4, No. 2727; Ibn Majah notes: *"According to al-Zawa'id, the authorities of its isnad are reliable, but it has munqati* chain of transmission"*, p. 113; **Munqati* means an interrupted, broken or discontinuous chain.

This indicates that didactics and discourses on *riba*, particularly those of Quranic references, could be categorized as *Mutashabihaat* (the verses having ambiguity in their meaning) and verses that are clear in essence *(Muhkamaat)*. We will use both and furnish historical background and empirical analysis on debt, finance, and modern banking theories and practices. The contradictions compound the problem on *Mutashabihaat*-ness not only within the hadiths (or the 'true saying' and 'reported statements and conducts') of the Prophet Muhammad (ﷺ), also the hadiths and Quran.[2] This is because many jurists or authors *"have a penchant for selective use of hadiths as textual evidence."* (Farooq, 2009, p.113). Avoiding this, our paper principally applies Al Quran.

We attempt to fill the gap between verses that are *Mutashabihaat* and *Muhkamaat* by looking specifically into the difference between commercial activities or trade (*bā yā ʿayn* ب ي ع) and usury (*riba*) *rā bā wāw* (ر ب و) in the Al Quran (AQ) Surah (Chapter) Al-Baqarah (2) Ayah (verse) 275 (AQ, 2:275) and their relevance to today's banking practices. We anchor our analysis on this verse as the word *riba* has many entries in the dictionaries, which hints its linguistic context is far and wide. We will show that historically debt with interest payment, and/or *riba*, were practiced—as far as the record shows—during Babylonia's King Hammurabi ruling in ancient Sumer and Mesopotamia civilizations which is about 5000 years ago (Graeber, 2011; Hudson, 1992, 2018a). This continues throughout all known prophets (*Nabi*) and messengers (*Rasul*) assignments until today's modern society. Most of—if not all—literatures on *riba* are not incorporating the history and empirical test results of debts, finance and banking theories and practices in their analysis and discussions.

Graeber (2011, p. 64) was curious why primordial-debt theorists have not said much about Sumer or Babylonia's debt practices. Mainly since Mesopotamia is where the loaning money at interest was first invented and that it was where the world's first nation state was established. The closest that incorporates the modern theories and data on banking practices—without reference to the empirical results—is the work of Usmani (2006) titled *"The text of the historic judgment on interest given by the supreme court of Pakistan."*

Our paper is answering the question relevant to (*riba*) *rā bā wāw* (ر ب و) and *bā yā ʿayn* (ب ي ع)), and their interconnectedness, and leaving other derivatives of (رب) and (ب ي) not elaborated because is beyond our paper's scope. We begin by looking at the meaning of some Arabic words, their roots, and their corresponding

[2] We are not providing examples as these are well documented in many literatures. For example: *Hadiths Contradict the Qur'an.* https://www.qurania.org/hadiths-contradict-the-quran.html

words in English and Bahasa Indonesia. These words are Surah Al Baqarah, AQ, 2:275; Surah Ali Imran, AQ, 3:13; and Surah An-Nisa, AQ, 4:30. Following this, we elaborate debt practices in the past 5000 years and their relevance to those Arabic words. Subsequently, we expound on the three banking theories and practices, followed by conclusion and recommendation.

2. Literature Review

The following verses are the foundations for our study.

Verse (2:275) [3]

> *Those who consume interest cannot stand [on the Day of Resurrection] except as one stands who is being beaten by Satan into insanity. That is because they say, "Trade is [just] like interest* [riba]*." But Allah has permitted trade and has forbidden interest* [*riba*]*.* [4]

Verse (3:130)

> *O you who have believed, do not consume usury* [*riba*], *doubled and multiplied, but fear Allah that you may be successful.* [5]

Verse (4:29)

> *O you who have believed, do not consume one another's wealth unjustly but only [in lawful] business by mutual consent. And do not kill yourselves [or one another]. Indeed, Allah is to you ever Merciful.*

Another translation of the same verse (4:29)

> *O believers! Do not devour one another's wealth illegally, but rather trade by mutual consent. And do not kill ˹each other or˺ yourselves. Surely Allah is ever Merciful to you.* – The Clear Quran, Dr. Mustafa Khattab. [6]

Etymology

We derive our primary sources of information on the Arabic word meanings from;

1. Al-Quran translations from *The Quranic Arabic Corpus* [7]
2. The online Arabic-English Lexicon by Edward William Lane, published by (London: Willams and Norgate 1863). [8]-
3. *Belajar Bahasa Al-Quran, Metoda "Belajar Aktif Kata PerKata Lewat Intra/Internet"* [9,10]

1. Trade [11]

Al-bayʿu the trade (2:275:18) or *al-bayʿa* [the] trade (2:275:23) with the root of *bā yā ʿayn* (ب ي ع).

The root *bā yā ʿayn* (ب ي ع) occurs 15 times [12] in the Quran in four derived forms:

1. Six times as the verb *bāyaʿ* (بَايَعْ) – *to pledge allegiance; you have contracted.*
2. Once as the verb *tabāyaʿ* (تَبَايَعْ) – *to make commercial transaction; the trade; any trade; sale.*
3. Once as the noun *biyaʿ* (بِيَع) – *churches.*

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[3] Unless stated otherwise, all Quranic translation are of Sahih International.
[4] We consider this verse (*ayah*), in terms of the meaning of *trade* and *interest* as *Mutashabihaat.*
[5] For the meaning of *usury*, we consider this verse as as *Mutashabihaat*, whilst for the *doubled* and *multiplied*, as *Muhkamaat.*
[6] For the meaning of *mutual consent,* we believe the verse as *Muhkamaat.*
[7] https://corpus.quran.com/ (18 Dec 2021)
[8] Lane's Lexicon - Classical Arabic dictionary. http://www.tyndalearchive.com/TABS/Lane/ (18 Dec 2021)
[9] http://quran.bblm.go.id/ (18 Dec 2021)
[10] Note: The translations provided are brief semblances intended as a guide to the meaning. One Arabic word may have a range of substances depending on context.
[11] See also the relevant words such as *tijāratan* a transaction or trade (2:282:99) *tijārat* (تِجٰرَة) (equivalent to *bayʿa* ب ي ع) which root is *tā jīm rā* (ت ج ر)
[12] https://corpus.quran.com/qurandictionary.jsp?q=byE#(2:275:18)

4. Seven times as the noun *bay*ʿ (بَيْع) – *bargaining; the trade; in your transaction; any trade; sale; the business.*

Some of the (selected) entries in the Lane's Arabic-English Lexicon - Classical Arabic dictionary (Lane, n.d., 1863, pp.284-285) are;

1. *He sold it: and he bought it ... or this last signifies he offered it for sale, or exposed it to sale: ... as well as ... signifies he bought it. ...*
2. *The primary signification of it is the exchanging, or exchange, of property; or the making an exchange with property; as in the phrases ... [an exchange of property bringing gain], and ... [an exchange of property occasioning loss]: and this is a proper signification when it relates to real substances: but it is tropically used to signify the making that contract [of sale and purchase]; because this is the means of giving [and obtaining] possession: ...*
3. *You say also, ... he made a covenant, a compact, an engagement, or the like, with him, respecting it, or to do it: and ... [they made a covenant, ... respecting, or to do, the thing, or affair] ...* [Agreement or laws by the government]
4. *[A Christian church;] a place of worship ... pertaining to the Christian: ... or, as some say, a Synagogue of the Jews: ...*
5. *An article of merchandise* [a thing] ...

2. *Riba*

Al-riba (despite it does not mean so, however, mostly translated as the usury) (2:275:20), which root is *rā bā wāw* (ر ب و). The triliteral root *rā bā wāw* (ر ب و) occurs 20 times[13] in the Quran in eight forms:

- Four times as the verb *rabat* (رَبَتْ) – *to increase, to swell; to grow*
- Twice as the verb *rabbaya* (رَبَّيَ) – *to bring up*
- Twice as the verb *arbā* (أَرْبَىٰ) – *to increase, to make numerous*
- Once as the noun *rib* (رّب) – *usury.*
- Seven times as the noun *riba* (رِّبَوٰا) – *usury*
- Twice as the noun *rabwat* (رَبْوَة) – *on a height; a high ground*
- Once as the active participle *rābī* (رَّابِي) – *rising*
- Once as the active participle *rābiyat* (رَّابِيَة) – *exceeding*

Some of the entries in Lane's Arabic-English Lexicon - Classical Arabic dictionary (Lane, n.d., pp.1023-1024) are;

1. *The ground [being rained upon] became large and swelled. ... means and [become s large, and swells; or] increases: the latter means "and rises."*
2. *It (a thing, ...) increased, or augmented. ... It increased by usury. ... means And what ye give of forbidden addition in commercial dealing, [i. e. of usury,] ... or what ye give of anything for the sake of receiving more in return, ... and this is not forbidden accord. to most of the expositions, though there is no recompense [from God] for him who exceeds what he has received, ... in order that it may increase the possessions of men, ... it shall not increase with God, ... nor will He bless it: ... meaning, in order that ye may increase [the property of men], or in order that ye may have forbidden addition [or usury therein]. ... Also It became high.*
3. *An elevation of ground, or elevated ground... or an elevated place: so called because it is high: ... which explains as meaning' elevated sands, ... but higher and softer than the latter; the latter being more compact and rugged; ... he says, has in it depression and elevation; it produces the best and the most numerous of the herbs, ...*
4. *I reared him, fostered him, or brought him up; ... namely, a child: ... or anything of what grows, or increases, such as a child, and seed produce, and the like; ... [Thus ... signifies I reared, or cultivated, plants or trees.] ... is said of a tree [as meaning It produces blossoms, but does not mature its produce] ...*
5. *I removed, or eased* [loosening], *[his cord with which he was being strangled; ... meaning, his straitness]; ...*

[13] https://corpus.quran.com/qurandictionary.jsp?q=rbw#(2:275:20)

6. *An excess, and an addition: ... an addition over and above the principal sum [that is lent or expend]: but in the law it signifies an addition obtained in a particular manner: ... [i. e. usury, and the like; meaning both unlawful, and lawful, interest or profit; and the practice of taking such interest or profit:] it is in lending, (Zj, T,) or in buying and selling, (S,) and in giving: and is of two kinds; unlawful, and lawful: the unlawful is any loan for such one receives more than the loan, or by meant of which one draws a profit; [and the gain made by such mean :] and the lawful is a gift by which a man invites more than it to be given to him, or a gift that he gives in order that more than it may be given to him; [and the addition that he so obtains:] ... [it generally means] an addition that is obtained by using food ... for food ... or ready money for ready money, to be paid at an appointed period; or by exchanging either of such things for more of the same kind': ... or the taking of an addition in lending and in selling: ... [but although (and are both applicable sometimes in the 'same case; neither of them can be properly said to be generally explanatory of the other ...*
7. *[I]s a term specially employed to signify profit obtained in the came of a delay of payment: and ... to signify profit obtained by the superior value of a thing received of that of a thing given. ...*
8. *Excess, excellence, or superiority; ... so in the saying, ... [Such a one possesses excess, or excellence, or superiority, over such a one]. ... And An obligation, a favour, or a benefit.*
9. *Increasing, or augmenting ... And He punished them with a punishment exceeding other punishments.*

Riba[14] means to *collect by gathering*, *to bundle* or *bundling*.
Notes:
1. The word *riba,* with its root ر ب, has a host of meanings. There are 21 pages (pp.1003-1024) of entries in Lane's Arabic-English Lexicon - Classical Arabic Dictionary. This suggests that the application of which is highly particularized.
2. Notice that trade *bāya*ʿ (بَايَعْ) and *riba* (رِّبَوٰا) are always in pairs mentioned in Al Baqarah (2:275).
3. The trigger of trade and *riba* is different. Trade is triggered by the seller, while *riba* is by the borrower or those in a weaker position. In other words, trade impairs the seller, whereas *riba* is the borrower or the needy. If the trader does not sell her goods, there will be no problems. Likewise, if she does not borrow, there will be no *riba* issues. It is true that everyone has needs and eventually borrows something from someone. Thus, both the Bible and Al Quran prescribe debt forgiveness and almsgiving to relieve the borrower and/or the needy, not only from his obligation to pay back, and potentially being preyed upon for paying more, but also from their troubles. These two distinctions once grasped will make it easier to see the permission and promotion of trade and prohibition of *riba*. This becomes critical when evaluating today's banking practices.

3. Tijara (Trade and/or Commercial Transaction)

Tijāratan business; a transaction (4:29:12).
The triliteral root *tā jīm rā* (ت ج ر) occurs nine times[15] in the Quran as the noun *tijārat* (تِجَٰرَة) meaning *commerce, transaction, trade*.
Some of the entries in the Lane's Arabic-English Lexicon - Classical Arabic dictionary (pp.297-298) are;
1. *He practised traffic, merchandise, or commerce; trafficked; traded; dealt; sold and bought; (V;) employed property for the purpose of gain. (A.) You say, ... [He practised a profitable, or lucrative, traffic]. ... [Such a one traffic on land and sea]. ...*
2. *[The practice of traffic, merchandise, or commerce; traffic; trade; selling and buying;] ... of him who sell and buys for gain; ... the seeking of pain by selling and buying.*
3. *Merchandise, meaning what is sold and bought, of goods, or commodities, or household furniture, and the like; ... merchant; one who practises traffic, merchandise, or commerce; a trafficker; a trader, tradesman; a dealer; one who sell and buys; ...*
4. *One who sells and buys for gain: ... or the latter, a she-camel that is goodly, and saleable, or in much demand: (A:) or that is easy of sale when offered, by reason of her excellence: ... or simply, that is easy of sale, or in much demand:*
5. *As though, by reason of her beauty, or goodliness, and fatness, she sold herself:*

[14] http://quran.bblm.go.id/?id=6076
[15] https://corpus.quran.com/qurandictionary.jsp?q=tjr#(4:29:12)

4. Mutual Consent

Mutual consent *tarāḍin* or *tarāḍ* (تَرَاضٍ) (AQ, 4:29:14).

The triliteral root *rā ḍād wāw* (ر ض و) occurs 73 times[16] in the Quran, in eleven derived forms. These numerous forms convey the meaning of (to be) pleased, satisfied, agreed, approved, pleasure, pleasing, and *mutual consent*. Thus, *tarāḍin* means *mutual consent and pleasing to all parties involved*. Another word anecdotally, '*win-win and smile-smile'* instead of '*win-win but smile-begrudge'* solution.

Some of the entries in the Lane's Arabic-English Lexicon - Classical Arabic dictionary (Lane, n.d., pp.1099-1100) are;

1. *[Respecting a woman whose consent to her marriage has been asked,] ...testifies, or declares, her permission [or consent]; because permission indicates ... [I was pleased with him, or I liked him, or approved him, or chose him, or preferred him, as a companion]...*
2. *He [approved him, or] chose him, or preferred him; ... or judged him, to befit; for his companionship, and his service...*
3. *They agreed among themselves in being pleased, contented, or satisfied, with it; or in liking, or approving, it.*
4. *Means [I When they agree, or consent, among themselves; or] when they are pleased, well pleased, content, [among themselves,] every one of them with his [or her] companion.*
5. *Hence the trading. ... [Selling, or buying, is only resultant from mutual agreement, consent, or content, or approval] ... [Mutual agreement, or consent, to it, or mutual content with it, or mutual approval of it, happened, or took place] ...*
6. *And Obeying, or obedient ... on the authority ...*
7. *Applied to a thing, ... or a person, ... Found pleasing, ... pleasing, contenting, or satisfying; or with which, or with whom, one is pleased, ... or liked, or approved ... or seen, or judged, to befit for a thing or an affair...*

5. Doubled and Multiplied

The seventh and eighth words of AQ, 3:130, *aḍʿāfan* doubled (3:130:7), and *muḍāʿafatan* multiplied (3:130:8) were preceded by Al-*riba* or *rā bā wāw* (ر ب و) (3:130:6)[17] the *usury*, the same trilateral word in AQ, 2:275. The two words of *aḍʿāfan* and *muḍāʿafatan* share the same triliteral root of *ḍād ʿayn fā* (ض ع ف). These two words are clear and concise in their meaning, especially when paired with Al-*riba* or *rā bā wāw* (ر ب و).

Synthesizing Definitions

For this paper, we confined the meaning of the Arabic words as follows:

1. Trade

Al-bayʿu the trade (2:275:18) or *Al-bayʿa* [the] trade (2:275:23) with the root of *bā yā ʿayn* (ب ي ع). The exchange of (only) tangible assets. No intangibles are involved. One might argue that ideas or opinions given by consultants or advisors are intangible assets. We can say that as long as no ill-intention (fraud or deceit) and both parties are in a balanced position and pleased with each other, they are tangible as the idea comes from the 'sweat' of minds. It also refers to the temple, government, contract, constitution, laws, rules and regulation (see *biyaʿ* (بِيَع) – *churches*)

2. *Riba* – Usury – Offspring

Al-riba [the] usury (2:275:20) which root is *rā bā wāw* (ر ب و).

1. It involves transactions of tangible assets being doubled and multiplied through legal and illegal means.
2. It deals with intangible assets (e.g., credit money) being converted into tangible assets. Werner (2017) shows that 97% of the money in circulation is credit money created by banks *ex-nihilo,* and only 3% is hard cash.
   - In the case of e-money and the like (e.g., coupons, vouchers, gift cards), as long as no interest is charged and it does not need to be paid back, in our view, it is not *riba*.
3. It comes from fraudulent practices, irrespective of whether it is lawful or not.

[16] https://corpus.quran.com/qurandictionary.jsp?q=rDw#(4:29:14)

[17] In the AQ, 3:130:6, the last number shows the word sequence. Thus number 6 shows it is the sixth word in the verse 130, Chapter (Surah) Ali-Imran (3).

4. It derives from an unbalanced and unjust transaction, including an unfair judgment by the juries and courts. For example, the court ruling above and beyond (swell or increase) the prosecutors' or law's demand.
5. It is closely relevant to something inflated or deflated, including economic inflation and deflation.
6. Receiving a gift in return for favour, such as in the case of rent-seeking. For example, members of parliaments received a gift in exchange for passing a law that benefits certain entities. This is known as rent-seeking practice. In some jurisdictions, receiving gifts while in official duties might be lawful.

3. *Tijara*

Tijāratan business; a transaction (4:29:12) with a triliteral root of *tā jīm rā* (ت ج ر)

1. Buy, transport, sell and delivery of goods [or things] on mutual consent.
2. All parties agree, are pleased, and are happy and consent among themselves. This includes marriage or contract of parties.

Debt and usury chronicles: relevance to riba and trade

Interest-bearing debt was invented around the third millennium BC, before 2500 BC, in Mesopotamia. The first records are from about 2500 BC when interest rates of about 20% (Hudson, 2020). Graeber (2011) argues that the theory of money invention to replace complicated barter systems, such as burdensome practice for the people to haul their goods to the market or barter points, is unfounded as he could not find any shred of evidence supporting this. On the contrary, he shows that the first agricultural states and empires around 3000 BCE (circa 5000 years ago) used credit systems for trading and transaction, predating the invention of coins and cash around 700 BCS. This gave birth to the division of society into creditors and debtors. He shows that the governments (palaces and temples) created markets and coins.

Coinage was produced to pay the mercenary soldiers, who spent them in the local markets. The government then decreed that people must accept and use coins in daily transactions, especially in the local markets, as the taxes would be collected as coinage. The government used them to finance the wars. In the absence of government laws that forced people to use official money, people tend to invent their own medium of exchange, making it difficult for temples and palaces to collect alms and taxes. This account leaves a message that the credit system was established by coercion (or laws)—which the masses unconsciously accepted through the government's official hand. Thus, some might argue that this falls into mutual consent (trade and *Tarāḍin*); however, given the absent of choices, as in the meaning of a woman chooses her suitor amongst the candidates and both, the woman and man are pleased with each other (trade and *Tarāḍin*), it can be contended that the mutual consent is absent. This signifies the present of *riba*.

3. Conceptual Framework

Case in discussion

For thousands of years, the struggle between rich and poor was mainly in the form of conflicts between creditors and debtors who argued against each other about the rights and wrongs of interest payments, debt peonage, amnesty, repossession, restitution, the sequestering of sheep, the seizing of vineyards, and the selling of debtors' children into slavery (Graeber, 2011, p. 8). Around 2400 BCE, advancing loans—generally in the form of seeds, grains, or money for purchasing agricultural tools—by wealthy merchants to peasants who were in financial problems by taking collateral in case they were not able to pay.

The surety started with the borrowers' possession equivalent to the value of the loans but later expanded to what the lender lusted. Usually began "*with grain, sheep, goats, and furniture, then moved on to fields and houses, or, alternately or ultimately, family members. Servants, if any, went quickly, followed by children, wives, and in some extreme occasions, even the borrower himself. These would be reduced to debt-peons: not quite slaves, but very close to that, forced into perpetual service in the lender's household-or, sometimes, in the Temples or Palaces themselves.*" (Graeber, 2011, pp. 64–65). Despite it was commenced as trade, this describes an indication of *riba* in which the money owed but not paid for whatever reasons, including delay in payment (*riba*). This causes the borrowers' properties, workers and their family members, and even the borrower

him/herself *(riba; bundled or altogether gathered)*[18] to be confiscated and turned into the lender's property.

The borrower and his/her family members were enslaved, put under servitude, or even sold as slaves, simply for being tardy-or defaulting- in the repayment. We can portray the situation where the borrowers and lenders justified their conditions. The borrower would argue that he came for assistance and agreed to some terms which he expected the lender—mostly his neighbours or fellow villagers—would be lenient when defaulted. On the other hand, the borrower would justify his conditions legally by insisting that the loan was not of mutual aid, but a commercial relationship committed through a contract (Graeber, 2011, p. 86).

Wait! What if the borrower had agreed to the collateral conditions, including collateralizing his entire family and freedom? The borrower (See note on *riba*'s trigger) has agreed to the contract and pledged his allegiance to them (trade). Does this fall into trade or *riba*?

Trade (also *Tijara*) refers to buying and selling based on an agreement. Or bought and sold an article of merchandise (trade). Nothing implies a confiscation of (*riba;* bundled) properties[19] (tangible assets) in place of a failed promise (intangible asset). Surely, in the past, slaves were merchandise taken and displayed by merchants for sale, trade, or exchange with other commodities. The merchants might have obtained the enslaved people by raiding a village or country or buying them from their families, captors, or sellers.

Arguably, slaves, who were the family members of the borrowers, were obtained from *riba* as the loan swelled, increased, and multiplied (*riba* and multiplied) from the original sum borrowed. The most crucial argument we put forward is that the element of *riba* has annulled the trade circumstance in the sense that the lender was elevated (*riba*) or in *"Such a one possesses excess, or excellence, or superiority, over such a one. ... And An obligation, a favour, or a benefit; ..."* (*Riba*) over the borrower. Our point is the levelled or balanced position between the seller and buyer is no longer present. Thus, they obtained the merchandise through *haram* (illegal or forbidden) means (See *riba* on gain obtained both legally and illegally).

The practice of taking someone's wife as debt collateral was pervasive and appeared to disturb the social order in Sumer. Around 2350 BC, the laws of Urukagina specifically sanctioned that a wife could not have two husbands. This prohibits a wife in an extramarital relationship with another man, likewise a man with someone's wife. To prevent this, the law of Urukagina was implemented (Hudson, 2018b). But perhaps because of this, the lenders up their *ante* by requesting their borrower's wife, whom they might have their lust for, as collateral. Under this contractual arrangement, it was permissible to have one's wife or human being as collateral. This reflects a person's wishes for another's wife were common during that time. It was mostly seen in the borrowing practices in which a borrower would have collateralized his loans with his wife. Most probably at the lender's option and/or request, who might have lustfully eyed the borrower's (mostly their fellow neighbour) wife. These ladies were expected to serve the lender and their household, including providing sex services.

> *"Again, for the poor, this meant that family members became commodities that could be rented or sold. Not only could one dispose of daughters as " brides" to work in rich men's households, tablets in Nuzi show that one could now hire out family members simply by taking out a loan: there are recorded cases of men sending their sons or even wives as "pawns" for loans that were clearly just advance payment for employment in the lender's farm or cloth workshop."* Graeber (2011, p. 284).

The compounded (or bundled) danger of *riba* was vividly elaborated by Saint Ambrose's De Tobia's homily in Milan in 380 BC. He describes a situation wherein the fathers were forced to sell their children, debtors who hanged themselves because of disgrace. He expressed that usury must be regarded as brutal robbery, even murder (Graeber, 2011, p. 284). The following verses from the Bible explain the issues briefly.

Bible, Deuteronomy 5:21
New International Version

> *"You shall not covet your neighbour's wife. You shall not set your desire on your neighbour's house or land, his male or female servant, his ox or donkey, or anything that belongs to your neighbour."*

Similarly, Al Quran reminds the lender and borrower to act justly and not consume each other's wealth (AQ, 4:29) and, specifically for the borrower, not to *"kill your children for fear of poverty. We provide for them and for you. Indeed, their killing is ever a great sin."* (AQ, 17:31). Note: *'kill your children'* might mean to sell or pawn them.

The ultimate test to the 'Case in discussion' will be through verse AQ, 3:130, *aḍʿāfan* doubled (3:130:7) and *muḍāʿafatan* multiplied (3:130:8). Has the loan doubled? And multiplied? Yes, to both! It started with

[18] See footnote 9

[19] *Riba*, in most cases, implies properties (plural) instead of property (singular).

borrowing grains or money but ended up losing his lands, workers, wife and children, and even himself. Then, we can safely conclude the practice was *riba* even if it was based on agreement (trade and *Tarāḍin*) or protected under legal provisions by the state (temple or *biyaʿ* (بِيَع) – *churches*). AQ, 3:130 uses the word *riba* or *rā bā wāw* (ر ب و) (AQ, 3:130:6) and immediately followed by *aḍʿāfan* doubled (3:130:7) and *muḍāʿafatan* multiplied (3:130:8). These conditions of *aḍʿāfan* and *muḍāʿafatan* (as an inseparable unit) put a cap on any profit obtained in trade. Beyond this, we contend that it is no longer considered a trade but *riba*, irrespective of their commencement as a legal trade.

Let's revisit AQ, 2:275. *"Those who consume interest* [*riba*] *cannot stand* [.] *except as one stands who is being beaten by Satan into insanity. That is because they say, "Trade is* [.] *like interest* [*riba*]*." But Allah has permitted trade and has forbidden interest* [*riba*].[20]

The verse indicates a condition of becoming insane as one cannot differentiate—or they might know but ignore (or ignorance of)—the difference between what is permitted and prohibited and yet conducts the transaction under the pretension of permissible gain. (See *riba* being legal and illegal increase and *riba* being doubled and multiplied) and elevated (*riba*).

We argue the accord on trade but the prohibition on *riba* in Al Baqarah (AQ, 2:275) were connected to the past practices of excessive gain in lending that involved the temples (*biyaʿ* (بِيَع)) and palaces (or government) in terms of permissibility through laws and regulations. This continues to the present time under the modern financial and banking systems operating under the government's legal frameworks.

Let us retrospect the borrower's situation when he/she has no other choices and "forced" to agree to the lender's terms and conditions. This shows a situation in which there is no mutual agreement (trade, *Tarāḍin*) based on a balanced position (trade). One party is "elevated" (*riba*) or "superior" (*riba*) over the other. Thus, when an element of force, partiality, or imbalance is present, the transaction (or trade) could fall into *riba*. Therefore, when drafting and finalizing an agreement, it is a moral obligation for equality and balanced conditions (nobody is elevated, *riba*) that outweighs the legal mandate to complete the transaction. This is where AQ, 2:282-283 becomes critical.

> *O you who have believed, when you contract a debt for a specified term, write it down. And let a scribe write [it] between you in justice. ... So let him write and let the one who has the obligation dictate. And let him fear Allah, his Lord, and not leave anything out of it. But if the one who has the obligation is of limited understanding or weak or unable to dictate himself, then let his guardian dictate in justice. And bring to witness two witnesses from among your men. .... And do not be [too] weary to write it, whether it is small or large, for its [specified] term. That is more just in the sight of Allah and stronger as evidence and more likely to prevent doubt between you, except when it is an immediate transaction which you conduct among yourselves. For [then] there is no blame upon you if you do not write it. And take witnesses when you conclude a contract. Let no scribe be harmed or any witness. For if you do so, indeed, it is [grave] disobedience in you. And fear Allah. And Allah teaches you. And Allah is Knowing of all things.* (AQ, 2:282).[21]

We just learned the historical account of *riba* in a broader sense. This practice was witnessed and experienced by all prophets and messengers, including Prophet Isa (Jesus) and Muhammad (ﷺ). Accordingly, we reckon that one of the underlying reasons of *riba* prohibition in AQ, 2:275 are these particular accounts when the loan becomes swollen (*riba*) which includes something that is being bundled (*riba*), on the one hand, different that the 'original format' of the loan (e.g., grain, money), and on the other, larger (doubled and

[20] *Riba* does not necessarily mean interest. See etymology.
[21] Notes:
1. *"the one who has the obligation dictate"* and *"let his guardian dictate justice"* connote the government's laws, rules and regulations to protect the citizens. This implies that the guardian (or government) must protect its citizens from *riba* practices and/or unfair and unjust trade. For example, the law that allows credit card transactions with exorbitant interest rates.
2. In our view, " immediate transaction" refers to buy and sell (Trade), generally done on the spot. Lending money or commodities could be on the spot, but the repayment will extend beyond the place (spatial) and time (inter-temporal).

multiplied) than the original sum plus extra gains being bundled (*riba*) (e.g., lands, house, slave/workers, wife, daughters) as contractually agreed (trade).

4. Results and Discussion

4.1 Foundation: banking theories, practices and governance

The word usurer means those who lend money and the biggest money lender is the bank. Hence, we approach the usury (*riba*) through banking theory and practices.

> *"usurer (n.)*
> *late 13c., "one who lends money at interest," but later especially "one who lends money at an exorbitant rate of interest," from Anglo-French usurer, Old French usurier, usureor, from Medieval Latin usurarius "money-lender, usurer," from Latin usurarius (adj.) "pertaining to interest; that pays interest," from usura.*[22]

Galbraith (1975, p. 5) expresses that knowing how banks work is essential. He says that *"[t]he studies of money, above all other fields in economics, is the one in which complexity is used to disguise truth or to evade truth, not to reveal it."*

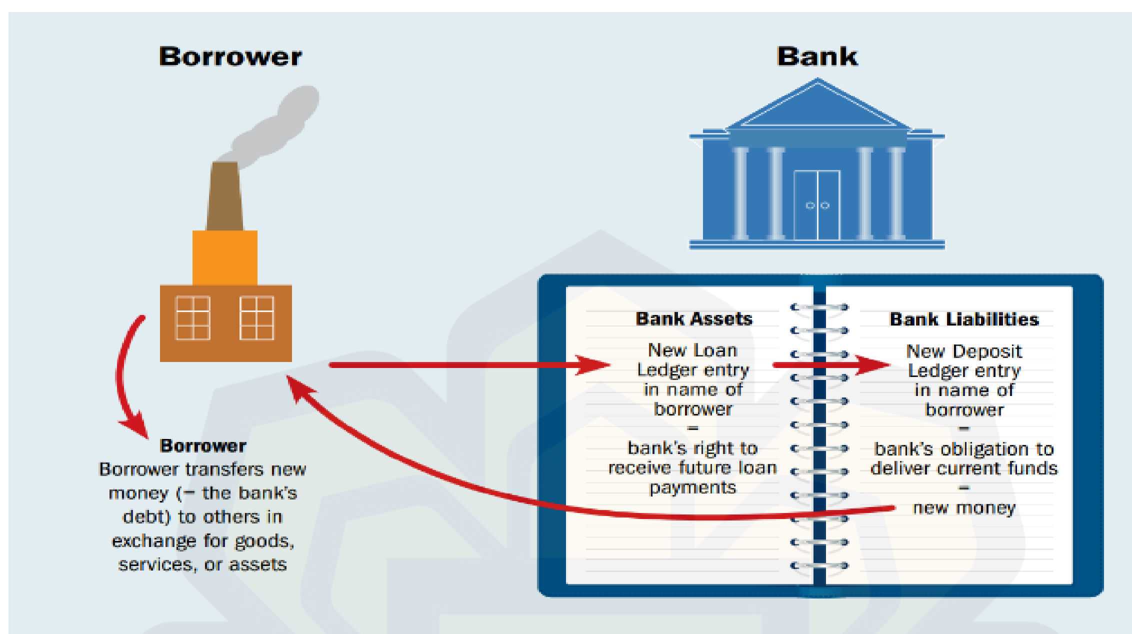
Before proceeding, the following evidence is essential to prepare us for understanding how banking systems work.

- The modern banking system manufactures money *out of nothing* (Angas, 1937; Hawtrey, 1923, pp. 20–21; Werner, 2014, 2016, p. 361).
- Rothbard (2008, p. 98) asks where did the money come from? *"It came—and this is the most important single thing to know about modern banking—it came out of thin air. Commercial banks—that is, fractional reserve banks—create money out of thin air. Essentially, they do it in the same way as counterfeiters. In this way, they fraudulently extract resources from the public, from the people who have genuinely earned their money. There is one exception to the equivalence: The law fails to treat the receipts as counterfeit."*[23]
- The Chicago Federal Reserve Bank (Nichols and Gonczy, 1992, p. 11) (1st ed., 1961), *"Of course they* [Banks] *do not really pay out loans from the money they receive as deposits. If they did this, no additional money would be created."*
- The Bank of England states; *"Whenever a bank makes a loan, it simultaneously creates a matching deposit in the borrower's bank account, thereby creating new money."* (McLeay et al., 2014, p. 15)
- Graeber (2011, p. 52) *"What we call "money" isn't a "thing" at all, it's a way of comparing things mathematically, as proportions: of saying one of X is equivalent to six of Y."*[24]
- The International Monetary Fund (IMF) shows a simplified chart on bank money creation (Figure 1) and expresses;

> *"New funds are produced only with new bank loans (or when banks purchase additional financial or real assets), through book entries made by keystrokes on the banker's keyboard at the time of disbursement. This means that the funds do not exist before the loan and that they are in the form of electronic entries—or, historically, paper ledger entries—rather than real resources* (Kumhof and Jakab, 2016, p. 51).

[22] Usury - Etymology, origin and meaning of usury. https://www.etymonline.com/word/usury
[23] This refers to the above quotes on money created *out of thin air or nothing* or *ex-nihilo*. The creation from *nothing into something* shows a condition of *riba* being doubled and multiplied. Even at 0.01 gain from zero is already doubled and multiplied.
The element of fraud annuls trade which leaves us with *riba*. This is compounded by the laws (See AQ, 2:282-283) that fail to protect the people (Also, see trade and *riba*)
[24] Since modern banking's money is not a "thing" or a tangible commodity, we argue that the element of trade is not present. Therewith *riba* is arguably practiced. Certainly, it can be reasoned that a promise is as good as money or (intangible) commodity to the extent that no confiscation of tangible assets in case of default.

Figure 1: Bank Money Creation Process (Notice there is no deposit from external sources)



Source: The IMF, Kumhof and Jakab (2016: p. 52).

Notes:

- Here, the *riba* appears not present as arguably this is a trade in which both parties, the bank, and borrower, agree to lend and borrow something that of an existence (previously deposited cash) even with interest payments. However, the principle of doubled *aḍʿāfan* and multiplied *muḍāʿafatan* still applies. Thus, using the rule of 72[25], we can estimate when the loan will be doubled. Assume the interest is 5%; therefore, 72/5= 14.4 years. Beyond this, the lender and borrower are risking taking and practicing *riba*. We argue that the government that allows this to happen through its banking laws shares the responsibility of practicing *riba*.
- Unless, of course, both parties (lender and borrower) mutually agree without one being superior (*riba*) to the other and the terms and conditions are not strangling, which needs to be unsnarled (*riba*), the borrowing transaction can be considered as trade. Although this might appear simple, the banks, with the auspices of the banking laws, in most cases is superior to the borrower.

At this juncture, we can now see that modern money, starting at the end of the 19th century, was created *ex-nihilo* or *out of nothing* and not backed by tangible assets or 100% reserve. The only protection, or value, is the laws and people's trust. With their licenses under the government's enacted banking laws, the bank loaned from nothing (intangible) to something (tangible). Thus, expanded (*riba)* this to the customers who are obliged to return the principal (Doubled 'and' multiplied) plus interest (multiplied) in the form of tangible assets. Hence, as per AQ, 2:175 warns us not to equate trade—as banking operates under contract or legal framework—and *riba* (expansion) or money supply from nothing (*ex-nihilo*). Additionally, the AQ, 3:130 indicates *riba rā bā wāw* (ر ب و) being doubled *aḍʿāfan* and multiplied *muḍāʿafatan*. Thus, we can now see that *riba*—through the financial system—is being 'legally' practiced nationwide and internationally. Let us now look at the banking theories and practices based on 5000 years of debt, banking, and finance history.

4.2 Banking theories and practices

Here, we briefly share the banking practices that have been empirically tested—possibly for the first time in the 5000 years of banking history—by Werner (2014, p.16). Werner (2014, 2016) and the IMF (Gross and Siebenbrunner, 2019) provide comprehensive literature reviews on these three banking theories and their time frame.

[25] Rule of 72 Definition, Formula, & Calculation. https://www.investopedia.com/terms/r/ruleof72.asp

4.2.1 Financial intermediation banking (FIB) (or loanable funds—LF)
First, FIB is the most dominant theory which holds that banks are merely financial intermediaries. They gather deposits ($100), mostly in cash, from patient savers and lend them out ($80) to customers or impatient spenders and charge interest. The Bank of England classifies this as a common misconception *"...that banks act simply as intermediaries, lending out the deposits that savers place with them."* (McLeay et al., 2014, p. 15).

As quoted by the IMF (Gross and Siebenbrunner, 2019, p. 30) *"Federal Reserve Bank of Chicago 1994: "Of course, [banks] do not really pay out loans from the money they receive as deposits. If they did this, no additional money would be created. What they do when they make loans is to accept promissory notes in exchange for credits to the borrowers' transaction accounts. Loans (assets) and deposits (liabilities) both rise by [the amount of the loan]."*

4.2.2 *Money multiplier or Fractional Reserve Banking (FRB)*
Second, the FRB theory adopts that bank collectively create money via multiple deposit expansion by using a fraction of the money in their possession as the basis for credit generation. A bank with $100 cash deposit in its entire holding can lend out $1,000 (10 times) under the 10% reserve rule (Nichols, 1992: p.11). Indonesia adopts 10% rules per its Bank of Indonesia's law[26]. Here, we already see the role of the temple or government through banking laws. Frederick Soddy (1877-1956), a Nobel Prize winner in chemistry, and a political ecologist, has quixotically criticized not only this FRB practice but also compounded interests as unsustainable and against the second law of thermodynamics of entropy.[27] The Fed nullified this requirement on 26 March 2020 (The Fed, 2020) [28] which means any bank can lend out money with zero reserves (Nichols, 1992: p. 3). [29]

Werner (2014, 2016), Keen (2014), and Moore (1983), and a growing number of central banks, for example, the Fed (Carpenter and Demiralp, 2012) and the Bank of England (McLeay et al., 2014), have mathematically, empirically, and practically proven that both FIB and FRB theories are untenable, factually incorrect and not reflecting reality hence are indefensible. Some literatures classified FIB and FRB as LF.

Notwithstanding, it was on their official publication on *Modern Money Mechanics*, since its first edition in 1961 (Nichols and Gonczy, 1992), The Fed (Ihrig et al., 2021) eventually admitted the *"fact that reserve requirements have no essential role in an ample-reserves regime. So, mathematically, the money multiplier equation is literally no longer definable."* Although this might seem harmless, many textbooks and university curriculums have reflected this around the world. This includes (almost) all central banks and their national banking act. For example, Bank of Indonesia with the Law No.23 (1999).

4.2.3 Credit Creation (CC)
Third, the CC, also known as endogenous money (EM), is the most dominant theory and is currently practiced around the world in which banks require neither deposits nor reserves. The Bank of England describes that money creation begins when a client signs the Loan Agreement (LA). They state that *"The bank, therefore, creates its funding deposits, in the act of lending in a transaction that involves no intermediation whatsoever."* (Jakab and Kumhof, 2015: p. ii). All the banks need for credit money creation is a signed LA or promissory note (PN). This is the oldest banking theory in modern civilization, based on 5000 years of practice (Positiva Pengar, 2021; Rose, 2010; Werner, 2016). Werner (2014, p. 14) in the first-ever practical empirical test of 5000 years of modern banking, observed in real-time and in an actual bank environment. A BBC[30] crew was filming the entire process from LA signing until he received the credit money into his bank account. The entire process took 35 minutes in contrast to the fund disbursement by the Multilateral Development Banks (MDBs), e.g., World Bank, IMF, Asian Development Bank, and Islamic Development Banks, which takes over 5, up to 10 years (Ingratubun et al., 2021).

Almost immediately after Werner (2014) published his study, the central bankers came out in concert, admitting the long-held suspicion that banks create money out of nothing or *ex-nihilo*. This includes the much-cited publication by the Bank of England (McLeay, *et al.*, 2014) of which Graeber (2014) commented, "*[i[n*

[26] Adopted based on Indonesia, Article 62.b, Law No.23 (1999) on Bank Indonesia.
[27] Refer Daly (1986) for further reading.
[28] Reserve Requirements. https://www.federalreserve.gov/monetarypolicy/reservereq.htm (8 Sep 2021)
[29] Notes: The increase (*Riba*) of nine times ($900) from $100 is governed by the 10% reserve requirement law (or temple, see trade). Governing by law (or contract) is an indication of trade; however, the increase (*riba*) itself is already doubled *aḍʿāfan* and multiplied *muḍāʿafatan*. Hence, it appears as *riba,* although the deposit of $100 seems not *riba*.
[30] The British Broadcasting Corporation. https://www.bbc.com/

other words, everything we know is not just wrong–it's backwards. When banks make loans, they create money."

Ravn (2015, p. (minute) 25)[31] expresses that *"lending and other terminology seems to be hidden behind a veil we don't really know what's going on in banks it's not the classical veil of neutrality that money has usually been seen as but it seems like maybe a veil of deception."* (Emphasized) He further quoted Häring (2013) *Lending and other terminology hidden behind a veil. Not veil of neutrality, but a veil of deception".*

Werner (2017) expresses: *"The developing country debt is in fact a form of predatory lending to ensure that the former colonies remain, in economic terms, in the hands of their former masters. Thus, it is becoming apparent that the central banking narrative of scarce money and scarce savings has been a hoax.*

From the "*Top Secret Banker's Manual. For Bankers Only*" (Schauf, 2003, pp. 25 and 34):

> *The bankers' own secret, inside manual explained fraud in the factum, UCC 3-305. This means that the party who did not write the agreement had no reasonable opportunity to obtain the knowledge of the terms* (p.25, emphasized).[32]
>
> *I talked to a number of those bank auditors and they admitted the banking system was a fraud, but they could get away with it because no one could explain it in court or they could use smoke and mirrors to hide the truth* (p.34).

Deception and/or hoaxing could easily make a legitimate trade becomes illegitimate, thus *riba* (See *riba*, when it could come from both legitimate and illegitimate transactions).

Conundrum

Banking, finance, and debt have been questionably absent from the mainstream academic textbooks. The theories that present in most literature is the FIB and FRB whilst the CC or EM have mostly disappeared from the textbook since early 20th century although, they entered the literature in the late 18th century. This has some researchers wondered.

> *"The failure by leading economists to incorporate banking in their economic theories has been identified as a significant and costly weakness. Likewise, it has been pointed out that the macro-economic feedback of banking activity had been neglected in finance research."* Werner (2016, p. 361).

Several authors depicted the current banking system as fraudulent (Rothbard, 2008; Schauf, 2003), deceptive (Ravn, 2015), and a hoax (Werner, 2017). Thus, with these elements of misrepresentation thus fraud, we can argue that given the current banking and finance infrastructure, most of them, irrespective of which (Islamic or non-Islamic) appear as practicing 'legalized' *riba*. We founded our arguments upon the legal infrastructure (the temple/government) that allows the current banking and finance to operate, and the acceptance of paper money created *ex-nihilo* as legal tender. Thus, the lender, people, and government shared the same responsibility.

The knowledge of banking, finance, and debt in the context of CC or EM has been obnubilated from the public's understanding. This could qualify any banking transaction beginning 20th century as *riba* as it creates money from nothing (*ex nihilo*) into something (doubled and multiplied) and charges interest (multiplied), which process was purposedly obscured from the public's eyes until Werner (2014) completed his empirical test. Central bankers (e.g., Bank of England, Bank of Canada, Bundesbank, Federal Reserve Bank) confirmed his results.

[31] Banks don't lend money, they create it: Demystifying monetary and banking terminology. https://www.youtube.com/watch?v=rvh403-PnsU (28 Mar 2022)

[32] Almost (if not) all loan agreements with the banks were drafted and prepared by the banks and the debtors almost have no say in it.

5. Conclusion and Recommendation

Implication of our study

Our results may have impacted some firmly held beliefs (Cognitive Dissonance) that the current banking system is not *riba* but trade. Furthermore, it has implications for the academic literature and Islamic banking and finance textbooks. Additionally, the national banking rules, regulations, and laws in some countries with many Muslim populations.

Conclusion

We have expounded on the *riba*—which largely does not mean usury—and trade from Quranic interpretations with historical correlations and their relevance to today's banking practices. We can safely say that all (without exception) banking and/or financing through banking—irrespective of their façade as Islamic banking and/or finance—at their core skeleton structure are practicing *riba*. This is based on the prevailing banking practices that has been empirically tested, proven, and attested by many central bankers, and the 'appearance' of trade' in the form of legal, operational licenses awarded by the government (temple).

Recommendation

Given the current international banking and finance infrastructure, it is almost impossible to have *riba*-free banking, finance, and trade. Unless each nation independently has its Quranic- or Q-based (e.g., AQ 2:275) localized banking (QLB) system and infrastructure that is not connected to international banking systems and infrastructures. Also, it is protected by national and possibly international laws. Surely this does not (yet) provide 100% *riba*-free for international trade and banking unless a separate system and legal infrastructure are developed for it.

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Do Microtakaful Schemes as Risk Management Tools Contribute to Halal Small Business Sustainability? Evidence from Malaysia

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Abstract

Microtakaful schemes have become increasingly crucial for risk management among halal small businesses. However, little is known about which of the schemes offered contribute to halal small business sustainability. Hence, this study intends to ascertain whether microtakaful schemes as risk management tools contribute to halal small business sustainability. This research adopts a quantitative research design by way of survey methodology to obtain data from halal small business owners and managers in Klang Valley, Malaysia. Additionally, exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and structural equation modelling (SEM) were used to uncover which of the microtakaful schemes significantly contribute to halal small business sustainability. The results show that disability and family microtakaful schemes are positively and significantly related to halal small business sustainability. Whereas property and health microtakaful schemes are found to be positively, but insignificantly related to halal small business sustainability. Meanwhile, our findings on property and family microtakaful schemes reveal that more awareness and education should be prioritised by microtakaful operators.

Keywords: *Property microtakaful, Health microtakaful, Disability microtakaful, Family microtakaful, Halal small business, Sustainability*

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1. Introduction

There is no doubt that the emergence of Covid-19 pandemic, with its economic crisis, has added to business sustainability challenges all over the world, regardless of their sizes and locations (Engidaw, 2022). Among different categories of businesses, small businesses are mostly at risk due to their relatively limited financial resources, lack of good risk management strategy, and inadequate takaful coverage to survive unexpected crises (Dua et al., 2020). With the effect of Covid-19 on small businesses and given that they are crucial for any economy, it has become obvious that a good risk management strategy to protect this sector from unforeseen shocks is imperative to their success and sustainability (Harel, 2021).

Obviously, subscribing to an appropriate takaful coverages, in addition to implementing policies that value employee safety, avoidance of transactions with dubious customers, installing security system to guard against property losses, training potential managers on the roles and responsibilities of their superiors to protect against key person losses, etc. is crucial for risk management and sustainability of small businesses (Asai, 2019). Without such risk management in place, business owners may face devastating damages which would be financially costly and threaten the survival of their businesses, such as what was experienced during the recent lockdown due to the Covid-19. While there is enough evidence regarding the cruciality of the traditional takaful for the survival of businesses (Ahmed et al., 2022; Asai, 2019; Ismail et al., 2016), their premiums, which are

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perceived expensive for several small business owners and low-income households, have left many without a way to protect their businesses (Fikri et al., 2022), resulting into lower rate of financial inclusion.

As a result of the lower rate of financial inclusion and lesser demands for traditional takaful products due to the high premiums, microtakaful and microinsurance schemes were designed to support small businesses as well as disadvantaged people to effectively manage their risks (Alzain and Alshebami, 2022). Although microinsurance plays similar roles as microtakaful, the latter was designed to provide Shariah-compliant risk-pooling products for the protection of low-income Muslims and halal business owners at affordable premium (Abdul Razak et al., 2021). Briefly, halal small businesses are businesses in which the ingredients used, the operations, and products/services conform with Shariah principles (Jaiyeoba et al., 2021). While several microtakaful products were designed and named differently by different takaful operators to help protect halal small businesses and low-income earners from various risks, these microtakaful schemes can be grouped into four specific products, namely property, health, family, and disability microtakaful (Usman, 2012).

Although researchers have documented the importance of microtakaful schemes for the sustainability of halal small businesses (Gor, 2013; Usman, 2012), however, the extent as to which these schemes have contributed to the sustainability of halal small businesses is yet to be explored and hard to find. Besides, studies on microtakaful schemes as risk management tools in small businesses is limited even with the fact that they are more vulnerable in combating any economic or financial crisis or external events, as they are structurally weaker and extremely exposed to unexpected risks (Tan and Lee, 2022). As noted by Bank Negara Malaysia (BNM, 2016), many small businesses and low-income earners are not prepared to deal with unexpected costs and income loss due to the lack of protection plans. Against this backdrop, a regulatory framework was developed by the BNM in 2016 to facilitate financial inclusion, sustaining small and medium enterprises, and the growth of microtakaful market in Malaysia. Following the regulatory framework, adopting microtakaful schemes as risk management tools among small businesses has been growing based on the findings of Abdul Razak et al. (2021) that knowledge, attitude, subjective norms, and perceived behavioural control influencing microtakaful purchasing intentions.

However, little is known about which of the microtakaful schemes, when used as risk management tools, contribute to the sustainability of halal sustainability. Thus, this study endeavours to ascertain whether microtakaful schemes as risk management tools contribute to halal small business sustainability. With this study, halal small business owners and managers will be exposed to specific microtakaful schemes that could help to protect their businesses against unexpected shocks which could threaten their sustainability. This is because the adverse consequence of the absence of appropriate protection against risks can threaten the existence of halal small business, resulting into liquidation (Chłodnicka and Zimon, 2020). Given the findings of this study, takaful operators in Malaysia will be made aware of the specific microtakaful product(s) that contribute to halal small business resilient and sustainability. On this basis, the present study contributes to the body of knowledge by generating theoretical and empirical knowledge about the sustainability of halal small business.

Meanwhile, the next section discusses the theoretical background with respect to business (corporate) sustainability and risk management, as well as pertinent studies on microtakaful. Section three elaborates on the methodology and data collected for this study. Section four presents and interprets the analyses performed on the data collected for this study. Section five discusses the main findings and offers the implications for theory and practice. The final section highlights the limitations and recommendations for future studies.

2. Literature Review

2.1 Theoretical background: business (corporate) sustainability and risk management

The term "sustainability" is a complex concept and researchers need to specifically discuss how this concept has been conceived to avoid ambiguity (Adoukonou, 2019). Regardless of how sustainability has been applied, Aragon-Correa et al. (2017) note that this concept is related to something of long term. In business related literature, sustainability has been used to refer to businesses or corporations' abilities to remain in operations over a long period of time. Specifically, Catlin et al. (2017) define business or corporate sustainability as business ability to employ appropriate tools, such as relevant risk management techniques, that could help them to remain in operation over a long period of time. Hansen and Schaltegger (2016) refer to business sustainability as business efforts to strike a balance between the dimensions of sustainability – planet, people, and profit. Similarly, a broader application of this concept, nowadays, is in sustainable development, which implies the

development that meets the needs of the present generation without threat to future generations' ability to meet their needs (Keeble, 1988).

To be precise, the application of sustainability in this study is in line with the operational definition provided by Catlin et al. (2017). By business sustainability, we are essentially referring to halal small businesses' ability to subscribe to appropriate risk management techniques, such as microtakaful products, so that they are adequately able to deal with potential risks to remain sustainable. As noted by Cheese (2016), small businesses' ability to effectively manage risk is *sine qua non* for their resilient and sustainability. Moraes et al. (2021) document that proper risk management enhances management of businesses, thereby contributing to their performance and sustainability (Rehman and Anwar, 2019). On this basis, halal small businesses can be said to be sustainable if they are able to effectively manage their risks in such a way that help them to continue to exist (Banker et al., 2014). This, therefore, suggests that risk management is crucial for small businesses' resilience and sustainability.

Meanwhile, risk management refers to a process that covers assessment, evaluation, and identification of risks that can be reduced and that which can be transferred through takaful (Deakins et al., 1997). Risks are inherent in any business and successful management of risk is dependent on the risk management framework established by small businesses, such as subscribing to appropriate microtakaful plans (Tan and Lee, 2022). The established risk management framework (covering risk identification, risk measurement, risk mitigation and risk monitoring and reporting) is extremely crucial for guiding small businesses to develop adequate strategies to mitigate, avoid, and control the effects thereof, particularly to ensure that businesses remain being classified as a 'going concern' should the unexpected happen (Masama et al., 2012). Meanwhile, given that small businesses are crucial for the economic stability of most developing countries, it is imperative that they take risk management more seriously. Compared to larger companies, Rostami et al. (2015) note that small businesses must take risk management more seriously as they lack resources required to respond promptly to either internal or external hazards that could potentially result in loss of property or liquidation.

Besides the use of takaful by halal small businesses to manage their risks, De Araújo Lima et al. (2020) considered enterprise risk management (ERM) as another complex and most innovative stream for managing risks compared to silo or traditional risk management technique, where each business unit leader is responsible for managing risks within his/her area of responsibility (Brown et al., 2019). With many aspects to risk management, De Araújo Lima et al. (2020) indicated that proper risk management is still challenging for small businesses due to the limitations in their resources. Despite the importance of risk management to the survival of small businesses, Abdul-Rahman et al. (2015) document that the implementation and proper risk management practices are still at low level among them in Malaysia.

Notwithstanding this finding, halal small businesses need to recognise that they are exposed to several risks, such as supply chain risk, interest rate risk, raw material price risk, technological risk, growth risk, e-business risk, etc. that may affect their performance and sustainability in this tough and ever-changing environment (Md Husin and Haron, 2020; Pathak and Ahmad, 2018). Since microtakaful schemes are important risk management tools that can be adopted to overcome these unforeseen risks, subscribing to appropriate microtakaful protection has become an important mechanism for healthy growth and continuity of halal small businesses. In this way, halal small businesses' assets, liabilities, and employees will be protected against risks that are associated with business operations.

2.2 Review of pertinent studies on microtakaful schemes

Microtakaful products are Shariah compliant instruments designed to offer protection to halal small businesses and low-income individuals (Mahmood et al., 2019). A discussion paper on regulatory framework to facilitate the growth of the microtakaful/microinsurance market was published by the Bank Negara Malaysia (BNM, 2016). While micro-takaful market is still at its nascent stage of development, it has been reported that there are huge untapped microtakaful market, since there are several small businesses and low-income earners without protection coverage in Malaysia as well as in other countries (Md Husin and Haron, 2020). Specifically, Mohd Yunus (2018) notes that there are at least around eight million working age individuals and over 700,000 businesses in Malaysia that need protection. Meanwhile, some studies have been conducted to investigate the opinions of small businesses owners on different policies offered by microtakaful/microinsurance around the world. Among others, Htay et al. (2015) analyse the viability of micro health takaful in Malaysia via questionnaire to the low-income earners. They found that participants are interested in subscribing to micro

health takaful, but unable to pay high premiums as demanded by takaful operators.

Bangaan Abdullah et al. (2021) examine the indicators of having a micro-family takaful plan among low-income earners based on the data collected from Selangor, Malaysia. They find that gender and knowledge about family microtakaful plans are significantly related to the tendency of having a micro-family takaful plan. Additionally, they also show that married and employed women are more likely to subscribe to family microtakaful plans compared to their male counterparts. In addition, Md Husin and Haron (2020) explore the perception of SMEs towards microtakaful. They find that interviewees were primarily concerned about the cost and the difficulty of choosing the best and most comprehensive coverage, implying that SMEs lack adequate financial resources and need guidance in selecting appropriate microtakaful plan. A recent study by Fikri et al. (2022) noted that family and permanent disability risks constitute more than 61% of small business owners and low-income earners' worries. Fikri et al. documented that family and permanent disability are the best microtakaful products for protection against temporary financial relief in the case of risks befallen the breadwinners, who are the primary income-earners in the family.

Zuliani and Rahman (2019) employed qualitative technique to examine the perspective of three parties, consisting of SMEs owners, academic experts, and low-income earners on microtakaful and its implementation in Banda Aceh in Indonesia. They find that there is a potential for microtakaful due to the needs among low-income groups, though they also noted some challenges that need to be overcome for successful implementation of microtakaful. Similarly, Abdul Razak et al. (2021) examine factors influencing micro, small, and medium enterprises' (MSMES) intentions to purchase microtakaful scheme based on theory of planned behaviour using data from 135 MSMEs in Perak, Malaysia. They find that knowledge, attitude, subjective norms, and perceived behavioural control have a favourable impact on intentions to purchase microtakaful coverage. Furthermore, the study of Mohd Fauzi and Laldin (2022) confirms the importance of microtakaful schemes in protecting low-income earners in Malaysia; however, they showed that the focus of microtakaful operators is skewed towards the disability, health, and family protection schemes, as they show little interest in the provision of microtakaful schemes for the protection of properties belonging to low-income earners.

Salleh et al. (2017) formulated a comprehensive framework for property microtakaful schemes with the intention of protecting SMEs' assets in times of floods. According to them, their finding, which was based on the developed framework, indicates that approximately 89% of small business owners stated that they lost between RM1,000 and RM30,000 in the form of tangible assets, such as equipment, machinery, and inventory, due to the floods which directly impeded business recovery process. Mohd Rom and Abdul Rahman (2016) investigate public perception towards microtakaful, they find that small businesses subscribe to microtakaful schemes to cover against healthcare cost (with average score of 4.33 out of 5), protection for family members (with average score of 4.31out of 5), coverage for disability (with average score of 4.31 out of 5), and coverage for property loss (with average score of 4.35 out of 5).

Furthermore, Usman (2012) notes that although microtakaful schemes may resemble microinsurance products in names, they are different in terms of concept. Accordingly, he noted that microtakaful schemes can be grouped into four, consisting of health microtakaful products, family microtakaful products, disability microtakaful products, and property microtakaful products. Gor (2013) suggests various sustainable microtakaful products in support of Usman (2012) and discusses cost-effective delivery channels that could help takaful providers to increase their access to halal small business and low-income households.

In a related study, Apostolakis et al. (2015) reviewed extant literature on microinsurance to help practitioners and researchers have better understanding of this important area; they find that microinsurance reduces low-income earners' vulnerability to poverty by providing them access to healthcare services and improving their income stability. They concluded that further research is necessary to reach concrete conclusions about the impact of microinsurance on sustainable development and financial sustainability of low-income earners. While several studies have been conducted on various issues bothering the perceptions and the importance of microtakaful coverages in alleviating poverty among business owners and low-income earners, there is no evidence as to which of the microtakaful schemes contribute to halal small business sustainability when used as risk management tools. To fill this gap, the present study is conducted based on the data from halal small business owners and managers in Malaysia. Thus, we intend to test the following hypotheses:

H1: Property microtakaful scheme is positively and significantly related to halal small business sustainability.
H2: Health microtakaful scheme is positively and significantly related to halal small business sustainability.
H3: Disability microtakaful scheme is positively and significantly related to halal small business sustainability.
H4: Family microtakaful scheme is positively and significantly related to halal small business sustainability.

3. Research Methodology

Based on the objective of this research and the nature of issue investigated, a quantitative research design was adopted to empirically unravel the issue of interest. According to Delost and Nadder (2014), adopting an appropriate research design is a critical issue that must be taken seriously by researchers. The adoption of quantitative approach is in line with similar other studies, such as (Zourrig and Park, 2019; Bangaan Abdullah et al., 2021; O'Connor, 2016). In line with the adopted approach, a survey questionnaire with a total of 46 items was developed to gather data from halal small businesses in Klang Valley, where about a quarter of Malaysia's total population reside (Jaiyeoba et al., 2022).

To develop our research instrument, items were adapted from other studies by Salleh and Padzim (2018), Ishak (2020), and Htay et al. (2015). Also, researchers and practitioners were engaged to ensure that our instrument is valid and reliable before subjecting it to data collection. Similarly, a pilot study involving 61 respondents from halal small businesses was also conducted and the outcome indicated that the developed instrument is reliable. In the end, data were collected from 238 halal small business owners and managers from the food and beverage sector using a convenient sampling technique. To arrive at the appropriate amount of sample size, the sample size recommendation by Hair et al. (2014) that a minimum of 150 sample size is required for a model of seven constructs or less was used as a guide, since this study is expected to generate five constructs based on the developed questionnaire.

Furthermore, to ensure the data collected were usable for analyses, our data were screened to ascertain that they are normally distributed, no multicollinearity concern, detect unengaged responses, absent of outliers, and confirm common method variance. It was discovered that the dependent variable is normally distributed and there is absence of multicollinearity concern as variance inflation factors were all less than 3.3. Similarly, there were no cases of extreme outliers, no unengaged responses, and common method variance was not an issue, based on Harman's single-factor analysis. Having ensured the usability of the data collected for this study for further analyses, exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and structural equation modelling (SEM) techniques were employed to analyse our data, as subsequently reported in the next section.

4. Results

4.1 Descriptive analysis

This section reports the basic characteristics of our respondents. The percentage of female respondents is 53.4% and the percentage of male respondents is 46.6%, suggesting that more data were collected from female respondents than male respondents. With respect to the respondents' levels of education, 30.7% are Diploma holders, 30.3% are Degree holders, and 23.9% are Sijil Pelajaran Malaysia (SPM) holders. Regarding the respondents' knowledge of microtakaful schemes, more than half of them (52.5%) have excellent knowledge of microtakaful schemes, 28.2% have good knowledge of microtakaful schemes, 12.2% have medium knowledge of microtakaful schemes, and 7.1% have low knowledge of microtakaful schemes. While it can be concluded that most of our respondents are knowledgeable about microtakaful products, there is a need for more knowledge sharing campaigns to promote microtakaful schemes to halal small businesses. Finally, most of our respondents (99.6%) have high and somewhat confident that takaful operators would compensate them for a covered loss.

4.2 EFA, CFA and structural model assessment

Subsequent to the data screening as discussed, EFA was performed based on principal components analysis (PCA) to manage the items in the questionnaire and confirmatory factor analysis was undertaken to ascertain how well the measured variables represent the number of constructs. Beginning with the initial analyses

performed to meet the assumptions of EFA as indicated by Hair et al. (2014), the values of anti-image matrix support our earlier claim that there is no concern for multicollinearity issue. The Kaiser-Meyer-Olkin test (0.946) confirms that our sample size is adequate, the Bartlett test of Sphericity ($\chi2$ = 8302.376, df= 406, p-value = 0.000) establish that there is good correlation between variables, and communalities values, as reported in Table 1, suggests that the variance shared are not highly compromised. Following the determination that EFA could be conducted with our data, the PCA with varimax rotation of the 29 items (all were positively worded) performed produced a five-factor structure. Using an eigenvalue cut-off of 1, the five factors generated explained an accumulated variance of 82.15%.

Table 1: Exploratory factor analysis

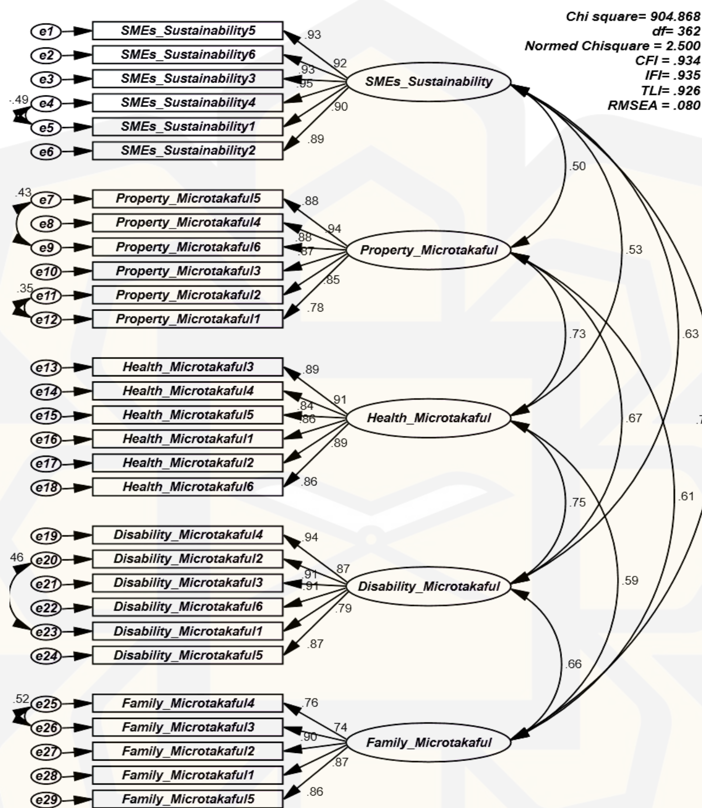
Indicators	Factor loadings					Communalities	CR	AVE	MSV
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5				
HSB_Sustainability5	.874					.894	0.970	0.845	0.513
HSB_Sustainability6	.855					.875			
HSB _Sustainability3	.854					.894			
HSB_Sustainability4	.837					.884			
HSB_Sustainability1	.832					.827			
HSB_Sustainability2	.788					.835			
Property_Microtakaful5		.833				.844	0.949	0.755	0.526
Property_Microtakaful4		.818				.876			
Property_Microtakaful6		.815				.842			
Property_Microtakaful3		.784				.804			
Property_Microtakaful2		.775				.793			
Property_Microtakaful1		.681				.727			
Health_Microtakaful3			.818			.850	0.952	0.768	0.565
Health_Microtakaful4			.815			.868			
Health_Microtakaful5			.777			.777			
Health_Microtakaful1			.738			.787			
Health_Microtakaful2			.727			.819			
Health_Microtakaful6			.678			.783			
Disability_Microtakaful4				.787		.871	0.955	0.779	0.565
Disability_Microtakaful2				.778		.851			
Disability_Microtakaful3				.778		.852			
Disability_Microtakaful6				.742		.841			
Disability_Microtakaful1				.724		.743			
Disability_Microtakaful5				.686		.772			
Family_Microtakaful4					.827	.807	0.917	0.689	0.513
Family_Microtakaful3					.824	.799			
Family_Microtakaful2					.702	.791			
Family_Microtakaful1					.691	.759			
Family_Microtakaful5					.689	.759			
Variance explained	19.20%	17.23%	16.44%	16.38%	12.91%				

Note: HSB=halal small business sustainability; CR=composite reliability; AVE=average variance extracted; MSV=maximum shared variance.

The first factor comprises six items with eigenvalue of 19.20%, the second factor consists of six items with eigenvalue of 17.23%, the third factor entails six items with eigenvalue of 16.44%, the fourth factor consists of six items with eigenvalue of 16.38%, and the final factor comprises five items with eigenvalue of 12.91%. Meanwhile, the eigenvalue for each factor is also reported in Table 1. In addition to the EFA, CFA was also conducted to assess the model fit, ascertain how well the measured variables represent the number of constructs, and discover the existence of the relationship between the observed variables and their underlying latent constructs (Jaiyeoba et al., 2021; 2022). As shown in Figure 1, the indices employed in testing the general fit of the model are $\chi2$, incremental fit index (IFI), comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardised root mean square residual (SRMR). These indices indicate a satisfactory model fit: normed chi-square = 2.500; IFI = 0.935; CFI = 0.934; RMSEA = 0.082; and SRMR = 0.044.

Besides, the results of reliability, which is measured in respect of consistency and repeatability, and validity, which is the extent to which the scores represent the intended variable (Che Embi et al., 2019), are reported in Table 1. According to Hair et al. (2014), reporting both composite reliability (CR) and average variance extracted (AVE) is necessary in a study where SEM is employed to analyse the relationship between the exogenous and endogenous variables. Accordingly, the CR values, as shown in Table 1, are all above the benchmark of 0.7. Likewise, the AVE values are all above 0.5 and respectively greater than the corresponding values of MSV. These results indicate adequate internal consistency and significant degree of convergent validity.

Figure 1: Measurement model



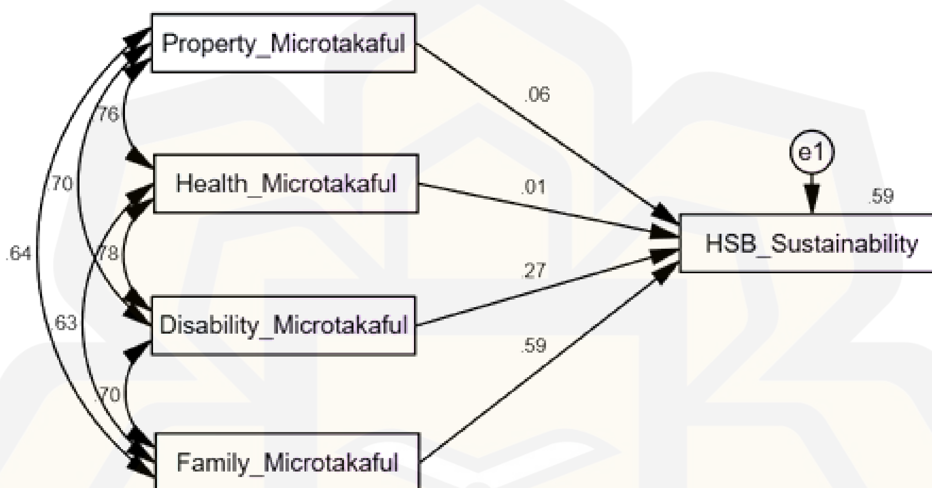
Finally, Analysis of moment structures (AMOS) software was used to determine the relationship between the exogenous variables (property microtakaful, health microtakaful, disability microtakaful, and family microtakaful) and endogenous variable (halal small business sustainability). As shown in Table 2 and Figure 2, disability microtakaful ($\beta = 0.285$, $p < 0.01$) and family microtakaful ($\beta = 0.821$, $p < 0.01$) are positively and significantly related to halal small business sustainability. Whereas property microtakaful ($\beta = 0.067$, $p > 0.05$) and health microtakaful ($\beta = 0.067$, $p > 0.05$) are positively but insignificantly related to halal small business sustainability. These results show that the only two exogenous variables that significantly contributed to halal small business sustainability when used as risk management tools are disability microtakaful and family microtakaful. Based on these findings, it can be concluded that our respondents considered coverage against the financial consequences of temporary or permanent invalidity as well as coverage for family protection as the main microtakaful schemes that contribute to their business sustainability.

Table 2. Regression weights

	Estimate	S.E.	C.R.	P
HSB Sustainability ← Property Microtakaful	.067	.079	.855	.392
HSB Sustainability ← Health Microtakaful	.009	.098	.090	.929
HSB Sustainability ← Disability Microtakaful	.285	.079	3.596	***
HSB Sustainability ← Family Microtakaful	.821	.084	9.768	***

Note: *** = $p < 0.001$

Figure 2. Structural model



4.3 Discussion and implications

This study ascertains whether microtakaful schemes as risk management tools contribute to halal small business sustainability. As noted by Mohd Rom and Abdul Rahman (2016) and Usman (2012), microtakaful schemes can be grouped into four categories, namely property microtakaful scheme, health microtakaful scheme, disability microtakaful scheme, and family microtakaful scheme. On this basis, a survey questionnaire was developed based on the extant literature. Following the analysis of the data that were collected from halal small business owners and managers, the results indicate that disability microtakaful and family microtakaful as risk management tools are the main microtakaful schemes that contribute to halal small business sustainability. Nevertheless, the relationship between property microtakaful and halal small business sustainability as well as the relationship between health microtakaful and halal small business sustainability are insignificant.

Specifically, we have found that disability microtakaful scheme as risk management tool is positively and significantly related to halal small business sustainability. Since the ability to earn a living is the most important asset in every situation and given the fact that disability microtakaful scheme provides invaluable protection for halal small business owners and managers in the event they are disabled and unable to work, such protection is perceived by our respondents as crucial for their business sustainability. Similarly, our findings show that family microtakaful scheme as risk management tool is positively and significantly related to halal small business sustainability. Obviously, these findings suggest that both family and disability microtakaful schemes are crucial for risk management, as they are possibly perceived as complementary microtakaful schemes that could help halal small businesses remain sustainable. These findings support Fikri et al. (2022) claim that family and disability microtakaful products are the best for risk management against temporary financial relief in the case of risks befallen the breadwinners who are the primary income-earners in the family.

Besides, we have also reported insignificant relationships between property microtakaful and halal small business sustainability as well as health microtakaful and halal small business sustainability. These findings possibly suggest that our respondents are more concerned about the livelihood of themselves and their family in the event of uncertainties. With respect to the result on insignificant relationship between property

microtakaful and halal small business sustainability, this finding confirms the result of Mohd Fauzi and Laldin (2022) where it was discovered that microtakaful operators show little interest in the provision of microtakaful schemes for the protection of properties belonging to low-income earners, as they focus more on other schemes, such as disability, health, and family protection schemes. Moreover, compared to other microtakaful schemes, property microtakaful may be perceived as expensive as in the case of regular property takaful. Similarly, since there is no compulsion to buy property microtakaful, several halal small businesses might be unwilling to opting in to avoid the monthly expense, causing them to suffer severe damage to vehicles, machinery, equipment, and stock due to floods or other disaster.

Regarding the insignificant relationship between health microtakaful and halal small business sustainability, this could be attributed to their sizes, as they relied more heavily on the part-time workforce and employ lower-wage workers compared to big businesses. Additionally, disability microtakaful might have been perceived as a better scheme in term of halal small business sustainability compared to health microtakaful, since the former offers financial protection against injuries and illnesses. This finding is in line with the study of Htay et al. (2015) where it was disclosed that participants were interested in subscribing to health microtakaful, but unable to pay high premium as demanded by takaful operators; thus, they may not see this product as potential contributor to halal small business sustainability.

Meanwhile, this study has made substantial contributions to the theory and practice. Unlike several extant studies, such as Bangaan Abdullah et al. (2021) and Htay et al. (2015), where only one aspect of microtakaful schemes was the main area of focus, the present study has investigated all aspects of microtakaful schemes, covering property, health, disability, and family. Besides, this study has employed SEM to reveal the microtakaful schemes (disability microtakaful and family microtakaful) that contribute to halal small business sustainability in Malaysia when used as risk management tools. Similarly, by documenting important findings with respect to which of the microtakaful schemes contribute to halal small business sustainability, the findings of this research have shown that disability microtakaful and family microtakaful are inevitable for sustaining halal small businesses, particularly in Malaysia.

Our findings that property and family microtakaful schemes are not significantly related to halal business sustainability reveal something interesting that halal small business owners and managers need more awareness and education to truly understand how microtakaful schemes work. Most halal business owners and managers might have remained in misplaced anxiety around how much property and family microtakaful schemes cost. When compared the cost of buying most of these microtakaful schemes to the potential risks faced by halal small business, it is really a smart thing that halal business owners and managers perceived all microtakaful schemes as crucial for their business sustainability because most of them cannot afford to take any kind of major hit to their businesses.

5. Conclusion, Limitations and Future Research

As microtakaful schemes have become increasingly crucial for risk management among halal small businesses (Asai, 2019), it is important to understand which of the schemes offered contribute to halal small business sustainability. To address this issue, a survey questionnaire was developed and used to collect data from owners and managers of halal small businesses in Malaysia. Based on the analysis performed using SEM, it was discovered that the sustainability of halal small businesses is significantly influenced by disability microtakaful and family microtakaful. Whereas property and family microtakaful schemes are insignificant contributors to the sustainability of halal small businesses. Overall, it can be established that subscribing to disability and family microtakaful schemes as risk management tools by halal small businesses would significantly enhance their sustainability.

To place the findings of this study in the proper context to which it should be interpreted, it is important to discuss the limitations of this study, especially since a convenient sampling technique was used during the data collection. In truth, the fact that our respondents were drawn from Klang Valley in Malaysia limit the generalisability of the findings of this study, despite that the population of Klang Valley represents about a quarter of Malaysia's total population. Thus, conducting further research based on adequate data from other cities in Malaysia would increase our understanding about the impacts of microtakaful schemes as risk management on halal small business sustainability.

Besides, we did not differentiate between male and female respondents, and this may have an effect since there are clear evidence that male and female do not share the same perceptions in similar issues as addressed

in this study (García-González et al., 2019; Jaiyeoba et al., 2020). Hence, future researchers may use sufficient data to shed light on this issue. Nonetheless, this study will benefit halal small business owners and managers, microtakaful operators, researchers and academicians, relevant agencies, and halal industry.

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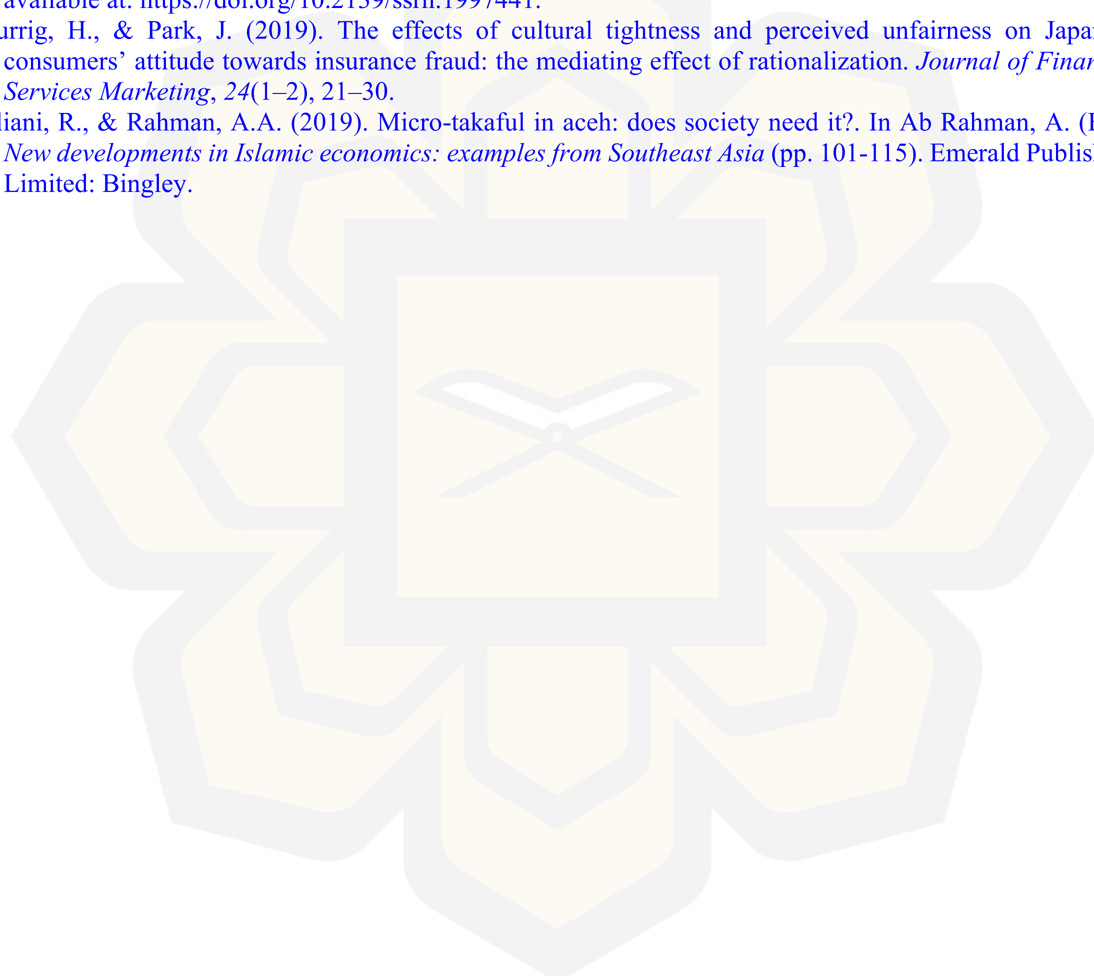

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The Role of Artificial Intelligence Technologies in Expediting Financial Inclusion: The Case of Selected African Countries

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Abstract

Artificial intelligence (AI) is a revolutionary technology that has been used tremendously in the contemporary industrial revolution 4.0 technology. AI has played a crucial role in accelerating the financial inclusion rate by easing the use of financial products. From the African perspective, there is a very few notable uses of AI technologies in the banking and finance industry, but such uses are not advanced in nature. Therefore, this paper attempts to study the role of AI for financial inclusion in some selected African countries. This paper is a conceptual study that uses a systematic literature review of 11 recent published papers about the relationship between AI and financial inclusion in the context of Africa. This study uses various and most recent published papers obtained from different online databases (mainly Scopus, Emerald, Elsevier, Tailor & Francis, Springer, EBSCO, and JSTOR) to investigate the conceptual and empirical role of AI on financial inclusion and poverty in some selected African countries. The study reveals that mobile money and crowdfunding are the most common fintech tools used in Africa. Therefore, some recommendations are provided for governments and policymakers to instigate techniques that will enhance digital financial inclusion, including using Artificial Intelligence for poverty alleviation in Africa.

Keywords: *Africa, Artificial Intelligence, Digital financial inclusion, Fintech, Poverty alleviation*

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1. Introduction

Most developing countries population are excluded from the formal financial system (Kshetri, 2021). There are around 1.7 billion people worldwide who have neither a formal financial account nor a mobile banking account based on the World bank's Global Findex database. For instance, in Mauritania, only 21 per cent of citizens have a financial inclusion (Bouasria et al., 2020; Maouloud et al., 2021a). This financial exclusion is among individuals and small and medium enterprises where 200 million of them lack finance (IFC, 2017). Financial inclusion is the ease of access and usage of financial products and services. Indeed, financial inclusion is an essential tool to alleviate poverty among vulnerable people and societies (Lal, 2018). As a result, it can enhance individuals' wellbeing by increasing children's education, women empowerment, and financial independence (Saviano et al., 2017). Being financially included is indispensable for humans, like having access to electricity (Peachy and Roe, 2006).

Artificial intelligence is the use of new technologies in different life domains. AI has been in use for various banking business, economic development, political and medical environments. In finance, the use of AI has enhanced the utilisation of financial services in several countries (Kshetri, 2021). FinTech is a portmanteau for financial technology that numerous banks and companies enormously use to reduce the physical distancing for people to allow easy access to financial services. Fintech is advantageous for uplifting the economy and financial stability for groups and individuals and upgrading their social life economically (Kusimba, 2018; Lee,

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Even though the use of AI has been widely discussed in developed countries, the African countries are still left behind and lack actual representation in research and application of Artificial intelligence in their societies. Looking into the several difficulties facing African countries, particularly poverty, the embracement of AI is limited (Achugamonu et al., 2020). Thus, this study explores the extent to which AI is used to enhance the financial inclusion rate among African countries where a scarcity of study exists. This study will be among the pioneers and most recent studies which discusses the role of AI in financial inclusion in Africa.

This research contains five sections, and it is organised as follows: the first section presents the introduction, which includes the background of the topic, research gap, and the objective of the study. The second section includes the literature review, which contains the theory underpinning the study, empirical and conceptual studies found in Africa. The third section discusses the methodology. The fourth section proposes recommendations to uplift digital finance among Africans. Finally, the fifth section presents the conclusion of the study and brings areas for future studies.

2. Literature Review

The primary purpose of using fintech is to reduce the risk of market anomalies, such as asymmetric information. This study is underpinned by the transaction cost innovative theory (Niehans, 1983). This theory is used because it matches the evolution and development of AI and fintech in the era of industry 4.0. Indeed, the advancement of AI results in reduced transaction costs, enabling better communication and information between lenders and borrowers. Hence, fintech is a potent mechanism in promoting financial inclusion and getting rid of the fragile financial system.

Fintech is a buzzword that indicates the use of different technologies to ease the use of financial services, commonly known as alternative finance (Baeck et al., 2014). The alternative finance enables safe and fast transactions through different digital models, such as crowdfunding, peer-to-peer (P2P) business lending, and P2P consumer lending. All of which has mostly increased financial inclusion rates in the world entirely, mainly in African countries. Because of the numerous advantages of fintech in easing the transactions such as saving, remittances, money withdrawals, there are more than US$50 billion have been invested in it through out more than 2500 companies worldwide (Sy et al., 2019). Financial technology can reduce income inequality in Africa by augmenting financial inclusion rate (Chinoda and Mashamba, 2021).

The most promising fintech models in Africa are mobile money and crowdfunding (Makina, 2019). According to the Global Findex Database 2020, more Africans have mobile money accounts than those who have an account in the financial institution (Demirgüç-Kunt et al., 2020). Mobile money account is considered formal financial accounts, which is developed by mobile technologies. Crowdfunding is mainly about raising funds for starting-ups, small and medium enterprises, and microenterprises through online platforms. Other fintech schemes are useful in the African case, mainly the payment apps, mobile wallets, cryptography, and Robo-advisors which is still more advanced for Africa usage. The robo-advisor helps the investors to build portfolio through some equations and algorithm methods.

Table1: African crowdfunding platforms, internet, and Facebook penetration

Country	Number of crowdfunding platforms (2015)	Internet penetration 30 June 2017 (% population)	Facebook penetration (%population) 30 June 2017
Algeria	2	45.2	43.8
Egypt	5	39.2	34.7
Ghana	2	34.7	14.0
Kenya	2	89.4	12.8
Ivory Coast	2	26.5	10.1
Morocco	4	58.3	34.1
Nigeria	9	47.7	8.3
Senegal	2	25.7	14.3
South Africa	21	54.0	28.9
Togo	2	13.0	4.4
Tunisia	2	50.9	50.5
Uganda	2	45.6	5.3
Zimbabwe	2	41.1	5.2

Source: (Boum, 2019)

Crowdfunding is still underdeveloped in the case of Africa and most of countries did not use it yet. It is clear from Table 1 that the most developed country is South Africa which has more than 20 crowdfunding platforms. Indeed, crowdfunding has numerous gains for the countries' economy, especially African countries due to its ability to gather funds for the enterprises to grow up, sustain, and be more competitive. A study conducted in Africa revealed that attitude and perceived behaviour control have a positive impact on the intention to use cryptocurrency (Mazambani and Mutambara, 2019).

Mobile money is widely used in African countries. In Somalia, Ghana, and Kenya, mobile money usage is remarkable among young and middle-aged generations (Ahmed and Ali, 2017; Tobbin and Kuwornu, 2011). Few African countries have embraced mobile money, such as Mauritius, Tanzania, Uganda, and South Africa. The case of Kenya is the most developed among African countries because of the use of M-PESA (Achugamonu et al., 2020). Nevertheless, Nigeria is promoting financial inclusion through bank-led use, which cannot ease access to ultra-poor that cannot afford banks services costs. The mobile phone markets are getting advanced, especially in the Sub-Saharan African countries (SSA) regions, due to the high level of youth in those countries (Winiecki and Kumar, 2014).

In Africa, having a mobile account is more than having a formal account at a financial institution due to the use of national identification systems which enhanced money transfers between individuals. More specifically, the SSA region has become the global leader for mobile market in the world because of the most developed mobile companies such as Telcom in east Africa, Safaricom in Kenya, Vodacom in Tanzania (Sy et al., 2019). Table 2 presents the number of the SSA citizens holding a phone, sim connections, and smartphones. Indeed, the mobile market has contributed to the economy by elevating the Gross Domestic Production (GDP) of the region by 7.7 per cent which can be increased to reach 8.6 per cent.

Table 2: Sub- Saharan Africa (SSA) Mobile industry statistics

	2016	2020 (estimate)
Unique mobile subscribers	420 million	535 million
Sim connections	731 million	942 million
Smartphones	198 million	498 million
Mobile internet penetration	26%	38%
Mobile industry contribution to GDP	7.7%	8.6%

Source: (Makina, 2019)

Approximately 30 percent of the SSA members have mobile internet. This fact impedes the usage of online financial products, and it can be the principal reason behind the low financial inclusion rate in the region. However, there is an optimistic future of the AI in the region where the number of internet user might reach around 40 per cent of the population by 2020.

The use of AI increases customers' satisfaction by reducing the physical movement costs, call bills, and time flexibility to get the services wanted (Mhlanga, 2020b). Much of the interest in AI is related to its ability in enhancing financial inclusion which is spurring enormously by the innovations in diversification products, easing the usage, lowering access costs, reducing documents required, improving products quality, and enhancing financial institutions' efficiency and sustainability (Pollio and Cirolia, 2022). In fact, the use of the internet in transactions reduces the physical access to institutions and saves money and time.

In Nigeria's case, the United Bank for Africa (UBA) has helped its customers performing several online financial transactions through the banking chatbot called Leo. The customers need to have internet and chat directly with Leo through any social media tool, and the response will be provided immediately. The fully digital bank in south Africa (TymeBank) has also reduced the services costs for its customers through online communications. This bank does not employ people in branches, and its apps (e.g. financial education app, TymeCoach) provide financial decisions for customers (Malinga, 2019).

Table 3: Well-known African fintech companies

Country	Company Name	Use of AI
Nigeria	United Bank for Africa (UBA)	A banking chatbot (Leo) enables customers to transfer funds, pay bills, check financial account and other financial services
Nigeria	InterSwitch	Africa-focused integrated digital payment commerce solutions
Nigeria	Paga	Delivers universal access to financial services across Africa
South Africa	TymeBank	It interacts with customers online and in person.
South Africa	RainFin	Online lending marketplace that connects borrowers with lenders
South Africa	22Seven	Budgeting & investing app
South Africa	Bankymoon	Builds blockchain-based solutions
South Africa	ExpenZA	Assist budgeting by automatically keeping track of transactions
South Africa	GetBucks	Online lender that manages credit profiles and budgets
South Africa	Gust Pay	An app that facilitates smart mobile payments
South Africa	IMB	Online payment platform
South Africa	Nomanini	Enable transactions in the cash-based informal retail sector
South Africa	Zoona	Provide money transfer and other services to unbanked consumers
Kenya	Bitsoko	Mobile money payment platform that uses blockchain technology
Kenya	Cellulant	Provide mobile payments across 11 African countries
Kenya	Safaricom Chatbot assistant Zuri	M-PESA Helps customers to do online top-up, cancelling SMS services, checking m-pesa, and managing subscription
Kenya	InVenture	Provides a credit scoring and real-time credit
Kenya	Musoni	Microfinance leveraging ICT and mobile technology

Source: (Friendsvow, 2017)

From Table 3, there are few African countries having fintech companies. Kenya and South Africa are leading the AI advancement in Africa. Those countries have the most developed and popular fintech companies that have improved their financial system and helped individuals to be inclusive and gain shared prosperity. Nigeria also has some well-known fintech companies that have increased financial inclusion among unbanked. For other African countries, there is an optimistic future for the advancement of fintech since it is getting popular and its outcome are obvious in reality (Sy et al., 2019).

African countries have benefited from fintech by blurring the boundaries among markets, financial institutions, and non-financial services providers, enhancing product quality and diversification, leading to an increase in the financial inclusion rate (Makina, 2019). The use of Fintech facilitates access to rural African households, especially through mobile money and e-wallets tools, which can increase their financial independence and enhance their prosperity (Indrasen, 2017; Mhlanga, 2020b). In the MENA region, the crucial role of fintech on financial inclusion has been confirmed by several studies (Al-Smadi, 2022).

Fintech can spur the economy of developing countries by raising the GDP rate, especially the Sub-Saharan African countries (SSA) region (Sy et al., 2019). According to the Mckinsey Global Institute report, the developing countries can enhance their GDP up to six per cent by 2025, especially countries with very low financial inclusion rate, such as Ethiopia and Nigeria (Manyika et al., 2015). Those countries would have the potential to increase their GDP by 10 to 12 per cent. Furthermore, fintech enables individuals to be financially independent and enhance their prosperity and wellbeing (Panos and Wilson, 2020).

Digitalisation greatly contributes to the economic development and social wellbeing of individuals and societies (Kwilinski et al., 2020). However, some studies find that the impact of AI on socio-economy wellbeing is questionable, not yet confirmed by empirical studies (Ozili, 2020a). Although Fintech has a predominantly positive impact on socio-economic development and individual wellbeing, it has some drawback since it can replace the human jobs with robo-jobs and create new types of risk that was not expected previously.

3. Research Methodology

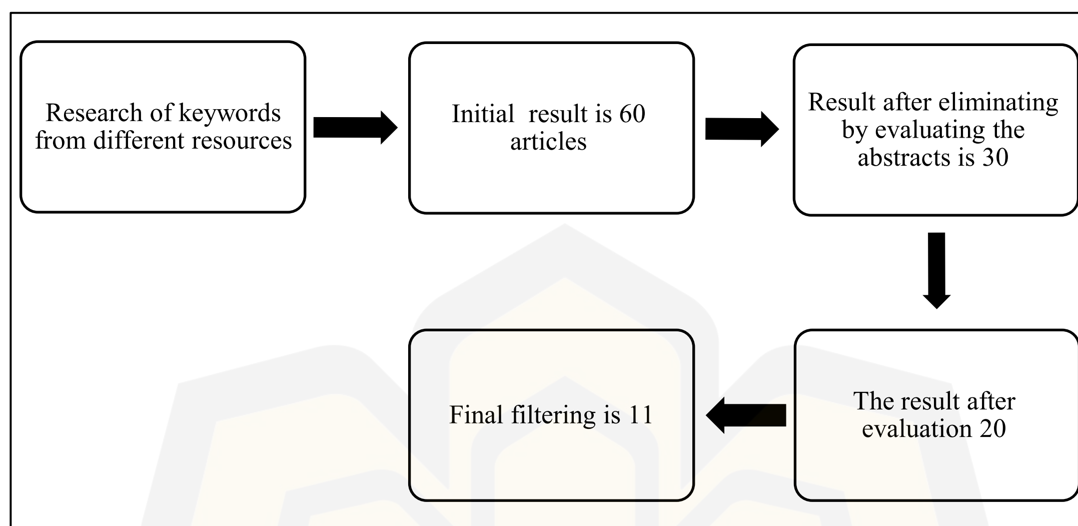
This paper uses a content analysis methodology through a systematic literature review to determine the impact of AI on financial inclusion in African countries. The keywords are related to the title and objective of the study. The research has been focused on keywords such as “artificial intelligence”, “digital finance”, “fintech”, “financial inclusion”, and “African countries”. The review was performed in various well-known and high indexed databases: Scopus, Elsevier science direct, Tailor & Francis, EBSCO, and JSTOR using (Kitchenham, 2004) guideline. All potentially relevant papers, based on the title, were kept aside in a specific folder. Few papers were found in the African countries, around 30 papers. Following the articles' selecting based on the abstract and full-text screening, only 11 were maintained in this study.

Table 4: Keywords combination and number of articles

Keywords searched	Number of articles	Number of articles considered
“artificial intelligence” AND “digital finance” AND “Africa”	15	9
“fintech” AND “financial inclusion” AND “African countries”	30	13
“digitalization” AND “financial inclusion” AND “Africa”	15	8
TOTAL	60	30
FINAL FILTERING		11

Most articles published on the topic in the African context are in the five previous years. Since innovative research and development methods are not very common in Africa, the importance of fintech and digital finance is recently incorporated in the African interests. The most recent analysed studies reveal that the potential of using AI in Africa is increasing at a moderate pace, and financial inclusion is getting higher in recent years. Following the process of the identification of the keyword used by several authors in the systematic literature review (Hanif and Haron, 2022; Mpofu and Mhlanga, 2022). The articles were found with their keywords using the method of Boolean search AND between quotation marks. Figure 1 shows in brief the process of section of the articles.

Figure1: Screening process of article selection



4. Proposed Recommendations

Fintech is an effective strategy to enhance the development of countries, particularly African countries. It also increases the African countries economy in reducing the international transfers charges (Makina, 2019). Most Africans mainly live on remittances from their relatives abroad, which improves their living standards and wellbeing. Hence, governments should seriously consider the use of AI in money transfers and policies that can enhance it (Igwilo and Sibindi, 2021). For instance, the use of blockchain technology can ease international money remittances. Blockchain technology is a robust innovation that ensures a safe and secure transaction between both parties (Sy et al., 2019).

The enhancement of digital finance is indispensable to increase financial inclusion and alleviate poverty in Africa. Besides that, African countries lack proper financial infrastructure, such as energy. Only 40 per cent of Africans have a proper infrastructure with a reliable electricity supplier, and 68 per cent from SSA countries live without electricity (Oyuke et al., 2016). Also, African countries have the lowest internet connectivity in the world. Since digital financial increases economic growth, governments are advised to promote digital financial inclusion by adopting strategies that enable countries to follow detailed action plans (Arakpogun et al., 2021). The first step should be focused on providing adequate financial infrastructure that enables people to use electricity. Also, offering strong internet connectivity is a crucial policy to develop the use of fintech (Mhlanga, 2021; Ozili, 2020a).

The usage of digital financial services in Africa has enormously increased digital financial inclusion because most of unbanked people have benefited from using mobile money services and cell phones banking (Mpofu and Mhlanga, 2022).

To enhance financial inclusion, governments should ease the opening of account by lowering their costs and financial services charges in general. The affordability of costs is among the main barriers to use financial products (Bouasria et al., 2020). Also, adopting lenient rules in providing services to less fortunate people is necessary to enhance the financial inclusion rate among unbanked populations (Maouloud et al., 2021b). For instance, the reduction of documentation required and the use of e-KYC (Know Your Customer) will enhance the eligibility of households and entrepreneurs to use more products and services (Maouloud et al., 2019; Panos and Wilson, 2020). A careful consideration in financial inclusion barriers is needed to boost the financial development and increase the number of banked people.

Financial institutions should spread awareness about the use of financial products, especially digital services. Indeed, less educated people find difficulties in using digital products. Providing training on the effective usage of digital products can reduce poverty and increase financial inclusion among the vulnerable (Hinson et al., 2019; Kwilinski et al., 2020). The level of digitalisation positively affects the development of the economic situation and reduce income inequality (Chinoda and Mashamba, 2021; Demir et al., 2022). It

can also enhance the financial capability and financial trust between customers and financial services providers (Brown et al., 2019). Therefore, African governments should encourage financial institutions to incorporate digital finance more in their transactions, such as expanding the number of ATMs and reducing cash payments (Achugamonu et al., 2020; Langley and Leyshon, 2022; Ozili, 2020b). Fintech can help microfinance institutions in reducing poverty, income inequality and also mitigating risk- taking (Banna et al., 2022; Mhlanga, 2020a).

Microenterprises are pillars of economic growth; thus, providing financing develop them more and prevent them from bankruptcy which can adversely affect the country's economy. Microentrepreneurs should be taught the use of digital finance to expand enormously their business (Ashenafi and Dong, 2022; Ketterer, 2017). Due to the high poverty rate in African countries, several dwellers are not educated and live in rural areas where a lack of financial services exists. The government should encourage banks and financial providers that expand their outreach to rural entrepreneurs by lowering the taxes and provisions charges (Senyo et al., 2022).

Table 5: Summary of the previous articles

Article	Title	Author name and year of publication	Journal name	Objective of the research
1	Digital Financial Inclusion, Digital Financial Services Tax and Financial Inclusion in the Fourth Industrial Revolution Era in Africa	Mpofu and Mhlanga (2022)	Economies	The article attempts to analyse the link between digital financial service growth and digital financial inclusion in African countries. Also, it explores the imposition and potential of digital financial services taxes in Africa.
2	Fintech, financial inclusion and income inequality nexus in Africa	Chinoda and Mashamba (2021)	Cogent Economics & Finance,	This study analyses the relationship between financial inclusion, financial technology, and income inequality in 25 African countries.
3	FinTech ecosystem practices shaping financial inclusion: the case of mobile money in Ghana	Senyo et al. (2021)	European journal of information systems	The paper elaborates a theory that can explain the role of fintech in the financial inclusion in Ghana.
4	Fintech-based Financial Inclusion and Risk-taking of Microfinance Institutions (MFIs): Evidence from Sub-Saharan Africa	Banna et al. (2022)	Finance Research Letters	This research investigates the impact of fintech-based financial inclusion on the risk-taking in microfinance institutions in the SSA region.
5	Examining the Relationship between Digital Finance and Financial Inclusion: Evidence from MENA Countries	Al-Smadi (2022)	Borsa Istanbul Review	This study examines the relationship between digital finance and financial inclusion in the Middle East and North Africa (MENA) region
6	Artificial Intelligence in Africa: Challenges and Opportunities	Arakpogun et al. (2021)	Springer Nature	The article discusses the problem-driven approach to drive recommendation for African governments robust artificial intelligence policies to be used.

7	ICT Adoption and Stock Market Development in Africa: An Application of the Panel ARDL Bounds Testing Procedure	Igwilo and Sibindi (2021)	Journal of Risk and Financial Management	This study examines the causal relationship between ICT adoption and stock market development in Africa.
8	Neo-colonial credit: FinTech platforms in Africa	Langley and Leyshon (2022)	Journal of Cultural Economy	This paper discusses the fintech in Africa.
9	Fintech urbanism in the startup capital of Africa	Pollio and Cirolia (2022)	Journal of Cultural Economy	This paper argues for a more descriptive, ambivalent, and urban reading of the implications and stakes of fintech in South Africa.
10	Predicting FinTech innovation adoption in South Africa: the case of cryptocurrency	Mazambani and Mutambara (2019)	African Journal of Economic and Management Studies	the purpose of this paper is to apply the theory of planned behaviour (TPB) to predict behavioural intention to adopt cryptocurrency
11	Determinants of FinTech payment services diffusion by SMEs in Sub-Saharan Africa: evidence from Ghana	Coffie et al. (2020)	Information Technology for Development	The study assesses the determinants of the diffusion of FinTech Payment Services (mobile money, card, and online payments) by SMEs in the context of Ghana

Source: Authors' compilation from various sources

5. Conclusions

The study has discussed the role of AI on financial inclusion in the African context. Through a systematic literature review, it has been found that fintech is a revolutionary technology that boosts financial inclusion in Africa, especially through mobile money and crowdfunding models. Although AI is not well spread in Africa, and most countries are still not using it, it has a predominantly positive effect on countries' economic development that makes use of it so far. Also, it has been found in the research that the main barriers which hamper African countries from developing fintech models are the weak financial infrastructure, poverty, and low internet connectivity. Hence, it is recommended for the African governments and decisionmakers to adopt initiatives that can enhance the use of technology to alleviate poverty and achieve inclusive economic growth.

This study is a conceptual paper where no empirical data was collected and there are no statistical tools used. The methodology used in this paper in the systematic literature review to analyse the latest update on the topic in Africa. Therefore, future studies can use primary data collected from selected African countries to get more findings and interpretations to explore AI's impactful role in financial inclusion.

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An Analysis of the Joint Liability Model in Bangladesh: Lessons for the Islamic Microfinance Institutions

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Abstract

As a powerful tool for eradicating poverty, microfinance enables the underprivileged to rise up the social and economic ladders, contribute to society, and lessen their vulnerability. As a novel financial tool, Islamic microfinance can also help the impoverished escape the cycle of poverty. Bangladesh has millions of people who are living in abject poverty because of their inability to use formal financial services. Hence, to improve the conditions of the poor, a good number of microfinance institutions have come forward with a variety of microfinance products. Most significantly, different microfinance institutions like the Grameen Bank and the Islamic Bank Bangladesh Limited (IBBL) have started their microfinance programmes that have achieved immense success in Bangladesh. This study aims to analyse the lessons the Islamic microfinance institutions (IMFIs) can take from the success of the Grameen Bank and its joint liability model. Using the systematic literature review (SLR) approach, this study does a comparative analysis between the operations and success of the joint liability model of Grameen Bank and the Rural Development Scheme (RDS) of IBBL. It also offers some useful recommendations for the IMFIs generally so that they can enhance their impact on the poor and vulnerable people through Islamic microfinance schemes. The outcomes of this study can be vital for practitioners and entrepreneurs who want to start the operations of new IMFIs, specifically in Bangladesh.

Keywords: *Islamic microfinance, Rural Development Scheme (RDS), Joint liability model, Grameen Bank, IBBL*

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1. Introduction

Microfinance, characterised as the provision of financial services to the poor and disadvantaged of a society who are unable or unwilling to accept mainstream financial institutions, can play a key role in reducing poverty (Muhammad, 2022a). It can eventually enable the impoverished to join the labour force and improve their economic and social circumstances. In conventional microfinance programmes, small amounts of loans are often granted for a brief period. Microfinance models like the joint liability models are also distinguished by the prompt payment of repeat loans when the prior loans are repaid on time, the availability of services at convenient times and locations, and the streamlined evaluation of investments and borrowers. In most instances, microfinance providers attempt to ensure that the loan money reaches those who are experiencing extreme poverty and hardship (Muhammad, 2022a). All of the loan recipients are included in specific groups, and all of them within a particular group share the liability or risk for these loan repayments. For this reason, this model is called the 'joint liability' model (Gallenstein et al., 2020).

Islam prohibits, however, the predetermined price of capital, recognised as interest/Riba, which is strongly associated with traditional microfinance. Due to their faith and social restraints, many pious Muslims attempt to avoid microfinance based on interest (Islam et al., 2020). As documented by Cameron et al. (2021), over 20% of underprivileged people in some Muslim-majority countries chose not to engage in conventional microfinance programs due to the existence of riba in these microfinance programs. Islamic microfinance

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provides an alternative for impoverished individuals to escape the cycle of poverty in an efficient and Shariah-compliant manner, thus assisting them in improving their overall socio-economic conditions. Islamic microfinance programmes can also offer these individuals a golden opportunity to significantly improve themselves and contribute to the society and the nation (Muhammad, 2022b).

Millions of unemployed individuals routinely stress Bangladesh's economy (Hossain, 2021). As found by Banu et al. (2021) various microcredit programmes in Bangladesh have significantly helped both rural and urban poor households to improve their standard of living by increasing income, saving, and expenditures, as well as reducing poverty. Islamic microfinance programmes like the Rural Development Scheme (RDS) can also offer these individuals a fantastic opportunity to significantly improve their lives, those of their communities, and the nation. If properly implemented, Islamic microfinance programs have the potential to change the course of Bangladesh's poor and helpless people's lives and enable them to lead fulfilling lives.

2. Literature Review

According to Mansori et al. (2020), the act of offering borrowers, primarily low-income consumers, various financial services that the general financial institutions typically disregard owing to a lack of assets or collateral is known as microfinance. It also helps low-income individuals achieve financial independence by providing them with access to financial services that enable them to move money, save money, and/or buy insurance (Mansori et al., 2020). To put it another way, microfinance promotes the development of small businesses, employment, and economic growth—all of which contribute to the emancipation of low-income individuals from poverty (Mansori et al., 2020).

The origins of microfinance can be found in Bangladesh, where Nobel laureate and Grameen Bank founder Prof. Muhammad Yunus launched microcredit programs using the joint liability model in the 1970s (Alaro and Alalubosa, 2019). Through microfinance, Grameen Bank showed significant success in reducing poverty-related suffering and allowing impoverished women to become financially independent (Alaro and Alalubosa, 2019). Since then, numerous additional microfinance institutions have emerged and launched their businesses around the nation. As a result, Bangladesh's microfinance sector has grown significantly over the past four decades (Hossain and Abdullah, 2019).

As argued by Tamanni and Besar (2019), the failure of traditional banks and other financial institutions to reach out to microentrepreneurs or poor families who are in severe need of financing is what gave rise to the microfinance movement. Asymmetry in information and issues with agencies are further causes of this market failure. All of them contributed to the development of Grameen Bank, Bank Rakyat Indonesia Unit Desa, Accion, BancoSol, and many more forerunners in microfinance that supplemented the respective governments of Bangladesh, Indonesia, India, and Bolivia's programmes to reduce poverty (Tamanni and Besar, 2019). In order to fulfil the greater goal of expanding financial inclusion, the MFIs' focus has also changed from solely providing microcredits to small business owners to providing a variety of financial products, like insurance and savings, that meet the growing needs of the underprivileged (Tamanni and Besar, 2019).

The microfinance system has unique features, especially the microcredit system that has gained popularity in Bangladesh. The ideas based on the joint liability method are used by numerous well-known microfinance organisations operating in Bangladesh, including Grameen Bank, Asa, Proshika, and BRAC (Banu et al., 2021). More than 1500 NGOs (non-governmental organisations) currently engage in microfinance-related operations, in addition to government-sponsored groups like Bangladesh Bank and commercial or specialist banks like Rajshahi Krishi Unnayan Bank (RAKUB) and Bangladesh Krishi Bank (BKB) (Banu et al., 2021). Members of borrower groups are given loans by these MFIs, which secure loans using peer monitoring rather than tangible collateral (Banu et al., 2021). To guarantee that the loans are used to their fullest potential, these MFIs in Bangladesh provide loans as well as education, skill-based programs, and training facilities to microentrepreneurs and low-income borrowers (Banu et al., 2021).

Microcredit, microinsurance, microsavings, microequity, and many other microfinance products are commonly used by MFIs. These microfinance products are thought to be a more effective instrument for outreach and cost recovery when lending to the underprivileged (Kumari, 2020). According to Ahmad et al. (2020), microfinance institutions (MFIs) strive to attain a "double bottom line" by simultaneously ensuring solid financial performance and favourable social consequences. By the end of 2017, 981 MFIs have filed performance reports to the Microfinance Information Exchange (MIX Market), confirming 139 million customers and an estimated US$114 billion in loan volume worldwide, according to Ahmad et al. (2020).

Again, Islamic microfinance (IsMF) is an interest-free, no-collateral lending method that offers small loans to the needy (Islam et al., 2020; Mansori et al., 2020). Islam et al. (2020) noted that Islamic microfinance programs have two goals. First, by helping the underprivileged financially and technologically and encouraging generosity and empathy by abiding by the Shariah principles, Islamic microfinance aims to advance social well-being. The second objective is achieving institutional sustainability and financial gain through the provision of personal loans to economically marginalised business owners. According to Ahmad et al. (2020), Islamic microfinance is based on four major principles:

(1) Interest is absolutely prohibited.

(2) Although the most popular Islamic microfinance programs do not adhere to conventional profit-and-loss sharing notions, lenders are reimbursed through profit sharing.

(3) Islamically banned activities, such as *maysir* (gambling), alcohol, and borrowing and lending to conventional MFIs that charge interest, are not permitted to be funded by MFIs.

(4) Contractual provisions must be entirely clear and free of all ambiguity due to the prohibition of *gharar* or uncertainty.

According to Cameron et al. (2021), most Muslims frequently wish to avoid traditional microfinance services, especially microcredit, because of religious obligation. Both giving and receiving interest-bearing loans, in their opinion, are usually considered to violate the principles of Shariah law due to the prohibition of riba, and Shariah law particularly favours risk-sharing between lenders and borrowers under the profit-sharing principle. Contrarily, traditional microcredit contracts are designed to give the microfinance institution a guaranteed return on each contract while subjecting borrowers to the risk of unpredictable returns (Cameron et al., 2021).

Islamic MFIs offer a significant alternative to traditional MFIs that raise ethical questions about the societal effects of high interest rates and commercialisation, as claimed by Ahmad et al. (2020a). They conducted a global survey and discovered that the market for Islamic microfinance has expanded recently, and there are great chances that it will be in all parts of the world. According to Fan et al. (2019), Shariah-compliant Islamic MFIs have a lower credit risk than traditional MFIs because these Islamic MFIs have strong incentives to engage in and oversee the projects of the entrepreneurs due to their risk-sharing nature. But these Islamic MFIs are also less profitable and financially not stable (Fan et al., 2019). They do, however, reach out to more people in need and are less likely to "mission drift." However, As found by Nabi et al. (2017), only 5% of Bangladesh's microfinance market is currently accounted for by Islamic microfinance, even though more than 37 million poor individuals there are currently benefiting from various conventional microfinance programs. Hence, it is important to analyse the ways these IsMFIs can adopt to popularise Islamic microfinance products in different areas in Bangladesh by following the examples of Grameen Bank and different other popular MFIs and eventually can flourish the Islamic microfinance industry in this country.

3. Research Methodology

This study adopts a systematic literature review (SLR) approach and applies content analysis and library research methods to collect, process, and interpret the relevant qualitative data. Different research databases, including Emerald Insight, Mendeley, Scopus, and Google Scholar, are used to select the articles necessary for this study. All the source articles are peer-reviewed and published in various indexed journals and conference proceedings in the last five years. The keywords used for searching the articles include 'microfinance in Bangladesh', 'Grameen Bank and Joint Liability Model, 'Success of Joint Liability Model', 'Islamic Microfinance in Bangladesh', 'IBBL and RDS', and 'Challenges in Islamic Microfinance'. The initial search yielded 117 potentially relevant papers, and by screening the titles and abstracts of these articles, 68 articles were excluded from this study. After evaluating the remaining 49 papers, 25 articles were excluded due to a lack of relevancy and comprehensiveness. Eventually, 24 articles were included in this study that satisfied all criteria.

The inclusion and exclusion criteria regarding the selection of research papers are listed in Table 1:

Table 1: Inclusion and Exclusion Criteria

Included	Excluded
Articles published between 2017-2022	Published before 2017
Full Text	Full text not available
Written in English	Written in other languages
Topics covering Microfinance, Joint Liability Model, and Islamic microfinance from Bangladesh perspectives	Topics avoiding Microfinance, Joint Liability Model, and Islamic microfinance from Bangladesh perspectives

Articles published before 2007 were excluded to ensure that the source of information is up-to-date or current. A list of the 24 papers used as the source of information for this article is presented in the following Table 2:

Table 2: List of Source Papers

Paper No.	Name of the Authors (Years of Publication)	Title of the Paper	Journal Published	Type of Study
1.	Ahmad, S., Lensink, R., & Mueller, A. (2020)	The double bottom line of microfinance: A global comparison between conventional and Islamic microfinance	*World Development*	Quantitative Analysis
2.	Ahmed, S., Islam, R., & Al-Asheq, A. (2021)	Prospective customers' behavioural intention towards Islamic microfinance Services in Bangladesh	*Institutions and Economies*	Quantitative Analysis
3.	Alaro, A. A. M., & Alalubosa, A. H. (2018)	Potential of Sharī'ah compliant microfinance in alleviating poverty in Nigeria: A lesson from Bangladesh	*International Journal of Islamic and Middle Eastern Finance and Management*	Qualitative Study
4.	Ashraf, M. A. (2018)	Use of bounded rationality theory to understand participation of women in Islamic microfinance	*Enterprise Development & Microfinance*	Quantitative Analysis
5.	Banu et al. (2021)	Effect of microfinance adoption on rural household income in selected Upazila of Kushtia District of Bangladesh	*Bangladesh Journal of Multidisciplinary Scientific Research*	Quantitative Analysis
6.	Cameron, A., Oak, M., & Shan, Y. (2021)	Peer monitoring and Islamic microfinance	*Journal of Economic Behaviour & Organization*	Mixed-Method Study
7.	Fan et al. (2019)	Security design, incentives, and Islamic microfinance: Cross country evidence	*Journal of International Financial Markets, Institutions and Money*	Mixed-Method Study
8.	Gallenstein, R. A., Flatnes, J. E., & Sam, A. G. (2020)	The role of social capital in risk-taking decisions under joint liability lending	*The Journal of Development Studies*	Empirical Study
9.	Hossain, M. I. (2021)	COVID-19 impacts on employment and livelihood of marginal people in Bangladesh: lessons learned and way forward	*South Asian Survey*	Qualitative Study
10.	Hossain, B., & Abdullah, M. F. (2019).	The Growth and contemporary challenges of Islamic microfinance in Bangladesh	*Asian People Journal*	Qualitative Study

Paper No.	Name of the Authors (Years of Publication)	Title of the Paper	Journal Published	Type of Study
11.	Islam, R., Ahmad, R., Ghailan, K., & Hoque, K. E. (2020)	An Islamic microfinance approach to scaling up the economic life of vulnerable people with HIV/AIDS in the Muslim society	*Journal of Religion and Health*	Mixed-Method Study
12.	Kassim, S. H., & Rahman, M. (2018)	Handling default risks in microfinance: the case of Bangladesh	*Qualitative Research in Financial Markets*	Qualitative Analysis
13.	Kumari, P. (2020)	Theoretical analysis of microfinance on poverty alleviation	*Journal of Economic Info*	Qualitative Study
14.	Mahmood, H., Hassan, R., & Salman, S. A. (2020).	Islamic microfinance in India: a quantitative approach	*Journal of Islamic Banking and Finance*	Quantitative Approach
15.	Mansori, S., Safari, M., & Ismail, Z. M. M. (2020)	An analysis of the religious, social factors and income's influence on the decision making in Islamic microfinance schemes	*Journal of Islamic Accounting and Business Research*	Numerical Analysis
16.	Muhammad, N. M. (2022a)	Islamic microfinance in Bangladesh: opportunities and challenges	*Asia Proceedings of Social Sciences*	Qualitative Study
17.	Muhammad, N. M. (2022b)	Why Bangladesh is falling behind in implementing Islamic microfinance system? A systematic literature review	*International Journal of Al-Quran and Knowledge*	Qualitative Study
18.	Nabi et al. (2017)	Islamic microfinance as a tool of financial inclusion in Bangladesh	*Journal of Islamic Economics, Banking and Finance*	Qualitative Study
19.	Parvej et al. (2020)	Role of Islamic microfinance in alleviating poverty in Bangladesh: A study on RDS of IBBL	*International Journal of Financial Research*	Statistical Analysis
20.	Ranabahu, N., & Wickramasinghe, A. (2022)	Sustainable leadership in microfinance: a pathway for sustainable initiatives in micro and small businesses	*Sustainability*	Qualitative Study
21.	Rathore, B. S. (2017)	Joint liability in a classic microfinance contract: review of theory and empirics	*Studies in Economics and Finance*	Qualitative Study
22.	Rohman et al. (2021)	A review of literature of Islamic microfinance from 2010-2020: lesson for practitioners and future directions	*Heliyon*	Literature Review
23.	Saki et al. (2021)	An assessment of borrower satisfaction of micro finance services in Grameen Bank of Bangladesh	*BUFT Journal of Business & Economics*	Quantitative Approach
24.	Uddin, T. A., & Mohiuddin, M. F. (2020)	Islamic social finance in Bangladesh: Challenges and opportunities of the institutional and regulatory landscape	*Law and Development Review*	Mixed-Method Approach

4. Results and Discussion

4.1 Role of microfinance in poverty alleviation and economic empowerment

It is commonly acknowledged that poverty levels can be reduced significantly and sustainably by using the right microfinance tools and services (Ahmed et al., 2021). Since microfinance enables the diversification of income-generating initiatives, it can have a long-lasting effect on reducing poverty. The meagre loans that MFIs provide to low-income borrowers might be used by them to launch new businesses. Additionally, this can assist

them with meeting their everyday demands, such as those for food and drink, medical and educational fees, and wedding costs. MFIs are viewed as a potential answer to the poverty issue in this way (Rohman et al., 2021).

Moreover, microfinance can assist women's emancipation. It has also developed into a useful tool for assisting several "unbanked" people in society. As a result, it has also significantly enhanced the rate of financial exclusion. Through all these strategies, microfinance has proven to be an effective tool for promoting economic growth and combating poverty in many regions of the world (Alaro and Alalubosa, 2019).

Additionally, microfinance can help borrowers have better housing, health, and education options and reduce their exposure to sudden deaths, crop failure, and drought. As a result, microfinance can dramatically enhance the borrower's socio-economic situation. Hence, numerous NGOs, governments, and people have stepped up to support microfinance institutions (MFIs) around the world (Alaro and Alalubosa, 2019). Furthermore, Herath (2018) contended that microfinance has the potential to significantly lower poverty through enhancing crisis-coping mechanisms, diversifying sources of income, accumulating assets, and enhancing the socio-economic circumstances of the poor. Herath (2018) concluded that households with access to credit have significantly higher household incomes than households without credit.

4.2 The joint liability model of Grameen Bank

The joint liability model developed and implemented first by Grameen Bank in Bangladesh, leverages group lending to address the issues associated with adverse borrower selection[1] and mitigate the risk of moral hazard[2] by the borrowers. Borrowers are required to form small groups and request for small loans, as mentioned by Obaidullah and Khan (2008). The microfinance institutions will outline the requirements for obtaining loans as well as the terms of repayment. For these loan repayments, all the group's members share the liability or risk. All other members of the group attempt to assist the defaulting member in making timely loan repayments. Additionally, by doing this, the dangers of default and delinquency can be reduced (Gallenstein et al., 2020).

Similar to this, as discussed by Ranabahu and Wickramasinghe (2022), in the joint liability model, microfinance recipients establish particular groups that are frequently referred to as peer groups, solidarity groups, or shared liability groups. A special group consisting of three to five individuals provides credit guarantees for one another. A centre or cluster, which is an informal village-level unit, is made up of six to ten peer groups of this kind. These clusters are used by the MFI personnel to facilitate loan distribution, share other important details, and collect weekly repayment[3]. Using the available data and their personal relationships, borrowers and informal leaders screen people and distinguish between "good" and "bad" borrowers at peer group and cluster levels. These procedures enforce or guarantee the loan is paid back in full and on time (Ranabahu and Wickramasinghe, 2022). The joint liability lending procedure explained here is illustrated in Figure 1.

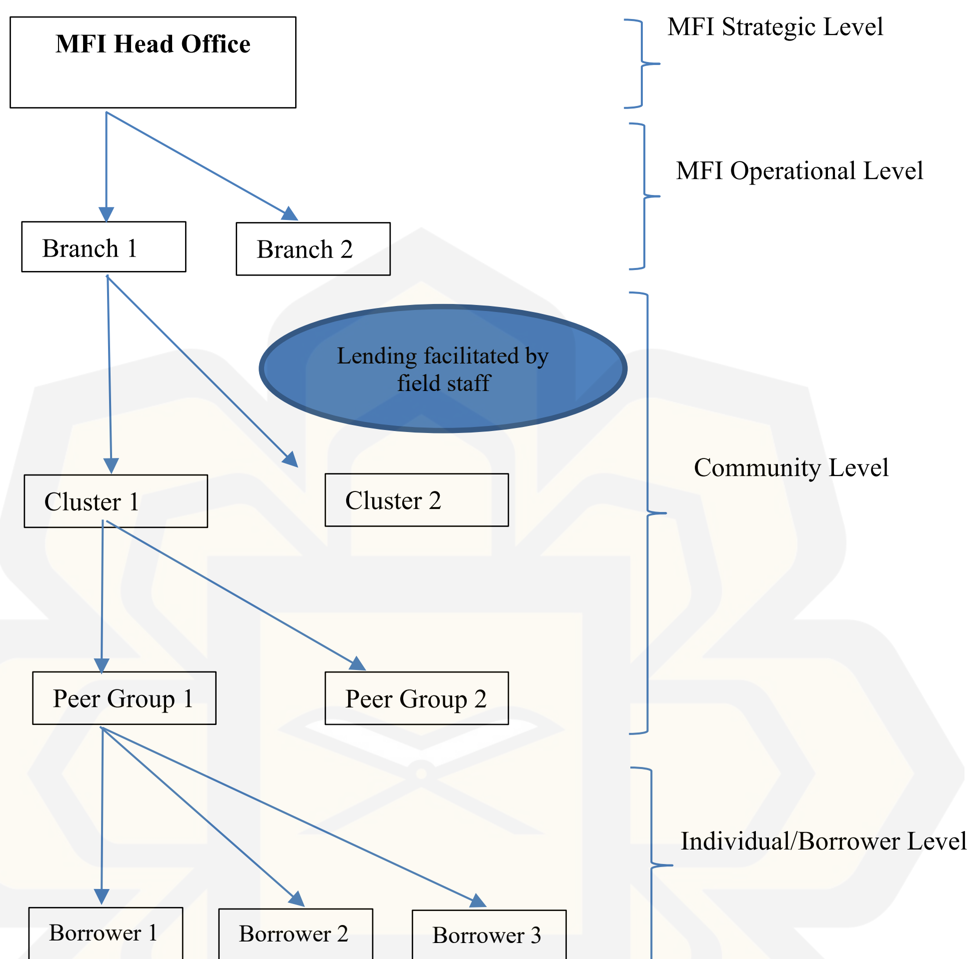
Due to the difficulty financial institutions have in successfully monitoring their debtors, moral hazard issues have been found to be reduced by using this joint liability model. In a group lending arrangement, however, everyone in the group consents to watch over one another and share obligations. Even when a member takes on dangerous initiatives but fails to repay the loan on time, other members may threaten to inflict "social sanctions" on that person (Alaro and Alalubosa, 2019). Additionally, this technique makes it very quick and straightforward for financial institutions to assess the borrowers' eligibility (Alaro and Alalubosa, 2019).

[1] The adverse selection risk exists when the borrower possesses characteristics that cannot be verified or confirmed by the MFIs but which affect his/her likelihood of repaying the loan.

[2] Moral hazard is the possibility that a party did not engage into a contract voluntarily or gave false information about its resources, liabilities, or creditworthiness.

[3] In Bangladesh, majority of the MFIs collect the payments or installments on a weekly basis from the borrowers.

Figure 1: Joint liability lending process



4.3 The success factors of the joint liability model of Grameen Bank in Bangladesh

As Rathore (2017) argued, Grameen Bank achieved immense success through its joint liability model using the proper application of peer selection, peer pressure, and peer monitoring. Even though loans are given to specific people, the group is held jointly responsible if there are problems with repayment. Through these, the joint liability model has overcome both the enforcement and informational failures that appear in the credit markets for impoverished people. When the problem of information asymmetry exists, it makes it difficult for MFIs to understand the characteristics of the borrowers. Therefore, they fail to avoid the problems related to adverse selection, which affects the lone repayment rate, leading to high transaction costs. Rathore (2017) also opined that the success of the joint liability model depends on the economic, social, and cultural environment.

Using the joint liability model, Grameen Bank has successfully overcome the following problems due to easy access to information (Rathore, 2017):

1. Avoiding investments in risky projects by the borrowers,
2. Differentiating between the good and bad risks,
3. Avoiding the reluctance of the borrowers to repay, and
4. Preventing the borrowers from strategically declaring that they are unable to pay on time.

As a result, Grameen Bank has successfully tackled issues related to default risk, i.e., when the borrowers are unable to fulfil their financial obligations at the agreed time or when the lenders fail to recover the loans properly. As found by Kassim and Rahman (2018), the loan recovery rate of Grameen Bank was 99.05% in 2016. Thus, the joint liability model has proven to be an effective instrument for the Grameen Bank to avoid moral hazards and default risks.

In addition, Grameen Bank has taken some other initiatives to improve the satisfaction of the borrowers, as well as its employees. For instance, Grameen Bank regularly arranges training programmes for its officials so that they can provide improved services to their customers or borrowers. Specific skill-development training programmes are also arranged regularly for the borrowers by the organisation. In some cases, by reducing the interest rates, Grameen Bank has become successful in attracting more borrowers. By eliminating the need for collateral, Grameen Bank (GB) has taken the lead in reversing conventional banking. As a result, a new banking system that guarantees cooperation, participation, accountability, and creativity has been established. The impoverished people in rural Bangladesh are given credit by GB without any kind of collateral. This bank, which has numerous locations across the nation, offers microcredits to the neediest individuals so that they can prosper and improve their way of life. Through all of these, Grameen Bank in Bangladesh has emerged as a major organisation that has ensured the financial sustainability of poor rural people and mobilised rural money (Saki et al., 2021).

4.4 Islamic microfinance programmes in Bangladesh

Numerous MFIs are currently in operation in this nation and are providing millions of the nation's poor with credit without the need for collateral. However, since the top microfinance companies have not yet begun implementing Islamic Shariah, the sector of Islamic microfinance is still relatively young in Bangladesh (Nabi et al., 2017). In Bangladesh, Islami Bank Bangladesh Limited (IBBL) is a prominent financial institution that introduced an Islamic microfinance initiative called the Rural Development Scheme (RDS) in 1995 (Ashraf, 2018). The RDS programme offers investment finance for a variety of industries, including agro-machinery, agricultural cultivation, poultry, cattle, nurseries, rural housing, fisheries, rural transportation, and off-farm enterprises (Ashraf, 2018). It has also been claimed by Ashraf (2018) that the RDS programme has greatly boosted household income, expenditure, employment, and agricultural and livestock productivity (Ashraf, 2018).

The operations of RDS and Grameen Bank in carrying out microfinance programs are compared in the following Table 3:

Table 3: Comparison of operations between RDS and Grameen Bank

Item	RDS	Grameen Bank
Assets or mode of financing	Non-interest-based Islamic financial instrument	Interest-based
Liabilities or sources of funds	Islamic charities, clients' savings, external funds	External funds, clients' savings
Financing the poorest	Include the poorest	Exclude the poorest (in most cases)
Transfer of funds	No cash (goods)	Cash
Target Objective	Family welfare	Women empowerment
Target group	Family	Women
Deduction at contract inception	No deduction	Partial fund deducted
Loan liability (for women clients)	Recipient and spouse	Recipient
Dealing with default	Using Islamic ethics	Peer pressure and threats
Incentives for Employees	Religious and monetary	Monetary
Nature of programme	Religious social development	Secular social development
Amount of loan	Less than US$100	Up to US$1,500, dependent on the sector
Loan repayment schedule	Flexible	Weekly instalment
Savings	Flexible	Compulsory weekly savings
Financial services	Credits, savings, education funds, micro-insurances, social welfare funds	Credits, savings, education funds, micro-insurances

Item	RDS	Grameen Bank
Cost of loans	Much less than 35 percent (annually, with no interest)	More than 35 percent (annually, including 20 percent absolute interest rate)

Source: Ashraf (2018)

Another prominent actor in the field of Islamic microfinance is Muslim Aid Bangladesh, a renowned worldwide organisation that has been active in this country since 2004. This IMFI employs public donations, subsidised funding from multilateral organisations like the Islamic Development Bank (IsDB), as well as local commercial banks to provide microcredit facilities to its customers (Uddin and Mohiuddin, 2020). Muslim Aid charges roughly a 12 percent service fee (*munafa'ah*) for Qard (personal and microbusiness cash lending), and around a 13 percent profit rate for its SME financing product called "*bai-muajjal*" (Uddin and Mohiuddin, 2020). For RDS, however, this rate is 10% (Uddin and Mohiuddin, 2020). Uddin and Mohiuddin also discovered that RDS and Muslim Aid both have loan recovery rates of over 98 percent.

However, IMFIs like RDS and Muslim Aid do not make a significant contribution to the economy of Bangladesh, comparing to other prominent conventional MFIs like the Grameen Bank (Hossain and Abdullah, 2018). Furthermore, other Islamic Banks and the Islamic divisions of conventional banks have not been effective in aggressively promoting Islamic microfinance products or developing programs with the same level of success as RDS of IBBL. Islamic microfinance is still in its early stages in Bangladesh due to these factors.

Furthermore, since there is no unified Shariah regulatory structure at the national level, all Islamic MFIs in Bangladesh rely on their own Shariah Supervisory Committees (SSCs). To obtain Shariah judgements on various financial concerns, these Bangladeshi IMFIs are always forced to rely on the fatwas (rulings) of their own SSCs. These SSCs also consult AAOIFI (Accounting and Auditing Organization for Islamic Financial Institutions) and several other international standards-setting agencies and seek advice from well-known scholars around the world, including Mufti Taqi Usmani, when making decisions (Uddin and Mohiuddin, 2020).

4.5 Challenges faced by IMFIs in implementing microfinance programmes

According to various works of literature, several factors contribute to the relative unpopularity of the Islamic microfinance system. Adhering to the principles of Islamic Shariah poses the major challenge for the IMFIs of Bangladesh. Due to poverty, people residing in various distant places, for instance, in coastal areas, are regularly denied access to Islamic microfinance programmes. In addition, some individuals exhibit indifference and apathy regarding Islamic microfinance products due to the lack of required information. Furthermore, due to the absence of efficient marketing initiatives, people frequently are uninformed of the existence of different Islamic microfinance products in their area, which hinders the expansion of Islamic microfinance programmes in various regions of the nation (Muhammad, 2022b).

Besides, the expansion of Islamic microfinance in this country has lagged behind expectations due to a number of issues, like the lack of sufficient resources, shortage of regulatory support, and the high cost of transactions (Hossain and Abdullah, 2019). Major obstacles to the growth of Islamic microfinance in Bangladesh include the predominance of conventional NGOs/MFIs and the absence of Islamic financing sources. As a result, just 5% of Bangladesh's microfinance market is accounted for by the Islamic microfinance sector, even though more than 37 million poor individuals in this nation already benefit from various microfinance programs (Nabi et al., 2017).

Hossain and Abdullah (2019) asserted that a number of issues, including a lack of enough resources and regulatory help, as well as high transaction costs, have prevented Islamic microfinance from growing as quickly as was anticipated in Bangladesh. According to the report, many funders are not well informed on Islamic microfinance, and as a result, they typically show little interest in funding such initiatives. Again, there is a shortage of workers and employees who are willing to work in remote areas to manage Islamic microfinance programmes. This makes it challenging for these Islamic MFIs to grow their business (Hossain and Abdullah, 2019).

In addition, the dominance of traditional NGOs/MFIs and the absence of Islamic financing sources pose serious obstacles to the development of Islamic microfinance in Bangladesh. Furthermore, there is a dearth of appropriate direction from higher authorities, which negatively impacts the IMFIs operating in this nation. Islamic MFIs are also not successful in this region due to the higher transaction costs and hazards (Hossain and

Abdullah, 2019).

Muhammad (2022b) also noted several additional issues that are impeding Bangladesh's Islamic microfinance initiatives from moving forward. The lack of funding and support, the dominance of traditional MFIs or NGOs, the sporadic demand for Islamic microfinance products over conventional ones, and accusations that Islamic MFIs occasionally assist extremist or militant activities are a few of these. Besides, according to Mahmood et al. (2020), there are some obstacles preventing the development of the Islamic microfinance system, including the lack of effective Islamic microfinance products, improper marketing of Islamic microfinance products, a shortage of human capital in the microfinance industry, inadequate government support, and a lack of the branches of Islamic microfinance institutions in rural areas.

4.6 What lessons IMFIs can learn from the success of Grameen Bank?

Islamic microfinance institutions (IMFIs) of Bangladesh can learn some important lessons from the examples of Grameen Bank's Joint Liability System that can help them achieve the desired success. For example, by following the joint liability model, IMFIs can ensure peer lending, peer monitoring, sharing of credit risk among group members, and homogeneity matching. Through these, IMFIs can become successful in managing the related risks and monitoring the debtors, and eventually minimising the issues related to moral hazard (Alaro and Alalubosa, 2019). In this system, every week, all group members meet with the loan officer to discuss their progress, pay the weekly instalment, and receive the required instruction. These meetings also include an explanation of the MFIs' policies and procedures. These sessions are also where the Chief of each group is chosen. When any specific member fails to repay the loan in a timely manner, other group members accept the responsibility to pay that amount; otherwise, the entire group is prevented access to future financing. This kind of microfinance approach is regarded as the most successful model globally, and Islamic microfinance institutions need to adopt it (Banu et al., 2021).

Particularly, by following the joint liability and group lending approach, Islamic MFIs can successfully overcome the problems related to information asymmetry and separation of the good risks from the bad risks. In other words, through this approach, Islamic MFIs can avoid the issues related to the adverse selection and improve the loan repayment rate quite efficiently. Eventually, these IMFIs will be able to manage the high transaction costs related to enforcement and informational problems (Rathore, 2017).

Furthermore, IMFIs need to conduct various kinds of effective marketing activities like the Grameen Bank to make Islamic microfinance products attractive to clients (Parvej et al., 2020). Additionally, specific initiatives must be taken to increase public awareness of Islamic microfinance programs and their benefits. IMFIs must participate in a variety of workshops to do this. For these products to become more well-known, Islamic microfinance issues must receive attention from both print and internet media. There is a good likelihood that if these initiatives are successful, the entire society will change, and Bangladesh's poverty rate will drop significantly (Muhammad, 2020b).

Additionally, the reviewed articles have recommended that users of Islamic microfinance products be provided with appropriate skill-development training, as offered by MFIs like Grameen Bank, to increase their earnings potential and ensure that they can return their loans without delays. These poor borrowers can access investment funds through a variety of loans, including short-term, long-term, school, and housing loans (Nabi et al., 2017). Due to higher risks and transaction costs, Islamic MFIs are also having trouble reaching a sizable portion of the population in Bangladesh. Hossain and Abdullah (2019) noted that as a result, these IMFIs need to be creative to reduce transaction costs and risks. These IMFIs should also start expanding their staff and giving them the necessary training so that they can utilise all their resources to promote Islamic microfinance products across the country. At the same time, through the equity and savings deposits of the members, these Islamic MFIs should be suitably financed (Parvej et al., 2020).

5. **Conclusion and Recommendation**

Islamic microfinance can contribute considerably and positively to enhancing the socio-economic conditions of troubled people from different regions of the world, especially in the aftermath of the COVID-19 pandemic situation. It is crucial to analyse the ways Islamic microfinance might promote to improve the financial inclusion and economic empowerment of distressed individuals, particularly in a developing country like Bangladesh. This country has also been affected hard by the pandemic's impacts. Islamic microfinance may play a key role in supporting the unfortunate people of Bangladesh and bringing smiles to their faces at the end.

IMFIs like IBBL need to learn from the successful experience of the Grameen Bank and other prominent microfinance institutions. By integrating the concepts and processes of the joint liability model and following the *Maqasid* al-Shariah, Islamic MFIs can bring success in minimising the distress of poor people, particularly those living in remote areas of Bangladesh. Through the determination and concerted efforts of the IMFI officials, recipients of Islamic microfinance products, the government, and different civil-society organisations, IMFIs can contribute significantly towards improving the economic empowerment and financial inclusion of the destitute people of this country.

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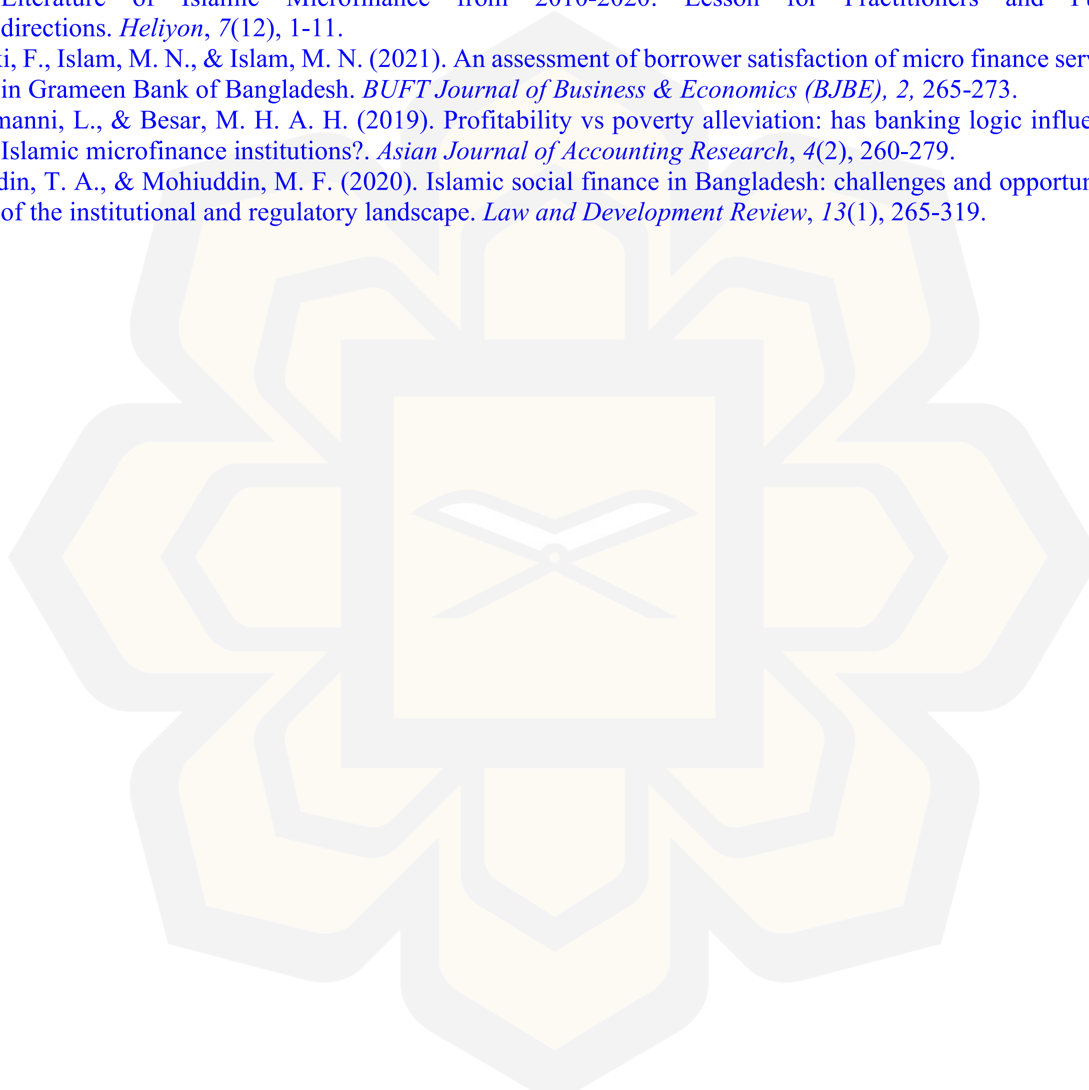

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An Assessment on the Structure of Shariah Audit Function: The Case of Malaysian Takaful Industry

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Abstract

The Islamic financial system's beneficial expansion has resulted in a rise in the number of products and services offered by Islamic financial institutions (IFIs). However, IFIs may have neglected key factors that could have had an impact on the products and services they provide which is 'Shariah compliance'. This circumstance necessitates a system of internal check-and-balance procedures. As one of the components of Shariah governance, the Shariah auditor is responsible for ensuring the efficacy of the internal control system for Shariah compliance. Prior research reveals that the current framework explains very brief on Shariah audit function, thus lead to the various practices by takaful operators which may affect the effectiveness of the Shariah audit process. The aim of this study is to assess the structure of Shariah audit function practiced by Malaysian takaful operators. To this end, semi-structured interviews were conducted involving selected Shariah auditors for every takaful operators in Malaysia. Reflexive thematic analysis influenced by a constructivist perspective was used to analyse data using a combination of inductive and deductive methodologies. Recognizing the model adapted by takaful operators can help in understanding further the execution of the Shariah audit process. At the same time, the commitment of these takaful operators can be observed in providing one of the Shariah compliance functions as required in the Shariah Governance Framework. The study discovered that none of the takaful operators in Malaysia have specific departments or unit for Shariah audit function. This study may provide relevant guidelines especially for policymaker in developing a more comprehensive framework for Shariah audit, and at the same time is useful for takaful industry in enhancing their Shariah audit function.

Keywords: *Shariah audit, Takaful, Shariah audit structure, Shariah governance*

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1. Introduction

Banking, sukuk, takaful, and Islamic funds are the four primary markets in the global Islamic financial business. Banking and sukuk are the two primary markets that contribute significantly to the Islamic finance industry's growth. Malaysia is often regarded as the world's leader in the development of Islamic finance. Malaysia's Islamic banking industry is always a step ahead of the rest of the globe, whether in terms of research, product creation, regulatory frameworks, or practical activities. Takaful is one of the components of the Islamic financial system, and it was first introduced in Malaysia in 1984, when the first takaful operator, Syarikat Takaful Malaysia Berhad, was established to meet the need of the public for Islamic principles-based protection (Hassan and Hussain, 2013). Takaful is a means of mitigating risk factors by reducing the impact of such mishaps through financial compensation (Abdulkadir et al., 2021).

Even though takaful contributes little to the Islamic finance business in contrast to other industries, the takaful market has garnered considerable attention (Husin, 2019). There is still potential for expansion in the takaful business, particularly in Muslim-majority countries. However, various obstacles have been identified that could stifle the takaful market's expansion. According to Laldin (2008), ensuring more Shariah compliance

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is one of the key challenges that must be considered to succeed in the Islamic finance industry. Following this, in 2011, Bank Negara Malaysia established a Shariah governance framework (SGF) (Bank Negara Malaysia, 2011). In general, the phrase "Shariah Governance" refers to the structures and processes that an organization uses to ensure that its business activities are in compliant with Shariah norms and principles (Ismail et al., 2016). The primary aim of Shariah governance is to ensure that the operation, practice, instrument, product, and management of the Islamic financial institutions (IFIs) are following the Shariah principles at all times (Ismail and Hassan, 2016). It is critical to earn stakeholder trust and confidence, as well as to ensure financial stability, in addition to maintaining Shariah compliance. Nonetheless, with the recent adoption of the Shariah Governance Policy Document 2019 by Bank Negara Malaysia (Bank Negara Malaysia, 2019), there have been some changes in the current practice of Shariah governance in Malaysia. This could have several positive implications for the development in Islamic banking and finance (Mohd Asri et al., 2020).

In Shariah governance, IFIs must have a Shariah audit function that is responsible for providing stakeholders with an impartial assessment of whether the organizations have an effective risk and control environment to manage Shariah non-compliance risk. The Shariah auditing guideline is crucial because it provides a distinct added value to IFIs. However, the function of Shariah audit was pronounced very brief in SGF and thus resulted in the different practices by takaful operators particularly on the structure of Shariah audit function (Kassim et al., 2013; Ahmad et al., 2015; Yussof, 2013). Recognizing the structure adapted by takaful operators can help in understanding further the execution of the Shariah audit process. At the same time, the commitment of these takaful operators can be observed in providing one of the Shariah compliance functions as required in the SGF.

From the issues discussed above, the main purpose of this study is to assess the structure of Shariah audit function adapted by Malaysian takaful industry which will answer the following research question i.e., what is the structure of Shariah audit function adapted by Malaysian takaful industry? This study will also analyse the advantages and disadvantages of all the employed structure. This paper is divided into four main sections. Literature review section discusses the takaful and Malaysian takaful industry, Shariah governance, Shariah audit and finally Shariah audit function from Malaysian regulatory perspective. Section three features the discussion on study design and methodology. Section four presents the substantial findings, and the final section contains the concluding comments and recommendations.

2. Literature Review

2.1 Takaful and Malaysian Takaful Industry

Takaful is an Islamic version of the conventional insurance. The concept of guaranteeing each other is applied in a takaful way as all takaful participants agree to contribute a sum of money to provide financial assistance to other participants if the participant encounters unfortunate events (Husin, 2019). Takaful is also known as social and ethical insurance which builds upon the concept of cooperation and mutual assistance, by agreement of a group of participants to support one another against a specific loss collectively (Salman et al., 2019). There are two types of takaful: family takaful and general takaful. General takaful is a way of mitigating the financial losses arising from incidents that causes damage to physical property, legal liability and/or death or accidental body harm. On the other hand, family takaful offers protection and long-term savings. If the participants suffer a tragedy, the beneficiary will receive financial benefits. At the same time, the participants will receive long-term financial savings, because part of the contribution would be added to the savings account.

There are few conceptual differences which distinguish takaful from conventional insurance and this includes joint guarantee, shared responsibility, concept of *al-aqilah* and risk distribution (Hussain and Pasha, 2011). *Al-aqilah* is defined as the collective party that undertakes to pay the *diya* (blood money compensation), in cases other than premeditated murder, without a right of recourse to the murderer for counter-payment. On the same ground, a study by have Sherif and Shaairi (2013) has highlighted the elements of contracts, rights and obligations of the parties, risk ownership, operation, and the nominee status to differentiate takaful and conventional insurance. A takaful contract is based on a *tabarru'* (gift) and *ta'awun* (mutual co-operation) contract, whereas a conventional insurance contract is a sale and purchase contract in which the insured buys the insurer's guarantee or pledge of reimbursement in the event of loss. Takaful varies from other conventional insurance because of the participants' rights and obligations. In conventional insurance, the relationship between the insurer and the insured is merely a business-client relationship, in which the insurer is responsible for compensating the insured in the event of a catastrophe, while the insured is responsible for paying the

premium.

Malaysia leads the takaful industry in the South-east Asian region (Husin, 2019). According to Eldaia et al. (2020), the Malaysian takaful industry, which began in 1984, was developed in three phases based on the Central Bank of Malaysia's Master Plan (Bank Negara Malaysia, 2005). The first phase, from 1982 to 1992, saw the establishment of the takaful industry's infrastructure in Malaysia. The regional cooperation between takaful operators was strengthened in the second phase (1993-2000). The third and final stage of the Financial Sector Master Plan (FSMP) (2001-current) aims to strengthen the legal, Shariah, and regulatory framework, as well as to improve the competency of takaful operators. Malaysia's takaful business has grown into a critical primary hub in the Malaysian economy, supporting Malaysia's status as a global Islamic financial centre. As of May 2021, there are fifteen takaful operators licensed by the Bank Negara Malaysia as illustrated in Table 1.

Table 1: List of Takaful Operators in Malaysia

No.	Takaful Operators	Ownership
1	AIA PUBLIC Takaful Bhd	Foreign
2	AmMetLife Takaful Berhad	Local
3	Etiqa Family Takaful Berhad	Local
4	Etiqa General Takaful Berhad	Local
5	FWD Takaful Berhad	Local
6	Great Eastern Takaful Berhad	Foreign
7	Hong Leong MSIG Takaful Berhad	Local
8	Prudential BSN Takaful Berhad	Local
9	Sun Life Malaysia Takaful Berhad	Local
10	Syarikat Takaful Malaysia Am Berhad	Local
11	Syarikat Takaful Malaysia Keluarga Berhad	Local
12	Takaful Ikhlas Family Berhad	Local
13	Takaful Ikhlas General Berhad	Local
14	Zurich General Takaful Malaysia Berhad	Foreign
15	Zurich Takaful Malaysia Berhad	Foreign

Source: Bank Negara Malaysia (2020)

2.2 Shariah governance and Shariah audit

"Shariah governance" is made up of two words: Shariah and governance. Shariah is an Arabic word that means "Islamic Law," "Islamic Rulings," or "Islamic Way of Life." In Islam, however, Shariah has extremely specific interpretations. Shariah is described as "the route to the watering place" or "the straightway to be followed" in its literal sense, and technically as "the laws that God revealed to Prophet Muhammad (ﷺ) in the Qur'an and Sunnah" in its technical sense. Shariah refers to divine laws that must be followed by all people to succeed in this life and the next. On the same ground, the term governance implies to the act of steering, leading, or directing someone or something (Hilmy and Hassan, 2019).

According to Kamaruddin et al. (2020), the interaction between organisations and their stakeholders, which include employees, creditors, the government, society, and others, is referred to as Shariah governance. Islamic Financial Service Board (IFSB) has defined Shariah governance as “Set of the strategic roles and functions of each organ of governance and mechanisms for balancing the institutions that offering Islamic financial services accountabilities to various stakeholders”. As emphasized by Bank Negara Malaysia (BNM), Shariah governance aims to improve the role of the board of directors, the Shariah committee, and the management of a company in executing Shariah compliance and operating with Shariah guidelines.

Under the Shariah Governance Framework (SGF) which was introduced back in 2011, the objectives of the framework are to establish a robust Shariah governance structure of IFIs, to provide a comprehensive guidance to the board, Shariah committee and management of the IFIs in discharging their duties in matters relating to Shariah and to outline the functions relating to Shariah review, Shariah audit, Shariah risk management and Shariah research. The functions as explained in SGF 2011 comprise of Shariah review and audit functions, which will be supported by Shariah risk management control process. It is addressed in SGF Principle 7.7 as: “There shall be a robust Shariah compliance function, comprising review and audit functions, supported by risk management control process and internal research capacity”. This statement demonstrates the importance of Shariah auditing in ensuring the proper implementation of Shariah governance among IFIs especially for

takaful industry, which is the focus of this study.

Shariah audit is considered the backbone of business accounting as it is the section that records all industry-related businesses (Khalid et al., 2017). It is also about advising entities on how to achieve their goals by managing risks and improving internal control. A previous study also argued that Shariah audit function may reflect the performance of the institutions (Md. Zain and Shafii, 2018). Commonly, the function of Shariah audit is performed by the internal audit function of the institutions. The objective of Shariah audit is to see and supervise, control and report transactions, that are useful, accurate, timely and fair reports for decision making, according to the rules and laws of Islam. Nonetheless, it is not an easy task to conduct Shariah audit in capitalistic conditions and competitive conventional financial system (Yazid and Suryanto, 2016). On the same ground, SGF (2011) defined Shariah audit as "Periodical assessment conducted from time to time, to provide an independent assessment and objective assurance designed to add value and improve the degree of compliance in relation to the IFI's business operations, with the main objective of ensuring a sound and effective internal control system for Shariah compliance" (Section 7.7, page 23).

2.3 Shariah audit function from the Malaysian regulatory perspective

2.3.1 Islamic Financial Services Act (IFSA) 2013

The IFSA 2013 aims to regulate and oversee IFIs, payment systems and other relevant entities. The introduction of the IFSA begins on 30th June 2013, replaces the previous Takaful Act 1984. IFSA 2013 combines both the regulations for Islamic banking as well as takaful. There is also one division in IFSA 2013 which highlights on the specific requirements for Shariah audit as summarized in Table 2.

Table 2: Requirement for audit on Shariah compliance in IFSA 2013

Division 3: Audit on Shariah compliance	Description
Section 37 Appointment of person by institution to conduct audit on Shariah compliance	(1) The Bank may require an institution to appoint any person as the Bank may approve, to carry out an audit on Shariah compliance by the institution. (2) The person appointed under subsection (1) shall have such duties and functions as may be specified by the Bank and shall submit a report to the Bank on the audit carried out pursuant to this section. (3) The remuneration and expenses of the person appointed under subsection (1) relating to any audit on Shariah compliance under this section shall be borne by the institution. (4) A person appointed under subsection (1) shall not be liable for a breach of duty of confidentiality between such person and the institution in respect of matters reported to the Bank pursuant to an audit on Shariah compliance under this section
Section 38 Appointment of person by Bank to conduct audit on Shariah compliance	(1) Without prejudice to section 37, the Bank may appoint for an institution any person to conduct an audit on Shariah compliance: (a) if the institution fails to appoint a person under subsection 37(1); (b) in addition to the person appointed under subsection 37(1); or (c) under any other circumstances as the Bank deems appropriate for the purposes of compliance with Shariah by the institution, and the remuneration and expenses relating to such appointment shall be borne by the institution. (2) The person appointed under subsection (1) shall have such duties and functions as may be specified by the Bank and shall submit a report to the Bank on the audit carried out pursuant to this section. (3) A person appointed under subsection (1) shall not be liable for a breach of duty of confidentiality between such person and the institution in respect of matters reported to the Bank pursuant to an audit on Shariah compliance under this section

Sources: (IFSA, 2013)

2.3.2 Policy document on Shariah governance 2019

The policy document on Shariah governance was introduced on 20th September 2019 and shall be effective starting from 1st April 2020. In relation to the takaful industry, this new policy will supersede a few other policy documents known as Shariah Governance Framework for IFIs issued on 22 October 2010 and Paragraph 13.5 of Financial Reporting for Takaful Operators issued on 2nd February 2018. This policy document aims to further enhance the effectiveness of the implementation of Shariah governance and reinforce a closer integration of Shariah considerations into IFIs ' business and risk strategies.

Before the introduction of these policy documents, IFIs must comply with the SGF which was introduced back in 2010. The SGF was found to be an important mechanism in ensuring that IFIs fulfil their roles in accordance with Shariah principles in the interests of depositors, investment account holders, shareholders, and stakeholders (Mohamad et al., 2016). Among the aims of SGF 2011 is to provide a proper regulatory framework for IFIs to operate within the required Shariah framework that will further enhance international investor confidence in the country's rapidly growing Islamic finance industry.

There is a clause specified in the SGF 2011 on this issue which states the following: "The function shall be performed by internal auditors, who have acquired adequate Shariah-related knowledge and training. In addition, the internal auditors may engage the expertise of the IFI's Shariah officers in performing the audit as long the objectivity of the audit is not compromised" (Section 7.8, page 23). Previously, a few studies have proposed that the Shariah audit function is to be performed by external auditor (Shafii et al., 2015; Ahmed, 2017; Arwani, 2018). In fact, AAOIFI and the IFSB, the two international standard-setting bodies of Islamic banks have also included external Shariah audit in their standards (Ahmed, 2017).

SGF 2011 also determined that the function of Shariah auditor should be under the control of the audit and examination committee and Shariah Supervisory Council which means that the auditor should report to the board audit committee and Shariah committee of the institutions. In contrast, the new policy document has established one section for control functions and the Shariah audit function was categorized under this function together with Shariah review function and Shariah management function. These control functions must ensure that there should be an effective management for Shariah non-compliance risk. It also clearly indicates that every IFI must provide sufficient resources for the control functions, including the establishment of a sufficient number of officers with the necessary skills and experience.

Thus, it can be concluded that there were only brief descriptions on Shariah audit function which resulted IFIs to have different practices in determining the structure of their Shariah audit function. Below are the important points that were taken into considerations by takaful operator when setting up Shariah audit function:

1. Independent assessment
2. Qualified to perform internal audit
3. Have the requisite knowledge on Shariah requirements

3. Research Methodology

The purpose of this study is to assess the structure of Shariah audit function adapted by Malaysian takaful industry. Data were gathered through in-depth, face-to-face interviews. Interviews were chosen as the main method of data gathering because they allow for a thorough understanding of the structure of the Shariah audit function. There were fifteen (15) takaful operators in Malaysia and all the takaful operators involved in this study. One auditor was selected to represent each of the takaful operator.

Electronic mail was sent to the respondents to get their consent on the interview session. Interviews were audio-recorded and verbatim transcribed. Reflexive thematic analysis influenced by a constructivist perspective was used to analyse data using a combination of inductive and deductive methodologies. Interviews varied in length from 40 minutes to 1 hour. The interviewees have at least three years of experience as auditors and six years of experience in the takaful industry. Table 3 illustrates details of respondents involved in this study.

Table 3: Details of interviewees

Interviewees	Gender	Highest Qualification	Role	Years of experience in industry	Date of the interview
Respondent 1	Male	Bachelor in accounting	Principal Auditor	11-15years	June 2019
Respondent 2	Female	Master in Islamic Finance Practice	Senior Manager, Shariah Department	11-15years	June 2019
Respondent 3	Male	Bachelor in Accounting and Finance	Senior Manager, Internal Audit	11-15 years	June 2019
Respondent 4	Female	Bachelor in Accounting	Manager, Internal Audit	6-10 years	July 2019
Respondent 5	Female	Bachelor in Accounting and Finance	Manager, Internal Audit	10-15 years	July 2019
Respondent 6	Male	Bachelor in Accounting	Assistant Manager, Internal Audit	6-10 years	July 2019
Respondent 7	Female	Bachelor in Accounting and Finance	Audit Associate	10-15years	August 2019
Respondent 8	Female	Bachelor in Accounting	Audit Associate	10-15 years	June 2019
Respondent 9	Female	Bachelor in Accounting	Audit Associate	10-15 years	August 2019
Respondent 10	Male	Bachelor of Islamic Revealed Knowledge and Heritage in Qur'an and Sunnah Studies	Manager, Internal Audit	6-10 years	July 2019
Respondent 11	Male	Bachelor in Finance	Head of Internal Audit	16-20 years	July 2019
Respondent 12	Male	Bachelor in Accounting	Manager, Internal Audit	6-10 years	July 2019
Respondent 13	Male	Bachelor of Law	Senior Manager Shariah, Legal and Secretarial, Governance & Strategy	6-10 years	July 2019
Respondent 14	Female	Bachelor in Accounting and Finance (specialism in internal audit)	Manager, Internal Audit	11-15 years	June 2019
Respondent 15	Male	Master in Islamic Finance Practice	Manager, Internal Audit	15-20 years	July 2019

Sources: Authors

4. Results and Discussion

The following analysis are provided to answer the main research question (What is the structure of Shariah audit function adapted by Malaysian takaful industry?)

4.1 Structure of Shariah audit function

According to the respond from the participants, none of the takaful operators in Malaysia have specific department or unit for Shariah audit function. However, the majority of takaful operators either appoint one specific Shariah auditor in the internal audit department or embed their Shariah audit function in their internal audit function. This is in line with the structure of Shariah audit function (Deris, 2018) as in Figure 1.

Figure 1: Structure of Shariah audit function in IFI

Model I)Appointment of dedicated shariah auditor

- Establishment of specific Shariah audit department or unit

Model II)Hybrid

- IFIs do not have any specific Shariah audit department, but appoint specific Shariah auditor(s) in the internal audit department. Usually the auditor will not respond to all audits, just for Shariah audit only. The auditor could also be the reference for the internal audit findings for the audit team and they do not have to refer to the Shariah department.

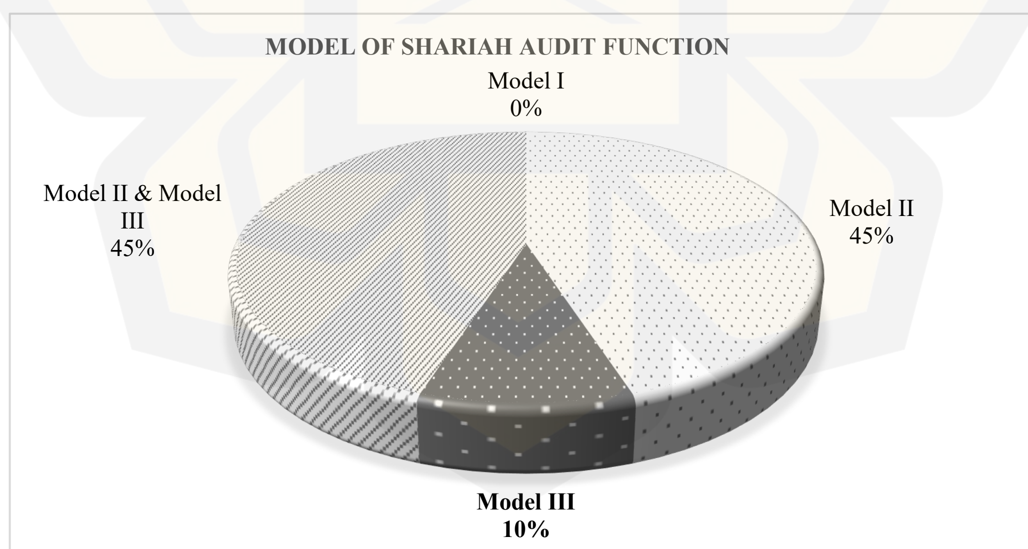
Model III) Embedded Shariah audit function in internal audit function

- IFIs embed a Shariah audit program with a mandatory internal audit and will refer to the Shariah department when they have any Shariah issues.

Sources: Adapted from Deris (2018)

However, there is a slight difference in the findings of the current study as compared to the structure as described by Deris (2018). This is because some of the practices of takaful operators' structure are lying between Model II and Model III which means that the characteristics of the Shariah audit structure come from these two models. The percentage of the adaption of Shariah audit function model based on the categories can be summarized as in Figure 2.

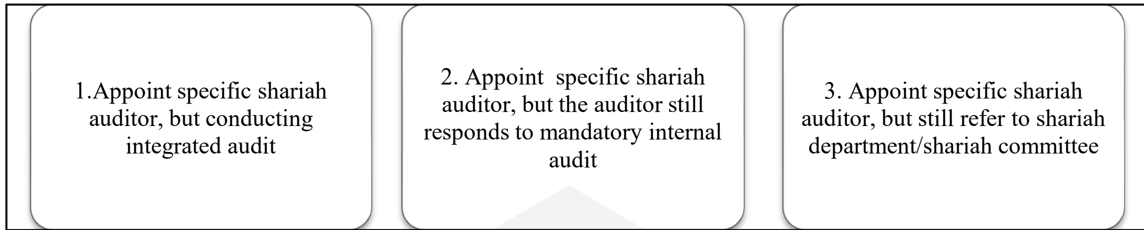
Figure 2: Percentage of takaful operators based on the categories for Shariah audit function model



Sources: Authors

Figure 2 shows that 0% of takaful operators are adapting Model I, 45% are adopting Model II, 10% are adapting Model III and another 45% are adopting Model II and Model III. Adapting Model II and III means that the structure of their Shariah audit function has characteristics from both models. Figure 3 highlights the characteristics of Shariah audit structure of takaful operators which allows it to be categorized under Model II and Model III.

Figure 3: Category of Shariah audit structure resulting from combination of hybrid model and embed all auditors' model



Sources: Authors

Based on the findings, it is notable that the majority of takaful operators appoint one specific auditor to conduct the Shariah audit function based on the statistics which shows that 45% of takaful operators adapted a hybrid model and another 45% adapted a combination of hybrid model and embed all auditors' model. However, commonly, the Shariah auditors appointed are still involved in mandatory audit and have an active engagement with the Shariah department or in some cases with the Shariah committee. There are many reasons behind the adaption of a combination between Model II and Model III. Firstly, this happened because of the issue of competency faced by the takaful industry especially in recruiting talent which have good command in both Shariah knowledge and accounting knowledge.

Based on the background analysis, the education background of the auditors can be categorized into three areas: accounting and finance, Shariah, and others. Majority of the auditors were from the accounting or finance background and only one auditor has Shariah background. In one instance, it happened that the auditor is neither from the accounting nor Shariah background but graduated in the architecture field. Majority of the Shariah auditors also admitted that they themselves are still not qualified to become competent Shariah auditors as they still need to undergo the specific training on Shariah. It is also observed that the takaful operators are very committed in arranging the necessary courses and professional training to enhance the knowledge and competency of its Shariah auditors especially in the Shariah field. This is also one way of solving the issues of talent development in IFIs.

Secondly, another reason why the Shariah audit model is overlapping between Model II and Model III is due to the size of the business. Typically, there will only be two or three persons in the internal audit department due to the size of takaful business, which is relatively small compared to the Islamic banking industry. This main reason makes it impossible for the takaful operator to establish one specific department or unit for the Shariah audit function. Hiring additional staff means that the takaful operator must incur additional cost, which is the main concern for every business.

Thirdly, the structure and nature of the business also become the factors why takaful operators are characterized in Model II and Model III. About 2/3 of takaful operators in Malaysia are not only takaful services providers, but they are also insurance services providers as well. Commonly, a Shariah auditor is placed at the group level as they offer shared services, which means that the auditor is not only conducting Shariah audit for the takaful company, but also for other businesses which consist of any Islamic services. In some cases, there is only one Muslim auditor at the group level, and because of that he/she is appointed as the Shariah auditor, but at the same time must respond to mandatory internal audit. There is also a takaful operator which outsources their internal audit from conventional insurance providers.

Only one out of the eleven takaful operators has not appointed one specific Shariah auditor, but they have a Shariah audit function in the internal audit department. In other words, this takaful operator is the only operator which adapts the embed all auditors' model. The reason for the non-existence of a separate Shariah audit personnel is because the auditors feel that there is an issue of redundancy with the Shariah review function. Besides, the takaful operator offers only Islamic products and services, and this becomes the main reason for integrating the Shariah audit with operational audit. Normally, when the auditor is conducting their operational audit, the auditor will start by doing the review according to the functions of each department and then examines any Shariah issues.

However, there might be ineffectiveness in the Shariah audit process by adapting the embed all auditors model because of unspecified task given to the auditors. One of the factors in ensuring the effectiveness of audit function is resources adequacy which includes having specific skills for specific function (Alzeban and Gwiliam, 2014; Ahmad, 2015; Ofori and Lu, 2018). For example, in auditing IT, takaful operators need auditors with IT skills. The same goes for Shariah audit function which requires someone with Shariah skills, and therefore a takaful operator must at least have one specific person to conduct the Shariah audit function. Therefore, it is important to have the existence of a specific person who is taking charge for the Shariah audit function.

Another possibility that might happen by adapting the embed all auditors model only is they might overlook some of the Shariah issues. This is due to, when conducting the mandatory audit, the auditors are focusing on the operational part. In certain circumstances, the auditor is not competent enough in evaluating the Shariah risk. Due to this, the auditor must have an active engagement with the Shariah department or both functions can work together in ensuring the Shariah audit function is able to achieve its objective. Besides that, the auditor could also engage with the Shariah committee and must ensure the involvement of Shariah committee is not during the reporting stage only.

Although none of the takaful operators have a specific department or unit for Shariah audit, the hybrid model (Model II) serves as the best option. However, this type of hybrid model requires a competency framework to enhance the Shariah audit function as suggested by Mohd Ali et al. (2014). Based on their observations, it is good if the takaful operator can allocate auditor with Shariah background in the internal audit department to oversee the Shariah audit function. Having an integrated background in internal audit rather than having only accounting or finance background would be an added advantage to the Shariah audit function.

The advantage of having an integrated background in internal audit function provides diversification in the risk assessment process. For instance, auditors with Shariah background will detect risks related to Shariah due to their expertise in Shariah whereas the auditor with finance or accounting background normally will be able to detect the risk which is related to business operation. The concept of an integrated background of the auditor can be applied by taking an example from the requirement of having a diversified background of Shariah committee members.

A study by Abdul Rahman and Bukair (2013) argued that the combination of Shariah and other qualifications, in this case accounting or finance qualification, would assist team members to better comprehend not only on Shariah issues, but other related accounting issues. Another finding by Noordin and Kassim (2019) revealed that Islamic banks with a bigger size of Shariah committee whose majority members have an outstanding understanding of Shariah with expert involvement in other relevant knowledge backgrounds such as finance, accounting and economics provide better disclosure of Shariah issues in the IFIs. Therefore, having at least one auditor with Shariah background in the internal audit department is the best solution.

After the discussion on each of type of the model, thus it can be summarized that each of the models has its own advantages and disadvantages. Table 4 shows the advantages and disadvantages of adapting the three types of models of Shariah audit function which are currently adapted by takaful operators.

Table 4: Advantages and disadvantages of adapting hybrid model, embed all auditors model and combination of hybrid and embedded all auditors' model

Shariah audit model currently adapted	Hybrid model	Embed all auditors model	Combination of hybrid model and embedded all auditors model
Advantages	• Cost saving because there is no need to set up a new unit or department • Specification of skills	• Cost saving because there is no need to set up a new unit or department • Efficient use of resources	• Cost saving because there is no need to set up a new unit or department • Specification of skills • Active engagement with Shariah department
Disadvantages	• Talent development issues	• No specific person in charge for Shariah audit	• Auditors still have to respond to other audit activities

Sources: Authors

Table 5: Themes, categories and responds relating to the models of Shariah audit function

Themes	Category	Responds
Models of Shariah audit	Hybrid	"I'm the only one who is responsible for Shariah audit and develop Shariah audit manual." (R1) "I am an audit associate, or a Shariah auditor and my reporting line is to Chief of Internal Auditor." (R4) "We are at the group level because Islamic business is our portfolio, so whichever part that has Islamic presence we have to cover…and whenever they want to do Shariah audit for takaful, we will integrate with the internal auditor for insurance." (R7)
	Embed all auditors	"I'm the head operational audit and at the same time, I also cover for Shariah part. We don't have separate team for Shariah audit. Nobody is doing Shariah audit..." (R5) "We don't have one specific assignment for Shariah…because at the end of the day it is like in terms of operation we also must check back on Shariah. So, we feel like there is a redundancy. So, we stopped separating Shariah audit and now we incorporate all the Shariah scope and perspective into operational audit..." (R5)
	Combination of hybrid and embed all auditors	"I am in Internal audit for this Takaful Operator and there are only two staff in this department. I will report to Chief of Internal Audit at Group level…I'm doing the internal audit for Takaful operation or whenever we have inadequate resources. However, I'm the one who is responsible for Shariah audit…" (R3) "I am the only Shariah auditor for this organization and occasionally, I have to perform operational audit..." (R9) "We have one Shariah auditor, but now she is not qualified…she is from the architecture background, and she is very interested to join. So, I gave her the opportunity..." (R11) "I am the only person in charge of Shariah audit, and I am also involved with operational audit. I work closely with Shariah officer and Shariah committee..." (R12) "I am the only Muslim in this department, so I am the one who conducted Shariah audit and at the same time conducting operational audit..." (R14) "I am in charge for Shariah audit…but for this organization this function is still new..." (R15)

Sources: Authors

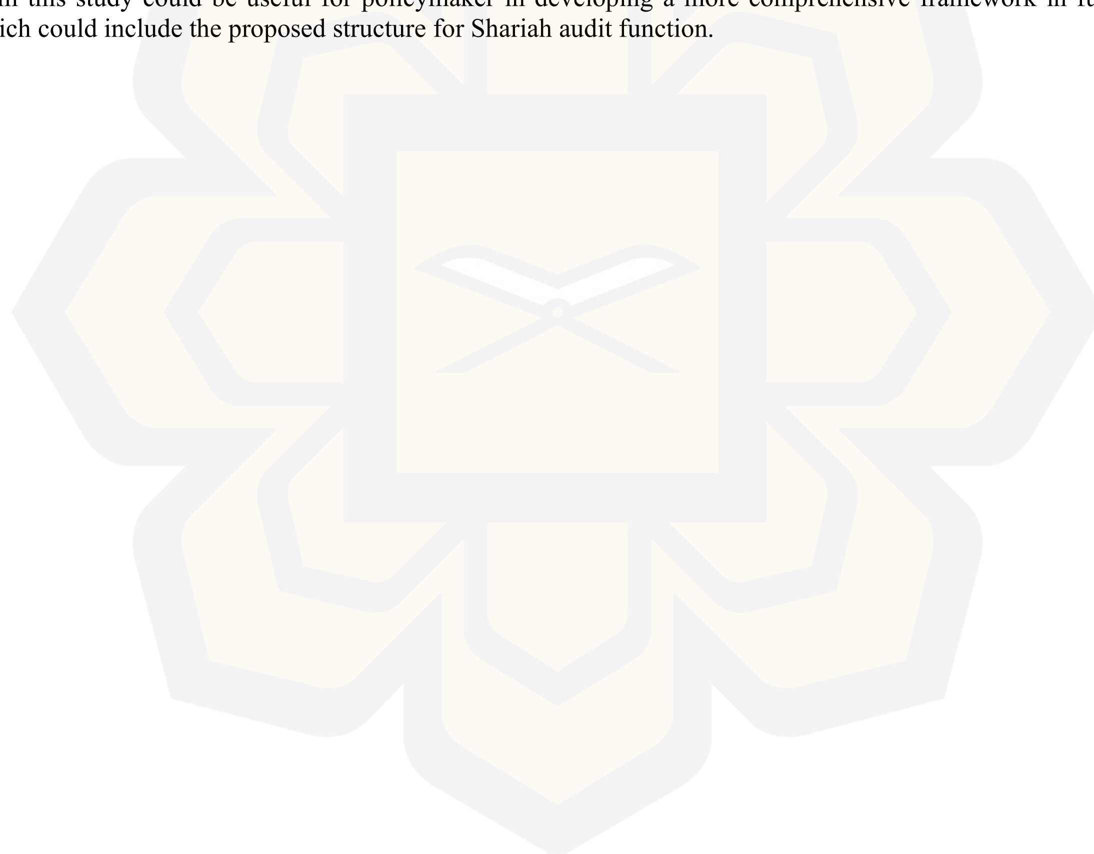
The structure of Shariah audit or model adapted by takaful operators for conducting Shariah audit will affect the effectiveness of Shariah audit function. As recommended by most of the respondents, takaful operators should have one specific auditor which specifically performs the duty of Shariah auditor. As commonly practiced, most IFIs would have the same person conducting mandatory audit while at the same time play a role as a Shariah auditor (Yazkhiruni et al., 2018). As a result, the auditor might not be able to focus on the scope of Shariah while doing the Shariah audit process as normally they would conduct the normal audit together and there is a chance that the auditor might overlook some important issues or at some other time, they might accidently find the Shariah issues.

To avoid this situation, takaful operators should have one specific auditor which specifically performs the Shariah audit function although the Shariah auditor is placed in internal audit department. A study by Isa et al. (2020) has proved that majority of the practitioners agreed that the presence of an in-house internal audit unit for Shariah audit in IFIs is crucial. It is not deniable that many takaful operators might not be able to provide a separate and specific Shariah audit department to cater for the need of having a Shariah audit function due to the limited resources such as limited budget and limited human resources. Management also does not want to incur high cost in setting up a separate Shariah audit department. As a solution, in the short run, to ensure the function of Shariah audit is effective, one dedicated person should be hired to conduct Shariah audit which still can be placed in internal audit department to avoid takaful operators from incurring so much cost.

5. Conclusion and Recommendation

The findings of the current study highlighted on the structure of Shariah audit function adapted by Malaysian takaful operators. The Shariah audit structure or model adapted by takaful operators for conducting Shariah audit will have an impact on the Shariah audit function's performance. According to most respondents, takaful operators should have one specialized auditor who is only responsible for Shariah auditing. Although the Shariah auditor is positioned in the internal audit department, takaful operators should have one dedicated auditor who performs Shariah audit functions. The findings of the study are important for the industry in enhancing their current Shariah audit practice particularly in determining the structure of their Shariah audit function.

However, when interpreting the outcomes of this study, it is important to keep in mind its limitations. First, this study focusses solely on takaful industry. Another area for further research is to examine Shariah audit function for all types of IFIs which include Islamic banks, which are more advanced in their Shariah audit function. A comparison analysis could also be performed further. A second limitation is that the data collected is based on qualitative evidence gathered through face-to-face interviews, which leaves it vulnerable to biases including memory recall and social desirability bias. The respondents, on the other hand, appeared to be sincere and confident, putting our minds at ease about the interviews' reliability. The implications that can be drawn from this study could be useful for policymaker in developing a more comprehensive framework in future which could include the proposed structure for Shariah audit function.



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Crypto-Asset. How Does Shariah Matter?*

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Abstract

In the post-COVID era, it has further been observed that, fintech is extra-ordinarily among the fastest growing chapters in the eco-financial sectors and crypto-currency is not an exception. There are mixed views within the ambit of Shariah on the existing floating models of crypto-currencies bearing a common confusion on one's intrinsic value and thus, whether they are compliant with Shariah? If not, what, and how the Shariah alternative solution may be in meeting the global Halal sentiment? The idea of crypto-asset is a new dimension with hypothetical discovery, which is quite different in nature as to crypto-currency (CC). The existing model of crypto-currency does not require an underlying asset to back the operation, while a crypto-asset in contrast, requires an underlying valued asset to back the operation and thus, positioning one bearing own intrinsic value. This paper, however, seeks to analyse the model structure, operational mechanisms, and possible Shariah review of crypto-asset (CA) within the principle of *Maqasid al-Shariah*. The research is expected to adapt hypothetical and META approaches by concluding with possible Shariah compliant strategic solution to crypto-asset in harmonizing with the contemporary eco-appreciation. The result of this research may be an added value to the current post-COVID eco-paradigm in creating an eco-opportunity for every level of people within the spirit of *Maqasid* al-Shariah.

Keywords: *Islamic, Shariah, Halal, Maqasid al-Shariah, Crypto-asset, Crypto-currency, Digital asset, Mechanisms and Shariah compliance*

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Introduction

It has been popularly known that the conceptual paradigm of digital currency through bitcoin was first initiated by Satoshi Nakamoto in 2007 by using SHA-256 Crypto-asset hash function as its proof of work scheme through the blockchain technology. Nakamoto was born on 5th April 1975 and has claimed to be a man of Japan origin living in the United States and Europe. He has mostly focused on several cryptocurrencies and computer science. In August 2008 bitcoin.org domain registration took place. In October 2008 the bitcoin whitepaper was introduced. The first trial of bitcoin was recorded on 3rd January 2009 through a Code: XBT. Bitcoin is known as decentralized digital currency by peer-to-peer network. IOTA was the first crypto-asset introduced not through blockchain technology, but by using the tangle. In the process of all categories of digital currencies, which were aimed at resolving the double expanding problem while making an economic opportunity for all levels of mankind within the legitimate frameworks. The Shariah alternative of crypto-currency or crypto-asset are among the efforts aiming at accessibility to all classes of people with less cost and minimum efforts to maximize possible economic opportunity within the holistic spirit of *Maqasid al-*Shariah (Objective of Shariah) (Mohammad and Shahwan, 2013).

Today, it has been observed that, among the top cryptocurrencies exist in the cyberspace are Bitcoin, Litecoin (LTC), Ethereum (ETH), Zcash (ZEC), Dash, Riplle (XRP) and Monero (XMR). The testing period of the bitcoin however, continued until 2010. The preparation for the execution continued until 2013 when the first real operation of bitcoin took place. As of 24 May 2017, Nakamoto is believed to own up to roughly one million bitcoin with a value estimated at approximately USD 7 billion as of November 2017. On

*It is acknowledged here that; this manuscript is a revised version with additional inputs of the original work of the author for an added value to the market.

December 31, 2017, bitcoin's value reaches USD 15,939.1348 thus, makes bitcoin among the fastest growing financial engineering with 151.082% p.a. Current price of bitcoin is tremendously decreased to USD 9532.18 as at May 06, 2018.It is further recorded that, the initial token price of bitcoin was USD 0.007, but the value increased to USD 10.85 within a year. Bitcoin began a roaring price 1 BTC=USD 770, but as at 31st of December 2017, the price hit with 1 BTC=USD 15,939.1348. Through such growing track record, the bitcoin is capturing the market on its own magnetic power without being controlled by any sovereign or specific regulatory standard.

However, the issuer or the originator or the receiver positions as a virtual sovereign with vague identity. As a result, it has been observed that, the users or expenders or investors participate in bitcoin with no significant legal or ethical protection thus, encounters the element of uncertainty (*gharar*). The Shariah alternative crypto-currency or crypto-asset are on the other hand, ensure every legal or ethical protection for investors, operators, promoters, and providers within the divine principle of al-Quran: "*O believers! Do not devour one another's wealth illegally, but rather trade by mutual consent. And do not kill ˹each other or˺ yourselves. Surely Allah is ever Merciful to you*" (Al-Quran, 4:29).

In reality, an Islamic crypto-asset's pre-requisite is to be backed by a commercially valued backing asset certified by any legal authority. It shall be operated under a registered asset management entity. The asset shall be created in a digital platform backed by valued asset. Once the asset is created, it shall carry an intrinsic value and thus shall be recognized as an intangible valued asset. Total establishment, management and operational activities and functions shall be governed by the integrated Shariah principles. An Islamic crypto-asset is operated in a digital platform and its baseline value shall be determined based on fair judgement affordable to everyone. The price movement in determining the continuing market value of the asset shall be determined by careful day to day market analysis and shall be controlled by the system of artificial intelligence (AI) by applying the principle of *al-Tas'ir* (pricing by circumstances), *Ta'dil al-Quat al-Shirayiyati* (purchasing power parity-PPP) and *Zoherat al-Souq* (market phenomenon). While the benchmarking *(al-Murjei'at)* of the valuation of the asset shall be based on selected commodities commonly used. The transaction of Islamic crypto-asset shall be carried out among the peers in the digital trading platform. The income distribution in Islamic crypto-asset shall be made automatically by system of AI in favor of four accounts namely investors' account based on hybrid principles of *al-Musharakah* and *al-Qiradh*, management account of the operator hybrid principles of *al-Ujrah* and *al-Wakalah.* A provision for humanitarian causes based on the principles of *al-Zakat* (mandatory alms with 2.5%) and *al-Waqf* (voluntary endowment) while the net surplus shall be in favour of the shareholders of the company based on the principle of *al-Musharakah* or *al-Mudharabah.*

Technical Know-How Crypto-Asset

Numerous research provides that, the crypto asset has been developed through a blockchain technology using the SHA256 (Gilbert and Handschuh, 2004), a cryptographic hash function as proof of work scheme. It is decentralized digital asset by peer-to-peer network, but IOTA was among the first cryptocurrencies not based on blockchain technology but using tangle instead. Crypto asset through the blockchain technology is a virtual shared public leisure on which internet network is based. All encrypted confirmed transactions are nodded and are recorded in the blockchain as a proof of transactions. Each transaction is a chain and connected to each other thus, enables a crypto-asset digital wallet in calculating one's spendable balance and new transactions can be verified to be expanding crypto-asset that is owned by the spender or user. The Shariah alternative crypto asset is on the other hand, quite different in its technical know-how. An Islamic crypto-asset is thus, any property carries its intrinsic value is an asset thus, an asset includes any property either tangible or intangible. While an intangible property includes either in the form of intellectual right or virtually created one like crypto asset. An Islamic crypto-asset is created virtually backed by valued asset certified by any legal authority. The market valuation of Islamic crypto asset is confirmed by day-to-day market analysis (PPP) over selected commodities commonly used globally. Transaction of Islamic crypto-asset takes place in the digital trading platform within a specific period among the peer-to-peer with mutual signals. Each transaction is confirmed only upon system (virtual) decryption. A virtual decryption in the platform ensures an ownership of asset for the subscriber while enriches the seller with contractual value. Debit and credit in each transaction is managed by e-pay through accounts maintained in banks by parties respectively.

Valuation by Market Analysis

An Islamic crypto-asset is costless, fastest, and easiest digital currency business, creating an opportunity for across the world into this economic environment within the holistic principle of al-Quran: "*Help each other in righteousness and piety. And do not help each other in sin and rancor"* (Al-Qur'an 5:2). The crypto-asset moves with its promising potential to encourage all levels of mankind to participate in the digital marketplace to maximize one's enterprising and entrepreneurial opportunities without unnecessary obstacles. Crypto-asset maybe a solution in the cotemporary economic reality as an alternative currency to attribute a dual currency system in any jurisdiction in easing the day today commercial dealings. Despite the existence of the crypto-asset with numerous comfort, it encounters risks if one does not comply to the standard regulatory frameworks and also the ethical standard. It is submitted that, the crypto-asset can only be successful should one is governed by the acceptable regulatory standard. In the contemporary global cyber space, there are numerous cryptocurrencies offered through blockchain technology. Most of which are moving ahead with significant results, particularly with commercial gain. Among those cryptocurrencies, the most popular are 10 (Adam, 2022) Bitcoin Cash (BCH), NEO (NEO), Monero (XMR), Dash (DASH), EOS (EOS), Ethereum (ETH), Cardano (ADA), Zcash (ZEC), Litecoin (LTC) and Ripple (XRP) (Demir et al., 2020).

An Islamic crypto-asset is thus, created only based on valued backing asset of the operating entity while the valuation of the backing asset shall be certified by any legal authority. Once an Islamic crypto-asset is created, it shall carry its intrinsic value and be treated as an intangible asset. Baseline value of an Islamic crypto-asset shall be determined based on a fair judgement affordable to all classes of people. A minimum rate is strongly recommended to be a baseline value of an Islamic crypto-asset. Number of (Initial) Islamic crypto-asset offered shall not exceed the net value of the backing asset. Market value of an Islamic crypto-asset shall be determined by day-to-day market analysis (PPP) based on some selected commodities commonly used. Price movement of an Islamic crypto-asset shall be managed by system, but not by peers, so to avoid any malpractice or monopoly in the platform.

Clearing Confusion

Despite the significant growth of Islamic crypto-asset, there are numerous confusions arising out in crypto-asset as to whether it is a currency or commodity or product? Is it a transaction with privity or with uncertainty? Does it survive on its sovereignty or on own existence? Is the receiver registered or based on virtual existence? Is the receiver known or vague behind the curtain? Is the transaction formalized by encryption or digit? Does it concern about the risk plan or moves on with no risk concern? Does the source of income in crypto-asset is known or uncertain? Does crypto-asset comply the standard or regulatory policies or standards?

Clearing those confusions with appropriate solutions is that an Islamic crypto-asset is recommended to be treated as a commodity, because of the nature of the transaction by buying and selling in the open digital market. In a crypto-asset platform the receiver shall be registered and known so to establish a privity between the user and the receiver. A crypto-asset is recommended to be with coin or token based offering through initial coin offering (ICO), but not through exchange platform, because it may encourage money laundering activities. Encryption may not be sufficient to protect the users in a crypto-asset thus, additionally a biometric process shall also be required to create a better authentication and security for the user. A crypto-asset transaction shall also be protected through an appropriate risk plan. It is essentially recommended that, establishment, system, management, operation and all activities shall be governed by standard regulatory frameworks, policies and guidelines so to ensure a sustainable existence of crypto-asset benefitting all within the legitimate frameworks and Shariah standards.

Transformation or Reform Strategy

The world witnesses in the recent years that, the crypto-asset has been growing rapidly with mixed appreciation from different parts of the world. Even though it gains a significant market across the globe, it evolves around with numerous shortcomings that is a long-term threat to the growth of crypto-asset. Therefore, it is timely and strongly recommended that, the crypto-asset model shall be reformed so to make it a globally acceptable alternative or complimentary currency or a digital monetary commodity. Hence, a reform strategy of crypto-asset maybe as follows:

Crypto-asset shall be standardized with acceptable regulatory frameworks, policies and guidelines. Encryption shall further be strengthened by biometric signature of the user as an additional requirement.

Ethical standard shall also be developed to regulate all levels of participants in the crypto-asset platform, so to avoid any form of malpractices in the system and the market as well. There shall be central depository or sovereignty both at the international level and in the local jurisdiction by respective central banks. A crypto-asset shall be limited to the coin or token offering through ICO but shall be open to any of its activities through exchange platform, so to avoid possibilities of malpractices or money laundering by crypto-asset. The payment system shall be reformed with guided digital payment method, such as electronic transfer which can also be activated through mobile to mobile and shall be formalized through a digital code by encrypted signature enabling the user to apply for any form of transaction within the credit ability. A crypto-asset space is a borderless platform thus, its entity and operation are recommended to be based on offshore without being hindered by any local jurisdiction. Crypto-asset operation shall be bound by a standard policy to segregate part of its income for the humanitarian or charitable causes, which can be through the compulsory *Zakat* (alms) provision and *Tabbarru'at* (charitable) provision (Fadilah and Makhrus, 2019). All activities in crypto-asset may also be exposed to risk due to technical failure, hackings, unforeseeable catastrophe and malpractices. Such unpredicted risks maybe threat to the whole blockchain technology and crypto-asset system besides discouraging the market and its participants. Therefore, it is strongly recommended that, a standard risk plan shall be established for each Crypto-asset management.

Paradigm of Islamic Crypto-Asset

Despite a rapid growth of crypto-asset in the contemporary socio-economic environment there is not much solution yet for an Islamic alternative of crypto-asset though there are some players trying to introduce Shariah model of crypto-asset, but not successful yet. It is perhaps because of an Islamic alternative cannot simply be confirmed by mere changes of terminology without fulfilling the requirements for an effective Shariah model. An Islamic alternative model of crypto-asset shall therefore be in conformity with the followings. An Islamic model of crypto-asset shall ensure its objectives compliant with the spirit of *al-Maqasid al-Shariah* (divine objectives). If the objective of the platform maintains in the paper by complying the Shariah principles, but, otherwise, may make the whole system non-compliant to the *Maqasid al-Shariah*. Therefore, to be an Islamic model, one shall be with Shariah spirit both in paper and in reality. An Islamic crypto-asset model shall be governed and guided by the standard Shariah justified guidelines, policies. and systems. It must be closely supervised by qualified Shariah board, all activities of it shall be screened through by a Shariah audit to ensure all activities and functions are compliant to the Shariah principles. While an advisory body shall contribute closely to advising the management and their activities in line with the Shariah principles and the divine ethical standard.

The blockchain technology along with its ledger and other technological components shall be screened through to ensure one is compliant to the divine spirit of Shariah. The operation shall be centralized by sovereignty. In Islamic business activities the true sovereignty is with The Almighty Allah (ﷻ), but in practical reality of crypto-asset there should be a central depository with international regulatory control, government control at locality through the central bank and offshore regulatory control shall be maintained at the offshore level, which all shall be within a Shariah justified code or standard. Even though the operation of an Islamic crypto-asset model takes place in the cyber space with borderless activities, to avoid unpredicted risk and malpractices, the operator shall be registered and duly incorporated as a company in any legal jurisdiction. Through such incorporation, the receiver is identified, and privity is maintained between the receiver and users with a transparence culture.

There is confusion on whether the crypto-asset (coin or token) shall be treated as currency or product or commodity. It is recommended that, the crypto-asset may be treated as a complimentary currency to be used as a medium of exchange of value. It may also be treated as a commodity or product because one has the intrinsic virtual value. Thus, the Islamic alternative crypto-asset may be used as a complimentary currency or a commodity or product so long one is compliant with Shariah principles. In any commercial activity under Shariah principles (Mohd Noh, 2022), shall be free from the element of uncertainty (*gharar*) thus, in Islamic crypto-asset model the receiver, user, technology and activities shall be transparent and be free from uncertainty (*gharar*). In Islamic model of crypto-asset, its total activities and transactions shall be facilitated by Shariah instruments and doctrines. For example, the investment by the users is based on principles of *al-Mudharabah* (co-partnership) or *al-Musharakah* (partnership) where the user receives return as income sharing with the receiver or other users through trading activities. The receiver receives the service charge

based on the principles of *al-Jualah* (reward) or *al-Wakalah* (agency) or *al-Ujrah* (charge). Meanwhile the transaction takes place in the blockchain platform is based on the principles of *al-Bay wa al-Shira* (buying and selling). The Islamic model of crypto-asset shall be subject to pay compulsory taxes with *Zakat* (alms). Besides, a voluntary segregation over the income shall be provisioned for humanitarian causes base on the principles of *al-Tabarru'at* (charity).

In an Islamic model of crypto-asset, a transaction by an encryption is not sufficient to protect the user from any unpredicted risk might be due to technical failure by hacks and or other catastrophes. Thus, additionally it is recommended to require a digital signature by biometric of the user simultaneously with the action of encryption in all levels of transaction. This may be a better authentic as to nodding and recording. In an Islamic crypto-asset management, the divine ethical standard shall strictly be observed. No dishonesty, fraud, misrepresentation, deceiving, falsehood, and other form of malpractices are tolerable, because of those moral hazards may defeat the purpose of *al-Maqasid al-Shariah*. In an Islamic crypto-asset management multi-currency basket model may also be allowed to make comfort among the users in the global cyber platform.

The establishment, operation and management of an Islamic crypto-asset model is more recommended to be based on offshore, so that the total activities shall be bound by the offshore regulations without being interrupted by the local authorities, provided that all regulatory frameworks, policies, and activities are within the Shariah justified standard. It shall also be worth noted that, receiver or user or technical supporter or anyone in the system shall in no situation be allowed to gain unlawfully at the expense of others because there is no room for anyone gaining at the expense of others in the Islamic commercial activities. An Islamic crypto-asset management is not free from risk be one due to technical failure, technology disaster by hacks, receiver bankruptcy or fraud activities. In those unforeseeable circumstances the risk shall be minimized by a Shariah justified takaful (insurance) scheme aiming at protecting both the user and the receiver against unpredicted catastrophe.

Crypto Asset (Conventional vs Islamic)

Despite the crypto-asset management in the conventional practices in recent days receives greater popularity and appreciation globally, the model is yet surrounded by numerous shortcomings and criticisms from different levels. An Islamic model of crypto-asset on the other hand, despite being a new dimension, ought to be designed carefully by complying the Shariah ethical and commercial principles. However, a dichotomy analysis is provided here to show how conventional crypto-asset is different from the one designed under the Shariah normative principles (Billah, 2021).

Issues	Conventional Crypto-Asset	Islamic Crypto-Asset
Law and Policies	In conventional crypto-asset practices, the regulatory frameworks as to law, policy and orders are not quite concerned over the competitive commercial gain.	The regulatory concern with Shariah standard in Islamic crypto-asset model shall be among the prime requirements, so to make sure every activities are within the spirit of *al-Maqasid al-Shariah.*
System	In the crypto-asset practices, the blockchain technology and the total system are decentralized with private control by the receiver.	The system of blockchain technology shall be controlled by systematic body for the common benefit with no personal agenda and be screened through by the Shariah board.
Receiver	The receiver's identity is not necessarily to be registered in any onshore or offshore jurisdiction, but a cyber-registered entity is the common basis. In this culture the receiver's identity remains unknown and uncertain, which may create a fundamental risk against the user.	The receiver is required to be a registered entity either in onshore or offshore. In such requirement the receiver's identity shall be known and be free from uncertainty (*gharar*). This may create a confidence among the users in being protected from any fraud.
Sovereignty	There is no sovereignty in crypto-asset management as to be controlled by any central bank or central depository in the international jurisdiction. Its sovereignty is realized only by a private	The actual sovereignty is with almighty Allah (ﷻ) by complying to the regulatory and ethical principles of the Quran and the Sunnah. In addition, the central bank of the

	control of the receiver with no legal recognition.	local jurisdiction and the international central depository shall be recognized as the sovereignty in the practical reality, so to avoid any malpractices within the activities.
Privity	The privity in crypto-asset management between the user and the receiver seems quite remote by no visual legal contractual relation. This may result in avoidance of one's responsibility and accountability.	The privity with contractual relationship between the user and receiver shall be maintained and known through cyber space visual contractual relation, so that the accountability and responsibility of the parties are recorded.
Control	Conventional crypto-asset is controlled by private initiative of blockchain technology.	An Islamic crypto-asset management is controlled by divine principles within *al-Maqasid al-Shariah*, law and sovereignty.
Growth	The growth of Crypto-asset practices is quite emotional without bothering to much of legal or ethical concern.	The growth culture shall be rational with sustainability by complying the Shariah concern and legal sensitivity.
Subject Matter	The subject matter is a digital coin or token and be treated as digital currency which can be convertible in any exchange platform.	It may be treated as an alternative digital currency or digital commodity or digital product. Because a digital coin or token carries digital value, which can also be defined as intrinsic value.
Operational Mechanisms	The operation takes place based on any self-designed mechanisms with no concern of standard regulatory frameworks yet. It is by a "coin or token" offering, traded in the trading platform through a block-chain technology. It is also practiced based on an exchange platform as "crypto-asset exchange", but no standard guidelines yet in supporting such mechanisms.	The operation of an Islamic crypto-asset model is, facilitated and dully operated mainly based on the Shariah principles with the concept of "issuer coin or token" or of an "exchange platform" through a Shariah screened block-chain technology. An operation based on "Issuer Coin or Token" shall primarily be executed by trading platform, a decentralized direct (one-to-one) buying and selling (*Bai' wa al-Shira'*) mechanisms. However, it may exceptionally be operated through exchange platform based on a Shariah hybrid mechanism, facilitated by the doctrines of *al-Shuftaza* (exchange), *al-Hewalah* (transfer), *al-Kafalah* (custodianship), *al-Amanah* (trust), *al-Wakalah* (agency by commission), *al-Ju'alah* (reward for services) and *al-Ujrah* (service charge) within the Shariah frameworks.
Income	The sources of income in the conventional crypto-asset management are unknown.	In Halal crypto-asset management, the sources are known to both receivers and users through legitimate trading.
Tax	There is nether concern of tax over the income in the conventional crypto-asset management nor there is any tax plan or policy.	In Islamic crypto-asset management, it is mandatory to establish a *Zakat* provision over any income, if the income is Zakatable. In addition, the tax also be payable as per the statutory requirement.
Risk	There is no risk plan in conventional crypto-asset management yet, to protect either the user or the receiver against any unpredicted catastrophe.	The risk plan is required in Islamic crypto-asset management to protect receiver, user and the system against unpredicted risk thus, a takaful scheme is strongly recommended to be established in managing unpredicted risk against Islamic crypto-asset management.

Formality	In the conventional cryptocurrency management, the transaction is confirmed by the encryption only so to nod and record the transaction. By encryption with digit alone may not be an enough protection for the user if incase the digit is known to someone else or being hacked.	For the Islamic *c*rypto-asset management, to protect the user in a better way, it is recommended that, there shall be two requirements for the formalization of a transaction and that is; encryption by digit and simultaneously by biometric of the user, so to nod and record the transaction with legal status.
Backing Asset	A crypto-asset if so operated without being backed by any valued asset (at least equivalent to the total ICO value) may lead to high risk for the investors with any unforeseeable catastrophe. In the current practices of crypto-asset, there is no such requirement of backing asset to back the total operation.	In the Islamic crypto-asset management, a valued backing asset with legitimate proof of product or proof of asset or proof of property or proof of commodity (POP) with at least an equivalent value of the ICO, to back the total operation. The objective of this requirement is among others to create a legitimate confidence in the market and among the market participants.
Instrument	There is no specific instrument used in the crypto-asset management except buying and selling with unauthorized traditional mechanism.	There are numerous Shariah justified instruments recommended to facilitate an Islamic *c*rypto-asset management. Among them are: *al-Mudharabah*, *al-Wakalah*, *al-Jualah*, *al-Bai' wa al-Shira'* and *al-Tabarru'at*.
Moral Hazard	There is no specific regulation or standard policy to regulate moral hazards or malpractices. Thus, it is left as an option to the personal responsibility.	It is among the primary requirements of an Islamic crypto-asset management to strictly concern and observe ethical compliance within the *Maqasid al-Shariah* in all levels of personality, decision making and execution.
Objective	The prime objective in crypto-asset management is, to make money and maximize self-opportunities.	The objective shall be within the holistic spirit of Shariah. Commercial gain within the legitimate frameworks is one of the objectives while the other is to create an entrepreneurship opportunity for all by complying the Islamic standard. It also aims at caring for humanitarian causes through the doctrine of *al-Tabarru'at*.
Humanitarian Concern	There is no humanitarian concern in conventional crypto-asset management as a requirement.	In Islamic crypto-asset management humanitarian concern is among the objectives in helping others out of the income.
Nature	It offers coins or tokens, which can be traded in the cyber platform or be in the exchange platform.	It has some similarities with conventional practices to offer through coin or token and be traded in digital platform. The coin can be converted in the exchange platform, but is not encouraged, so to avoid any illegal money laundering. The digital coin can be used as an alternative or complimentary currency in buying commodities or paying dues without having opportunity to treat the coin as a real currency to be exchanged in the foreign exchange platform, so to avoid the possibility of money laundering in the cyber space.
IAO	It offers with initial asset offering (IAO) with a value determined by the receiver on its own discretion.	It can be offered either with initial asset offering (IAO) or initial token offering (ITO) or initial product offering (IPO) or initial commodity offering (IAO) with a justifiable value affordable to all levels of

Currency	It is a coin or token, which is treated as a non-intrinsic currency.	mankind, so to maximize an opportunity of entrepreneurship in the cyber space for all. Even though it is a coin or token used in the digital platform may also be recommended to be treated as an alternative currency for trading or payment of dues.

Operational Mechanism

An Islamic crypto-asset is managed within the principles of *Maqasid al-Shariah* thus, its operational mechanism is that the launching of Islamic crypto-asset with its baseline valuation shall be with minimum price affordable to all and the initial offering with minimum target so to avoid market-crush. There shall be a maximization of market awareness by online platforms or social media. The market valuation of the asset shall be determined by daily market analysis by applying the principle of purchasing power parity (PPP) on retail sales of selected commodities commonly used. It is recommended that, the market analysis for each trading event may be for 5 consecutive days (Sat-Thu) a week. Average income gains over the period of 5 days shall be the basis for deterring the value of the asset. Trading shall take place once a week for a period of 24 hours. The valuation of the asset for the week shall be published prior to the trading takes place. The asset shall maintain unchanged value in the trading platform. The payment for each transaction takes place in the platform shall be bank-to-bank through e-pay system. Every investor will be able to sell own asset once a week in the trading platform and the dividend or distribution over the income generated in the Islamic crypto-asset platform is determined on the fact that, the seller of the asset shall be entitled to principal value of the asset plus sharing an agreed (%) of income generated from the sold-asset. The dividend or distribution shall take place automatically bank-to-bank by e-pay system (Adham et al., 2008). The company shall be entitled to an agreed (%) of income generated from the sold asset. Each income received by the company shall be subject to distribution for operation and humanitarian causes through *Zakat* and *Awqaf.*

Pillars of Crypto-Currency. Its Shariah Screening Mind-Map

Islamic crypto-asset is established, managed, operated, regulated, supervised, and monitored by some core elements within the principles of *Maqasid al-Shariah*. Those elements are to be recognized as pillars of crypto-asset under the principle of Shariah. Thus, a mind-mapping is made screening those components with Shariah justification. This screening may help the market to create confidence with faith without being confused by uncertainty or vague in cloud, as detailed in Table 1.

Table 1: Shariah screening of Crypto asset

Components/Core Issues	Concern/Screening	Justification/Results
Governing Authority(s)	In what extent the Shariah control is required in managing ICA?	Governed by: Shariah Standard/Shariah Code of Ethics/Shariah Advisory Board/ Shariah Compliance/Shariah Audit
Principles/Instruments	How far ICA is governed by Shariah principles and instruments?	Among them are: *Al-Bay'/al-Shira'/al-Wakalah/al-Musharakah/al-Mudharabah/al-Qiradh/al-Sarf/al-Shuftaja/al-Wadiyah/al-Hewalah/al-Ju'alah/al-Ujrah/al-Amanah/al-Zakat/al-Tabarru'at*
Digital Platform	Does the digital platform for trading activities of ICA contradict Shariah norms or spirit of *Maqasid al-Shariah*?	No, because Each and every component and activity of ICA are indeed transparent and free from any element of *gharar*, *riba*, *maysir*, unfair gain and other non-Shariah actions

Valuation Exercise	How far the manner of valuation exercise (baseline and market value) of ICA is recognized by Shariah?	All stages of valuation exercise of ICA shall be justified by: *Al-Taqwim* (valuation) *Tahlil al-Souq* (market analysis) *Ta'dilal-Quat al-Shirayiyati* (PPP) *Al-Murjei'at* (benchmarking) *Zoharat al-Souq* (market phenomenon)
Price Movement	Weekly price movement of ICA is managed by careful market analysis based on selected commodities commonly used	Because, price movement is facilitated by: *Al-Tathmin* (pricing) *Al-Tas'ir* (pricing by circumstances) *Tahlil al-Souq* (market analysis) *Ta'dilal-Quat al-Shirayiyati* (PPP) *Al-Murjei'at* (benchmarking) *Zoherat al-Souq* (market phenomenon)
Trading	Trading of ICA in the trading platform takes place with mutual good wills among peers over a subject matter (ICA) with Halal objective in gaining lawfully	Complying with the Divine Principle: *"O you who have believed, do not consume one another's wealth unjustly but only (in lawful) business/trade by mutual consent"* (Surah al-Nisa': 29)
Accounting (A/C)	What extent transparency is maintained in accounts?	Six A/C to be maintained: Investors' A/C BoD A/C Management A/C Humanitarian (*Tabarru'at* A/C) *Zakat* Management A/C *Al-Awqaf* Management A/C
Distribution/Dividend	Sharing income, distribution of income Enjoying with Halal dividend beside a humanitarian concern in the ICA Management are indeed aligned with Shariah principles/instruments	Hybrid: *Al-Wakalah* (agency) *Al-Mudharabah* (co-partnership) *Al-Musharakah* (partnership) *Al-Ujrah* (service charge) *Al-Waqf* (charity) & *al-Zakat* (alms) CSR/Impact Investment
Humanitarian Concern (*Zakat* & *Waqf*)	Among the prime concern and requirements in the ICA management is to create a provision for the humanitarian concern and that is the provision of *Zakat* and *Awqaf*	Any form of income generated in the ICA Management shall be subject to a compulsory deduction (2.5%) of *Zakat* while a corporate provision is suggested to deduct an agreed (%) as *Awqaf* for the humanitarian causes

Socio-economic Impact

Among the socio-economic impact of Islamic crypto-asset are; mutual cooperation and solidarity caring about and sharing with all classes of mankind and particularly for low-income group. It also contributes to diminishing poverty rate by creating enterprising and entrepreneurial mind-set among the low-income group. It significantly contributes to opening an eco-opportunity for all and particularly for the low-income group besides a significant contribution to economic stability among the low-income group in particular. Also, it may help with potential contribution to the growth of GDP (van denBergh, 2009). It may undoubtedly contribute to create a self-reliant community with sound economic security with gradual effect besides helping the country to diminish its economic liability.

Conclusion

Crypto-asset is a new chapter in the contemporary economic environment with rapid growth and greater appreciation across the world. Despite its greater popularity with perhaps emotional action and less rational way forward, it is somehow a risk yet due to availability of lack of regulatory standard, poor risk plan, unstable system, less concern on rights and obligations and minimum care as to moral responsibility. For a sustainable existence, the model shall be compliant to standard legal requirement, ethical principles, acceptable operational mechanisms, and risk plan. An Islamic alternative crypto-asset model on the other hand is, conceptually vibrate the global environment though not in effective operation yet. It is in no excuse as to

Shariah compliance, legal requirements, divine code of ethics, standard system, operational mechanisms, and activities within the divine objectives. In the Islamic model, mere commercial gain shall not be a prime objective over the socio-economic and humanitarian concern within the *al-Maqasid al-Shariah*.

Despite the promising future of Islamic crypto-asset, there are challenges in it. It has been observed that, there is poor awareness in both public and marketplaces as to the idea of Islamic crypto-asset. Also, there is insufficient support from the governments, related organizations, Shariah scholars and corporate authorities in appreciating Islamic crypto-asset. There is also misconception about crypto-asset thus, leads to confusion and hence, it discourages the development or operation of crypto-asset. There are other challenges namely lack of Shariah regulatory frameworks (Grassa, 2015) on the subject, standard, policies and guidelines, infancy stage of professionalism and insufficient of technical experts. To overcome those challenges it is recommended that, there be significant awareness on the subject, its technicalities, operational mechanisms and impact through teaching, training, research, talks and sharing views. There should also be an initiative with effective support by the government, Shariah scholars and corporate authorities also professional initiative with skills and operational techniques. It is further concluded that, the idea of Islamic crypto-asset is timely to contribute significantly to the economic recovery and its sustainability in this post-Covid Era. Thus, support from the government and other related ones are among the prime factors in the success of Islamic crypto-asset. A focus on professional development with skills in technicalities and operation is an essential concern. Awareness among both public and market is among the pillars of the success of Islamic crypto-asset. Needless to admit that, among the core objectives of Islamic crypto-asset is to wake up the low-income group by building them up with enterprising and entrepreneurship personality.

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