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A Maqasid-ul-Shari'ah Analysis of the Permissible Futures Trading in Islamic Financial Markets

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Abstract - Despite the widespread use of futures contracts as a risk mitigation instrument in the current financial markets, Islamic economies commonly feel uncomfortable with it for fear of its potential clash with the Islamic law of contracts. This research aims to justify only the futures trading that contributes to reducing investors' financial risks. This paper argues that a risk-hedging futures contract can Islamically be justified if Shari'ah rules are construed in the light of its broader purpose, what is known as Maqasid-ul-Shari'a. A qualitative research methodology with a deductive interpretive approach is used in this study to analytically explore the role of Maqasid-ul-Shari'a in authorising permissible futures trading. The relevant data is collected from primary sources (Quran and Sunnah) and secondary sources (Islamic jurisprudence, textbooks, journal articles and review papers). By deploying the theory of Maqasid-ul-Shari'a, the prevalent Islamic jurisprudential approach is constructively reinterpreted to formulate general principles and guidelines under which futures trading can comfortably be approved. The study's overall findings suggest that on several counts of necessities, risk-hedging futures help Muslims preserve both the individual and the public wealth, safeguard the human self, honour and religion, facilitate their transactions and prevent future business conflicts. The Maqasid-ul-Shariah analysis of futures trading adds to the permissibility view that risk hedging futures trading should be recognised and declared as permissible not simply because they do not conflict with any prohibition or benefit the individual parties involved but also because they serve the broader interests of the public (al-masalih-al-aammah). This study is the first to analytically discuss the permissibility of futures trading under a combined reinterpreted guideline of Islamic jurisprudence and Maqasid-ul-Shariah.

Keywords - Risk mitigation; Islamic financial markets; Islamic contracts; Maqasid-ul-Shari'a

I. INTRODUCTION

Exchange-traded futures transaction has long been used as a risk mitigation instrument in the commodity and financial markets [1]-[2]. An exchange-traded futures transaction often involves a binding contract to deliver, or take delivery of, a given quantity of a commodity, or a financial instrument, at a future date, at an agreed price, or a future price to be decided later. Such a transaction reduces uncertainty about future assets and costs, facilitating efficient investment planning. Businesses,

producers, and general investors use futures to plan future investments in production and trading [3]. In return for a small fee, they can fix the price of assets well ahead of the actual bargain to avoid unexpected and unwanted price changes and production costs. Also, they do not have to worry about the quality and quantity of future assets, as futures are standardised, covering only homogenous assets. They save costs and appreciate more comfort in trading futures than bargaining over the actual spot assets, which may require physical exchange and storage for vast quantities of various assets [4]. Additionally, they trade futures as standardised contracts in organised futures markets with improved fair pricing, increased liquidity, and reduced transaction costs [4].

Islamic and western economies have recognised the need for future trading [5]-[6]. As a derivative, a futures contract correlates to the main future contract and derives its value from its underlying asset [7]. Investors would routinely use futures to circumvent commercial uncertainty. For investors, futures are attractive, particularly for their capability to reconcile the two seemingly contrary goals, i.e., securing high returns and mitigating investment risks in future contracts. They do not require buying and selling the actual commodity. Instead, they can reserve buying or selling the item at a considerably lower cost. Using futures, they can further allocate their investment risks more efficiently and reduce the information asymmetry [8]-[9]-[10].

Yet, across Muslim economies, the Islamic finance industry commonly feels uncomfortable using futures contracts for fear of its potential clash with the Islamic law of contracts [11]. Many Islamic jurists and scholars have opined that Islamic law does not approve of the contract of futures as is conventional in western economies. They commonly believe that exchange-traded futures are excessively uncertain and sometimes bear interest, both of which are forbidden under the Shari'ah law. The former violates the Islamic prohibition against contractual gharar and maysir, and the latter infringes the no riba principle [12]-[13]-[14]. Despite the absence of any direct prohibition in Islamic resources against a futures contract, they declare it impermissible by way of ijtihad [15]-[16]-

[17]. The practice of modern futures trading at regulated exchange markets did not exist at the time of the introduction of Islam. It only evolved as late as the 19th century when the first organised futures market was developed in the United States. The new practice did not expressly match Islamic law. Hence, Islamic jurists had to exert *ijtihad* to check and verify the permissibility of the practice under Islamic law. They routinely made *ijtihad* by *qiyas* [18] to compare an exchange-traded futures transaction and a *Bay'a* (sale) contract. They concluded that a futures transaction is impermissible because it falls short of the freedom from *gharar* requirement for a permissible *Bay'a*.

Many contemporary Islamic law academics and jurists attempted to engineer some form of Islamised equivalent using the Islamic contracts of *Bay'a-ul-Salam* and *Bay'a-ul-Istisna*. The former concerns a future sale where the price for an asset is paid upfront at the time of the agreement, but the commodity is to be delivered at a future time [2]-[13]-[19]-[20]-[21]. The latter is also a future sale whereby a party undertakes to manufacture, build or construct often fixed assets, with an obligation from the manufacturer or producer to deliver them to the customer upon completion [22]-[23]-[24]. These are *Shari'ah*-approved contracts despite being future contracts. Although they involve the exchange of future promises, *Bay'a-ul-Istisna* and *Bay'a-ul-Salam* are treated as exceptions to the standard rules of the *Shari'ah*, which forbid future agreements [23]-[24]. Their permissibility relies on the justifications of public need and necessity. Yet, these Islamised futures fail the primary purpose of the futures, i.e., the hedging financing and investment from transactional risks. They are not collateral but are concluded as the central contracts and involve actual sales, not promises to future sales that do not shift the risks between the parties, as existing in conventional futures.

Hence, the current approach of Islamic finance concerning futures transactions is theoretically and practically problematic. In theory, it relies on an improper analogy between futures trading and *bay'a*, which forms the foundation for disallowing risk-hedging futures transactions in Islamic finance discourse. Further, it falls inconsistent with general *Maqasid-ul-Shari'ah* principles, such as the facilitation of commerce and the observation of '*al-masalih-al-mursalah*'. The Islamised futures are incapable of achieving the future's purpose too. In practice, the absence of future transactions contributes to chaotic financial markets in Islamic economies. Potential investors will have to make investment decisions in an uncertain environment. Any such decision could be affected by any future change in the market conditions, which will, in turn, increase the risk of counterparty default and future disputes/conflicts.

However, an Islamic futures contract can serve the purpose of hedging if *Shari'ah* rules are adapted in the light of the broader objective of *Shari'ah*, what is known as *Maqasid-ul-Shari'a*. The term '*Maqasid-ul-Shari'ah*' refers to the

purpose and objective of Islamic law, i.e., the underlying purpose of the explicit rulings of Islam. However, the Islamic finance industry has been taking a minimalist approach, i.e., one that would not go beyond the explicit rulings of *fiqh-ul-Shari'ah*. It is dominated by practitioners who are often educated in western economies and willing to mimic such economies' practices, most notably in profit-maximisation while ensuring Islamic compliance with the minimum rulings of *fiqh-ul-Shari'ah*. This practice ignores the true objectives of *Shari'ah* that are implicit in the *Shari'ah* explicit rules. This paper suggests that the reduction of transactional risks is consistent with the objectives of *Shari'ah*, even if that might call for the use of future contracts that are routinely prohibited under the rules of *Shari'ah*. Seen from the angle of *Maqasid-ul-Shari'ah*, therefore, Islamic futures can be reconceptualised and transformed into financial instruments that can truly serve the purpose, i.e., hedging financial risks. By applying the theory of *Maqasid-ul-Shari'ah*, this paper seeks to justify the use of futures in the Islamic finance industry. The article does not intend to manoeuvre around *Shari'ah* laws, instead aims to explain the use of futures as a risk management tool under the guidance of *Maqasid-ul-Shari'ah*, hence, to contribute to the developing Islamic finance field.

Towards this end, the rest of the paper divides into three sections. First, it is necessary to understand the nature of futures, their mechanism and function. What are futures, how do they work, and what purpose do they serve are essential questions to raise here. These are important as they provide the reader with background information and a better understanding of the primary purpose of futures, which is to manage investment risks like other derivative instruments. Businesses routinely face different investment risks in their day-to-day running, and they use Futures to mitigate such risks. Today, risk mitigation instruments play a vital role in the development and growth of businesses and the financial sector in western economies. This is, however, absent in the Islamic finance industry (section II).

Second, Islamic finance practice has taken a prohibiting approach to Islamic law that ceases recognition of conventional futures for religious impermissibility and engineered Islamised futures allegedly to stop any non-Islamic practice across Islamic economies. The Islamic finance discourse, however, has developed beyond the incumbent prohibiting approach and embraced a minority-enabling view of the Islamic law that holds for the permissibility of the risk hedging futures transactions and that accords to the general permissibility principle of the law of *muamalat*. A careful review of the primary sources of Islamic law and the existing literature can help understand the foundational justifications from both approaches, either against or for future transactions. It enables one to assess their credibility better. How and why conventional futures contracts are treated as impermissible in Islamic law and how and why the Islamised futures fail

to function as derivative, and how this failure can be rectified through a reconsidered Islamic approach that relies on Maqasid-ul-Shari'ah are therefore relevant questions that are to be asked and addressed next (Section III).

Third, the theory of Maqasid-ul-Shari'ah suggests that in circumstances where there is an apparent inconsistency between the implicit intent and the explicit rulings of Islam over a particular matter, the former should be given priority. There are, however, interesting questions to raise and answer. What is meant by Maqasid-ul-Shari'ah, how does it differentiate from Shari'ah law, under what circumstances it may override Shariah's explicit rulings, and whether such supremacy of Maqasid-ul-Shari'ah can extend to and authorise futures trading, despite the conventionally perceived prohibition under the Islamic law (Section IV). Finally, the paper will conclude in section V. This paper takes a qualitative legal research (doctrinal) methodology in conformity with its agenda, which is to reconsider the Islamic ruling on the impermissibility of future trading and to recommend a reformed interpretation of the applicable law of Islam in respect of such trading. Many scholars have used this methodology in scientific research to determine the problem of the study, its dimensions, aspects, and causes [25]. A qualitative method enables the researcher to locate, analyze, and evaluate relevant regulations and laws relating to futures transactions in Islamic derivative markets. It was selected for this study because it allows the researcher to investigate and understand how different laws and regulations can be interpreted and how these constructions can impact our understanding and practice within the real world [26]. A qualitative method also allows the generation of comprehensive insights into shari'ah scholars' perceptions and experiences on future transactions. In doing so, a deductive interpretive approach is used in this study to analytically explore the role of Maqasid-ul-Shari'a in authorising permissible futures trading. The relevant data is collected from primary sources (Quran and Sunnah) and secondary sources (Islamic jurisprudence, textbooks, journal articles and review papers). By deploying the theory of Maqasid-ul-Shari'a, the prevalent Islamic jurisprudential approach is constructively reinterpreted to formulate general principles and guidelines under which futures trading can comfortably be approved. The focus will be on the discovery and the prioritised application of the true objectives and the rationale of the rules of Shari'ah. Most resources re-examined in this research are either primary sources of Islam written in the Quran and narrated via Sunnah or secondary sources found in Islamic Fiqh. As well as these, the paper will further make use of other literature on Islamic finance to present a reconsidered and innovative interpretation of the applicable law of Islam on futures trading.

II. FUTURES

Futures is a tripartite agreement between a buyer, a seller and a commodity exchange clearing house where the parties agree to deliver or accept delivery of a specified amount of a particular commodity during an agreed period. It involves an obligation to fulfil future commitments to buy or sell. An exchange-traded futures contract is a legally binding commitment to deliver or take delivery of a given quantity of a commodity, or a financial instrument, at a future date and an agreed price [27]-[28]-[29]. By entering a futures contract, the buyer and the seller may agree to a price today for some asset to be delivered. It can be defined as an initial arrangement whereby parties promise to carry out a future transaction at a price determined at the time of the meeting. Unlike options, futures carry an obligation to exercise the contract, i.e., pay the predetermined price or deliver the commodity [30]. The UK Corporation Tax Act 2009 Section 581 defines futures as a contract for the sale of property under which delivery is to be made at a future date and at a price so agreed, even if it is left to be determined by reference to the price at which a contract is to be entered into on a market or exchange or could be entered into at a time and place specified in the contract. The agreement is standardised in all respects, except for price and terms of delivery which are settled on the exchange floor on the delivery date and based on the settlement price for that date. Standardisation of contracts allows interchangeability with all other warranties of the same delivery period [31]. The contract is registered with the clearing house, which guarantees contractual payment and delivery to every seller and buyer and which eliminates risk over contract performance [27]-[32]-[33]-[34].

It is conventionally referred to as a derivative because it earns its value from an underlying asset covenanted to become the subject of the main future contract [30]. The underlying asset could be either finance or commodity, such as agricultural commodities, metals, energy, currencies, and stock indexes. At maturity, financial futures are cleared through monetary settlement, whereas commodity futures are settled physically. In practice, all settlements take monetary form, meaning that, at maturity, buyers receive a monetary equivalent of the asset rather than an actual delivery of the asset [7]-[35].

Historically, exchange-traded futures evolved from the practice of forward contracts that were common in ancient Asia's early commodity markets [4]. Reports suggest that forward rice transactions were an established commodity trading practice among the Chinese rice producers and merchants of 2000 BC [5]. The Hammurabi code, one of the oldest deciphered writings in the world dating back to 1750, found in the ancient Mesopotamia area, has an apparent reference to forward contracts that allowed goods to be delivered on an agreed-upon price at a date in the future. The first regulated futures exchange is reported to be the Dojima rice market that formed in Osaka, Japan, in 1650 and had some, but not all, of the features of modern futures. For instance, it included standards of a four-month contract term, four grades of rice only, no physical delivery and clearance through an established clearing house but imposed no

margin requirement on parties to the transaction [36]. In the western world, the elementary forms of futures trading were developed as late as the sixteenth-century era when cotton traders in Liverpool and tea traders in London were using forward contracts.

Still, England's first chartered commodity trading exchange, the London Metals and Market Exchange, was not established until 1877. However, the first organised futures market was developed in the United States, where the Chicago Board of Trade (CBOT) of the Chicago Mercantile Exchange was created in 1848. This market's central traded futures contracts were three essential agricultural commodities of corn, wheat, and soybeans, which still account for the bulk of trading business conducted at the CBOT today. The futures market has proliferated worldwide, covering many other products, including cotton, cocoa, orange juice, sugar, cattle, pork, foreign currencies, treasury bonds, stocks, gold, silver, copper, platinum, and palladium. According to the Futures Industry Association statistics, the number of futures traded on exchanges worldwide in 2021 marked the fourth consecutive year of record-setting trading activity. The total volume of futures trading reached 29.28 billion contracts which accounted for a rise of 14.6% compared to the previous year, 2020. Futures exchanges in the Asia-Pacific region had the most significant increase in trading in 2021. Total volume in that region reached 30.55 billion contracts, up 10.40 billion or 51.6% from the previous year. North America, the second largest province in terms of trading volume, had 15.38 billion contracts traded in 2021, up 2.53 billion or 19.7% from the previous year. Latin America continued its rapid growth with a total trading volume of 8.89 billion contracts, displaying a 37.5% rise. Europe ranks fourth in terms of trading volume, with 5.45 billion contracts traded in 2021.

Although a futures contract is forward, it is more efficient than the latter [7]. Futures contracts are standardised and associated with fewer uncertainties in terms of contract size, maturity, product quality, place of delivery, price, etc. They are also traded in regulated capital markets. A regulated market for futures makes it easy for investors to find a fair and safe deal [7]. The exchange clearing house guarantees payment on futures, so the counterparty risk is eliminated. On the other hand, forwards are unstandardised and transacted over the counters [27]. As the market is not regulated, potential investors routinely have trouble finding a fair and safe deal [37].

Futures are generally recognised as a risk management financial instrument that offers a considerate solution to the risk/return dilemma. Businesses and investors often use futures to hedge their investments against risks. Every financial investment can attract risks and returns that are positively linked, meaning higher returns are generally associated with more significant risks. Investors seeking higher returns must make a risk-return trade-off where expected returns are maintained while risks are reduced. Often, they do so through futures as a risk management instrument. Futures routinely protect an investment from market risks, i.e., any future fluctuations in the price of a given

asset. While a financial investment may often be exposed to several types of financial risks [38]-[39], futures work to hedge the investment against the market risks only. This refers to the fluctuations in the price of assets due to changes in market conditions. Price movements due to inflationary situations, variations of interest and/or currency exchange rates, demand/supply adjustments and/or renewed customer sentiments are the most common triggers of market risks. This risk is systematic and a result of the economy's exposure to the uncertainty affecting all market participants. While unavoidable, investors may manage the risk by contractually shifting it [7].

Futures are traded among three categories of investors: i) hedgers, ii) arbitrageurs, and iii) speculators. Hedgers are usually farmers and manufacturers who use futures contracts to manage the risk of price change and offset their business exposures. Locking in the futures price would mean that the hedger would eliminate the risk of price volatility either positively or negatively, i.e., enjoying a fixed price when the price moves unfavourably but missing out when the price moves favourably. Arbitrageurs seek to profit from discrepancies in the prices of identical or related futures instruments across different markets. These discrepancies occur when an asset is priced differently by multiple financial institutions.

The arbitrageurs would buy an asset at one price from the first financial institution and then almost instantly sell it to a different institution to profit from the difference in quotes. Speculators take on risk, especially anticipating future price movements, hoping to make significant gains to offset the risk. They are not interested in taking profit from the sale, saving the trouble and costs for the possession or delivery of the underlying assets. They trade futures to quickly gain from speculation about a favourable future price movement [40]. In other words, they are traders in its strict sense, i.e., making a profit out of the buying and selling of derivatives. They are the prominent players in the futures market [38]-[39]. Some commentators even viewed them as the true initiators for developing the secondary market for futures [5]-[41]. Investors from the other two categories are also likely to convert gradually into speculative traders as they see higher returns in speculative transactions. Chance points to the formers who started as hedgers but developed later into speculators [42]. Other investors may become speculators due to the bandwagon effect [38]. A common feature for all three categories of investors is the zero-sum game that underlies future trading [43]-[44]. This is where one party gains from the other party's loss and vice versa [37].

III. ISLAMIC LAW

Whether or not Islamic law permits the use of futures has been controversial in Islamic finance discourse and practice. Islamic jurists and academics have grouped into two main camps. The prohibitionists believed that futures trading violates fundamental prohibitions of Islamic law. The liberalists counterargue that futures transaction is a modern

innovation that Islamic law has not addressed, so it should be regarded as permissible if there is no express prohibition or violation. While both groups agree that purely speculative futures trading is impermissible, they disagree on allowing futures trading that is meant for risk hedging. The former forbids it no matter speculative or risk hedging for gharar. The latter allows the risk hedging of future transactions, which contain only commercial uncertainty rather than gharar.

A. Prohibitionist view

Classical jurists and academics took the view that futures trading is impermissible [23]-[45]-[46]. They refer to a fundamental principle of the Islamic law of contracts and contend that business and financial transactions must not involve gharar nor maysir, but futures transactions contain both [47]. Futures transactions contain selling assets that either do not exist or are not owned by the seller at the time of contracting [48]. Likewise, gharar exists where sellers do not own the underlying asset in future transactions [49]. Futures transactions are impermissible because of their association with high risk resulting from the sale of non-owned or non-possessed assets and gambling [50]-[51].

Gharar originates from the Arabic verb “gharra”, which means al-khida and translates as ‘to deceive or to be deceived’ [52]. In Islamic law, it refers to any transactional risk, uncertainty and hazard incurred by one because of their lack of knowledge of material information concerning a particular business or financial transaction [53]-[54]. Quran has not referred to gharar expressly but condemned it indirectly in verses regarding gambling [55]-[56]-[57]. Quran aside, the Sunnah of the Prophet prohibits gharar in contracts [56]. In a well-known hadith, Prophet stated: “do not sell what is not with you” (la tabi ma laysa indika).

Futures trading is thought to contain gharar, especially in respect of the future's underlying asset, which might not yet exist or be owned by the seller at the time of contracting, which further affects the certainty of the pricing [58]-[59]-[60]. Gharar exists in a sale where one or both parties take excessive risks (mukhatarah) [61]. The transaction becomes void because of the prohibited gharar, and the goods exchanged under such void transaction become unlawful, making the parties liable for return/refund [62]-[63]-[64]-[65]. According to Ibn Tamiyyah, parties who hold on to such unlawful transactions are, then, deemed to have been devouring the property of others [66].

Too, futures trading is claimed to be poisoned with maysir (qimar), which is thought to be the worst form of speculation commonly known as pure gharar [2]-[47]-[49]-[50]-[53]-[67]-[68]. The Arabic word ‘maysir’ derives from yassira (to ease), and yassara (to succeed) means wining something too quickly or getting a profit without making an effort to earn it. Islamic jurisprudence defines it as ‘taking a risk in the hope of gaining an advantage or a benefit whose materialisation is fully or substantially reliant on a game of chance’ [12]-[19]-[68]-[69]. Al-Misri describes it as a combative game played by two contracting parties, each of whom undertakes the risk of loss

and the loss of one means the gain for the other’ [52]. Quran condemns maysir in several verses, which describe it as ‘immoral gambling that sows the seed of enmity and hatred among humans. Futures transactions involve maysir because they materialise zero-sum games in which gains are matched with corresponding losses [38]. Apart from non-exchange contracts, Islamic law allows only business contracts that can offer mutual gain while containing the possibility of risk. Futures allow no room for mutual benefits. As De Lorenzo [70] claims, ‘futures amount to bets on the direction the market is moving in’. It is, however, worth noting that non-exchange contracts such as gift (hiba), endowment (waqf), and unilateral promise (wa’ad) do not follow the rules of Islamic law on exchange (business) contracts. They follow different rules of non-commutative contracts that allow the donor / the promisor to transfer ownership of an asset to a counterparty without consideration. Non-commutative contracts are charity transactions, offering gain only to one party while capable of containing more significant uncertainty. As the name suggests, an exchange-traded futures transaction is a business contract of exchange, not a charity transaction.

Gharar also forms the primary rationale for the impermissibility of bay’a-ul-kali-bi-al-kali, which is further extended by analogy to exchange-traded futures transactions [56]-[69]-[72]-[73]-[74]. The bay’a-ul-kali-bi-al-kali concerns a sale whose countervalues are purely an exchange of promises. Like a bay’a-ul-kali-bi-al-kali, futures trading contains a promise-based future exchange comprising mutual deferment of both counter-values. A commitment by the seller to sell and deliver a specified asset in return for a corresponding promise by the purchaser to purchase and pay for the same, both at a specified date in the future. The promisors in such a transaction then become the debtor and the creditor simultaneously in respect of the same transaction.

As such, the transaction becomes a sale of one debt for another’, which is claimed to be prohibited under the Islamic law of contracts. A sale can be valid in Islamic law if either the price or the delivery is postponed, but not both [24]-[75]-[76]. In futures sales, both counter-values are non-existent at the time of the contract [24], so they are purely exchanges of promises. It is claimed that the prohibition of such sale under Islamic law is mandated by a unanimous agreement of Islamic jurists [66]-[77]-[78]-[79]-[80], also referred to as Ijma which is a secondary source of Islamic law [81]. The Organisation of the Islamic Cooperation (OIC) and the International Islamic Fiqh Academy have also rejected the validity of any futures sale where the delivery of the merchandise is agreed to take place in the future (as a pending obligation) with the price to be paid on delivery. It is thought that such a contract is not permissible because of the deferment of both exchange elements. Still, it may be amended to meet the conditions of a permissible salam (advance payment) contract. The European Council for Fatwa and Research also confirmed this position.

As futures trading verges on gharar, it is claimed that it violates the validity requirements of a permissible sale under Islamic law. Any contract of sale under Islamic rule must take the form and satisfy the validity requirements of a bay’a

contract which is a nominated contract and permissible under the Figh-ul-Muamalat in Islamic law. Bay'a is one of the proprietary contracts (uqud al tamlik), and a valid bay'a involves transfer of title to the asset from the seller to the purchaser. This is also referred to as bay'a-ul-tamlik, which requires the countervalues to exist and be owned by the seller at the time of contracting to avoid gharar. Islamic jurists have defined a sale as "tamlik-ul-eain be-al-thaman-il-ma'loom", meaning the transfer of title on a specific asset for a known price. This is also referred to as bay'a-ul-a'ayan, where the subject matter of the sale is a particular asset in rem rather than a generic obligation (kulli) [27]. If the seller does not own the specific goods before the sale, they cannot transfer ownership. Similarly, parties cannot agree on the ownership of the goods to be shared at a future time. Any form of postponing the transfer of ownership of the goods specified in the contract to a future time would transform the contract into maysir, which is prohibited [24].

In addition to these, where the goods are moveable, it is further suggested that the seller must already have the goods before resale [82]-[83]-[84], whereas in future, parties do not even intend delivery or possession [85] as transactions often complete by simply settling the differences in prices [86]. Such transactions are seen as superficial and simply on paper rather than genuine transactions [1]-[27]). They are therefore classed as short-selling, which ceases to serve any proper economic function [6]-[87]-[88].

Finally, it is worth noting that some modern scholars in this camp allow the use of Islamised futures, i.e. futures transactions that are put in a Sharia'h compliant format using substitute Islamic contracts other than the standard Bay'a. These include Bay'a-ul-Muajjal, Bay'a-ul-Salam, Bay'a-ul-Istisna, Bay'a-ul-sifah (sale of description), Sulh (compromising settlement), Muawadah (exchange) and Jualah (reward) [4]-[5]-[73]-[74]-[89]-[90]-[91]-[92]. Nonetheless, as it is explained next, such Islamised futures fail to secure the main purpose of the futures derivative, namely risk hedging, to a great extent.

B. Permissibility view

Many contemporary jurists and academics have taken a liberal view that hedger-hedger futures trading would satisfy the permissibility requirement of the Shari'ah law of contracts if the domain of the Islamic prohibitions do not unnecessarily exceed their intended framework. Islamic teachings suggest a careful distinction between two categories of intertwined relationships. One concerns faith ('aqidah), worship (ibadat) and ethics (akhlaq), whereas the other relates to socio-economic conduct (mu'amalat). The first involves a human relationship with God whilst the second concerns the human relationship inter se. With regards to the former, believers do not have much freedom to define the terms of the relationship. There is, however, reasonable space for development and innovation in respect of the latter. For instance, Muslims are required to do daily prayer exactly as prescribed, but they are free to choose to engage in business on their own terms. Islam respects business contracts and recognises that such contracts

are prima facie the creation of the evolving business practice. Many business contracts existed even before the introduction of Islam and were subsequently approved by it. Islam, however, intervened in limited circumstances to secure compliance of business practice with certain Islamic prohibitions as demonstrated in the fiqh al-mu'amalat. An example is the well-known distinction in Islamic law between the practices of Bay'a and Riba. Both existed before Islam, but Islam approved only the former and disapproved the latter. Islam, therefore, endorses a general principle of permissibility (Aşalatul Ibaḥah) and an adapted contractual freedom through which a newly evolved commercial contract should be assumed permissible by default unless it violates the prohibitions of Islamic law. As the limitations are few and against the general permissibility principle, they will have to be applied exactly to their intended cases, rather than being applied overly and based on a generous construction. Futures contracts and trading did not exist at the time of the introduction of Islam, so the primary resources of Shari'ah have not prohibited them. Nonetheless, the Prohibitionists made the prohibition of futures trading through an unreasonably generous interpretation of resources by way of ijthad. To put it specifically, they have been routinely making an unjustified analogy (qias) between a permissible bay'a contract and a futures transaction and prohibiting the latter accordingly. The contemporary prohibitionists, on the other hand, appreciate that the analogy between bay'a and futures is an unjustified one, yet they make the analogy between futures transactions and classical contracts other than bay'a. According to this view, futures transactions whose underlying contract takes the form of either Sulh, Juallah, Istisna or Salam could better fit with the nature of futures transactions while adhering to Islamic prohibitions [4]-[5]-[89]-[93]. Such future transactions can be permissible under those frameworks, but not bay'a. Such adapted forms of futures transactions surely ensure compliance with Islamic prohibitions; yet again, they simply miss the purpose of risk hedging, which is to enable the parties to change their mind at the expense of a small cost when future events unfold unfavourably. The ijthad by qias approach is failing. A futures transaction is a new mode of trading that undoubtedly does not fit with the rules of the classical contracts and, as many scholars indicated, calls for a fresh response tailored considering the operative procedures of future markets [94]-[95]-[96]. Ijthad by Aşalatul Ibaḥah approach should replace the Ijthad by qias approach in the context of futures transactions.

The proponent of permissibility further counterargue that a hedger-to-hedger exchange traded futures transaction not only does not associate with the forbidden transactional uncertainty (gharar) but rather such transaction reduces gharar to the minimum for three reasons [3]. First, the standardisation of contemporary futures trading requires the commodity traded to adhere to the set quality and quantity standards. Futures contracts detail the quantity of the underlying asset and are standardized to facilitate trading on a futures exchange. They guarantee a level of quality regardless of where the asset is from. For example, Crude Oil futures ensure that regardless of

the refinery, a buyer can be sure they will be getting the same oil standard. Likewise, one Crude Oil futures contract is normally tied with a specific quantity, so for example, on the Chicago Mercantile Exchange, each contract covers 1,000 barrels of oil. Therefore, if someone wanted to lock in a price on 10,000 barrels of oil, they would need to buy/sell 10 contracts. The futures markets are regulated by the regulatory bodies to ensure the integrity of futures market pricing, the absence of abusive trading practices or fraud, and the operation of reliable brokerage firms engaged in futures trading [27]-[32]-[33]-[34]. Second, every regulated futures market is assisted by a designated clearing house tasked with validating and finalising the futures transaction, ensuring that both the buyer and the seller honour their contractual obligations. The key role of the clearing house is to accomplish the steps necessary to validate and finalize a futures transaction. Acting as a middleman, it provides the security and efficiency that is integral to the certainty and stability of an exchange-traded futures market. The clearance procedures of the clearing house coupled with a twofold guarantee given to both the buyer and the seller in respect of the delivery of the asset and the payment of the price, virtually eliminate gharar and maysir. Third, although risk-hedging futures transactions carry the potential for loss or gain, they generally serve both parties by eliminating uncertainty regarding the intended future exchange of goods/services and price. The potential for loss or gain also remains as an incidental commercial risk which is an inevitable part of engaging in business in general and is supported by the Hadith that links returns to risk in commerce. Commercial risks are either systematic and arise out of the exposure of the economy to uncertainty (e.g., a sharp change in market prices, supply of goods or government policies affecting business) or personal and resulting from individual preferences (e.g., risk of bankruptcy due to choosing to undertake business) [89]. A provision to this is the case of a speculative futures transaction. Parties to a speculative futures transaction are not normally hedging any risk but are speculators for financial gain. The uncertainty associated with such futures transaction goes well beyond simple business uncertainty and constitutes enough gharar to essentially amount to maysir (gambling) which is certainly forbidden by Islamic law.

It is also counter argued by the liberalists [2] that the ban on unowned or unpossessed selling which is central to the prohibitionist approach is only relevant where the mabi'a (the subject matter of sale) is a specified object (a'yan) and not a generic fungible (Kulli) asset that can be ascertained, replaced, or substituted in the future [97]-[98]-[99]. Qur'an has not prohibited future transactions but rather validated such transactions. Possession (qabd) prior to sale is generally thought not to be an essential requirement of a valid sale under the Islamic law except only in relation to certain transactions. For example, possession (qabd) prior to sale and hand in hand delivery at the time of sale is a validity requirement in a currency sale (bay'a-ul-sarf) to avoid riba [3]-[27]-[100]. Also, where the transaction involves selling foodstuff, the subject matter's prior possession is considered essential to

avoid gharar [79]. Even then, the foodstuff is construed to simply mean perishable food rather than the food that are traded preserved in tins or are bought and sold in standardized quantities and packages that are weighted, measured, sealed and labelled [3]-[27]-[101]-[102]. Similarly, a sell of non-existent and a sell of non-owned would not render the contract void. The former, selling non-existent goods whose existence is certain in the future, is permissible [103]-[104]. The latter, where the seller does not own the subject matter prior to sell, is considered by many Islamic jurists only non-binding (Muamelat-ul-Fedhouliyah) that could be corrected by subsequent ratification of the innocent party [105]. Therefore, where the seller can ensure transfer of title and delivery, lack of ownership or possession of the subject matter at the time of contracting are no longer an issue [3]-[27].

In addition to these, the claim of Ijma and Hadith on the prohibition of bay'a-ul-kali-bi-al-kali, seem to be unsupported [3]. There are reported controversy among different schools of thought on the definition, types and scope of bay'a-ul-kali-bi-al-kali which conflict with the Ijma claim. While Hanbalies insist on Ijma, many Hanafi and Maliki jurists and Ibn Taymiyah view dayn as a permissible asset just like a tangible good capable of being bought and sold [106]. The invoked Hadith in Sunnah appears to be weak and unreliable in terms authenticity and meaning [66]-[78]. Many contemporary Islamic finance specialists have taken the view that deferring in both countervalues of a sale transaction can be justified on several counts including hajah (needs) and dharurah (necessity) [107] maslaha (public interest) [2] and ibaha (permissibility) [7]-[35]-[53]-[64]-[108]-[109]-[110]-[111]. In the absence of a Qur'anic prohibition on futures sales, the clear Qur'anic respect for sales in general, the authorisation of deferred transactions in the Islamic law of Muamilat and the absence of gharar and riba, futures trading may simply fall back to the general principle of permissibility (ibahah) [3]-[35]-[112]. If such transaction is economically rational and actually reduces the risk for both hedging parties, then surely a more relaxed interpretation of Islamic law based on Maqasid-ul-Shari'a, social welfare and public need could be justified [2]-[113]-[114]-[115].

IV. THE THEORY OF MAQASID-UL-SHARI'AH

The theory of Maqasid-ul-Shari'ah has great potential to resolve the ongoing controversy among Sharia'h scholars over permissibility of risk hedging transactions in Islamic finance discourse. The gist of the theory is to construe divine laws of Islam prima facie according to their intended purpose rather than literal meaning. On several counts, it authorises risk hedging transactions despite their apparent clash with literal rulings of Sharia'h. The theory is not, however, a straightforward one. Often, the intended purpose which underpins the theory is implicit and hard to discover. The circumstances under which the theory may authorise futures trading thereby overriding the explicit rulings of Shari'ah are not clear too. This section concerns the theory of Maqasid-ul-

Shari'ah and its relevance in justifying permissibility of risk-hedging transactions.

Islam claims to have constructed a new multi-faceted order with guidelines to safeguard humans' prosperity in this world and thereafter [116]-[117]-[118]. Unlike atheism [119]-[120]-[121]-[122], it does not regard nature as a purposeless evolution but rather a system with an assigned purpose created by the creator. Everything, including economic activities, transactions, operations, and systems, should function in the same order [123]. The gist of the new order manifests in its Maqasid al-Shari'ah discourse [124]-[125]. Maqasid-ul-Shari'ah seeks to demonstrate the purpose and objective of Islamic law, i.e., the underlying purpose of the explicit rulings of Islam [118]. Maqasid-ul-Shari'ah can be vague without proper interpretation, as Islamic theorists have not agreed on how to materialise this underlying purpose. For many classical Islamic legal theorists, it is the other word for public interests. A purpose is valid as long as it preserves the interests of the public or leads to the avoidance of some mischief (mafsadah) [126]-[127]-[128]-[129]-[130]-[131]). To identify a valid purpose, they would normally classify Maqasid-ul-Shari'ah into three levels of necessity: necessities (daruraat), needs (haajiyaat), and luxuries (tahsiniyaat). These levels are set hierarchal relative to the level of their importance to humans' life, starting from the necessities as the highly essential at the bottom, the needs as the less essential in the middle and the luxuries as unessential on the top. The last two are respectively less essential and unessential for human life. For example, marriage, trade, and means of transportation are less essential as one's lack of any of these would not pose a threat to their life. Likewise, luxuries things such as using perfume, stylish clothing, and beautiful homes carry the lowest priority in one's life. The first, on the other hand, is viewed as the wholesome essentials of humans' life which is divided it into a further six categories of preservation of one's religion (din), preservation of human self (nafs), preservation of intellect ('aql), preservation of posterity (nasl), preservation of wealth (mal) and preservation of honour (erd). These necessities constitute the objective behind any revealed law, not just the Islamic law. Accordingly, an action taken in light of these necessities serves to the public interest and is therefore considered desirable' [132]. This minimalist approach: fully mirrors fiqh-ul-Shari'ah; fails to make a justified distinction between different rulings; cannot go beyond the explicit rulings of fiqh-ul-Shari'ah; and is unable to scientifically identify and accommodate the implicit objectives of Shari'ah from the original primary sources [124]. It simply echoes the traditional individualistic take on Shari'ah and would not embrace universal values, such as justice, freedom and equality in appropriate cases.

Contemporary scholarship, on the other hand, have tried to remedy these shortcomings by articulating further classifications of the concept of maqasid. To begin with, a distinction has been made between generic objectives (one-fits all) in rulings of Shariah (General maqaid) and objectives of the rulings that are group, situation, or case specific (specific or partial maqasid). While the former applies to the entire

body of Islamic law [118]-[133]-[134]-[135]-[136], the latter has a much smaller scope of application targeting a specific section of rulings [137]. A further distinction has also been made between the two principal limbs of Shariah, i.e., 'act of worship' (ibadat) and 'worldly transactions' (muamalat) [138]. Literal compliance is the default methodology for ibadat, thus no need for a deduced reasoning neither to any investigation or discovery of a specific objective, as they often go beyond human reason. The latter, on the other hand, needs the consideration of purposes as it concerns the worldly business dealings and seeks to benefit the ummah [124].

The Maqasid-ul-Shari'ah discourse has been helpful in the identification of valid objectives of Shariah rulings, especially concerning worldly transactions within which futures trading falls. First, any proposed ban on futures trading must be justified, just like any other Shariah rulings regarding worldly transactions. Unlike an act of worship, futures trading requires no literal compliance. As explained earlier, the cardinal foundation of the prohibitionist approach in putting a firm ban on futures trading is gharar. Futures trading is thought to contain gharar, especially in respect of the underlying asset, which might not yet exist or be owned by the seller at the time of contracting which further affects the certainty of the pricing [139]. The prohibition's higher objective is to avoid future conflicts between contract parties. This is the Maqasid that is specific to the law of Muamalat (business). Gharar makes the entire contract uncertain, facilitates future disputes between the contract parties and creates an environment of chaos. A contract of gharar causes unnecessary transaction costs, wastes public resources and imposes upon one party unjust loss, hence, it is inefficient and unjust. The absence of a more desirable alternative, a general legal ban on such a contract would save all the concerned parties. But a futures contract is the alternative which would reduce or eliminate chaotic environment, thereby maintaining social morals. By entering into a futures contract, parties create a mutual environment of certainty in respect of their future exchange of assets and price [52]. Whatever happens to the market, the two futures contract parties have a pre-planned arrangement which will remain stable within a set period and would not be affected by any future change in the market conditions. One and the foremost factor contributing to the evolution of futures trading out of the traditional forward trading practice has been to save parties from future disputes/conflicts. The standardization of the assets and payments in terms of maturity, quantity and quality in futures trading has reduced or eliminated uncertainty, thereby saving parties from unnecessary future disputes or conflicts. It saves the parties from multiple coincidence of wants and needs, provides for a fair price to be available from the market thereby assisting the parties to avoid unfair pricing [7] and eliminates the risk of counter party default.

From a micro-perspective, futures market not only helps one party in finding the other party with opposite wants, but it also brings in confidence that the contract would be fulfilled, thus, productivity in commodities are not dampened by the risk of default of the counterparty. It also helps traders to a better wealth planning, provide liquidity strategies, and reduce

associated risks. From the macro-perspective, futures trading is much more cost-efficient than the spot trading and can lead to increased productivity of the businesses and to the growth of the economy.

Secondly, a cardinal objective and a general Maqasid-ul-Shari'ah is 'facilitation'; i.e., to make things easy for the people and to remove unnecessary hardships. It is generally the claim of Islam that it is a religion that alleviates suffering of the ummah (the people), so Shari'ah law consists of rules that are easy to follow and concessionary in most areas [52]. This general Maqasid applies to both the ibadat and the muamalat sections of Shari'ah equally. Quran has referred to the alleviation of hardship in Muslims' socio-economic life in several verses: "Allah has imposed no hardship (haraj) in religion", "hardship attracts alleviation" and "necessity makes the unlawful lawful". In the law of muamalat, this is particularly manifested through the ibaha (permissibility) principle which is facilitative to private transactions. The default position of Shari'ah law in muamalat has been to ratify without intervention the current and evolving business customs and practices as long as those practices and customs produce better than harm to the society (Koehler [140]). Where, harm outweighs the good, a practice is declared void, so for instance, the contracts of gharar, riba, and maysir have been explicitly prohibited in the texts of the primary sources [141]. Most Islamic scholars would agree that facilitation has been the main objective of Shari'ah in its recognition of bay'a-ul-salam despite being a deferred sale. Although a sale of non-existent is principally prohibited due to gharar, bay'a-ul-salam fulfils the higher purpose of removal of hardship and bringing ease to the people, hence it is prioritised over the primary rulings of Shari'ah. The absence of the recognition of bay'a-ul-salam would have caused the small-scale farmers to face hardships. They produced agriculture commodities which were often seasonal, and a requirement of spot sale would have led to the clear risk of over-supply of such commodities at the relevant season in the market therefore facilitating a sharp depreciation of the market price of such commodities which would in turn have generated disastrous consequences for such farmers. As Kamali [52] rightly observed 'futures market facilitates regular permanent, and centralised trading of commodities by bringing ease to the process of buying and selling for both parties. With the market being regulated, the guaranteed function of the clearing house, futures markets can further control any sharp price movements of the commodities as traders are often averse to engage in behaviours that involve price speculation or unreasonable risk-taking [142]. Traders can limit the exposure of the price volatility in the commodities and take a hedging position to offset any loss/gain from the spot market [143].

Third, Maqasid-ul-Shari'ah relies on the touchstone of al-masalih-al-mursalah (the public interests). A contractual arrangement would satisfy the criteria if it were to enhance the interests of the public or to the avoidance of some mischief. As Ibn Taymiyyah stated "God Most High never prohibited a contract which generates benefit to the Muslims, and which does not cause any harm to them" [52]. That is also one of the

main maqasids behind the rulings of Shari'ah for the validation of both the bay'a-ul-salam and the bay'a-ul-istisna which seeks to recognise and respond to the legitimate needs of the public or parts of the public even though such may call for a compromise on the wholesale application of the gharar prohibition in respect of a sale of non-existent goods [144]. Despite involving gharar, such sales have been approved, because they do not lead to conflicts between the contract parties, instead they secure the mutual benefits of the parties under the contract.

Fourth, risk-hedging futures trading meets the necessity element of Maqasid-ul-Shari'ah on several counts. To begin with, it helps preservation of wealth of the Muslims. By using such futures, contract parties control future risks and mitigate uncertainty by fixing future assets and prices. Such futures trading enables the parties to plan an arrangement for uncertain future so that uncertainty and future surprises and disputes are reduced. The preservation of wealth would further lead to the economic growth of Muslim communities. Furthermore, it would help preservation of Muslims' honour, as contract parties minimise potential future commercial failure (insolvency / bankruptcy). They maintain and deliver their business undertakings and promises on an ongoing basis which will in turn facilitate establishment of stronger business and financial network. Also, the preservation of wealth may further lead to the preservation of human self, as parties have resources to maintain human dignity. Additionally, the healthier the business, the stronger the dedication and serving of that business to the religion and the religious purposes, as parties have resources to undertake religious duties and to develop into a better human and to contribute to their Muslim communities.

Finally, ijthad which is unanimously considered as the most important tool for the development of Shari'ah law and responsible for responding to the pressing needs of Muslims in this ever-changing world is linked with Maqasid-ul-Shari'ah. The focus of ijthad to date has been on finding a full match between a proposed product and the classical Figh-ul-Shari'ah with Islamic jurist mimicking one another. Many Islamic jurists may regard any innovation that has no roots in the traditional practice of the Muslim community as a form of bid'ah in Islam which is prohibited. However, ijthad will not function properly, if the jurists keep mimicking the past, stick firm to the explicit rules of the classical Figh-ul-Shari'ah and ignore the implicit rationale behind it [145]. Most of the modern Islamic jurists make a considered distinction between permissible and impermissible bid'ah. An innovation that concerns the worldly affairs is permissible whereas an innovation in matters of religion is impermissible and a great sin. As many contemporary scholars have suggested, a new form of ijthad should be practiced; one that can evolve with the new developments and can ensure that its application mirrors the present time [52]-[145]-[146]. Jurists must be prepared to go behind the explicit rulings of Shari'ah to discover the true rationale of such rulings and to develop into competent Shari'ah law interpreters who may then rightly engage in a re-examination of modern transactions in the light

of their true nature, function and purpose within the contemporary complex economic landscape [52]-[124]-[146]-[147]. This also explains why Ibn Qayyim warns of the danger of an undesirable tendency among present jurists to conform to the views of the earlier jurists:

“Shari’ah is based on wisdom and achieving people’s welfare in this life and the afterlife. Shari’ah is all about justice, mercy, and good. Thus, any ruling that replaces justice with injustice, mercy with its opposite, common good with mischief, or wisdom with nonsense, is a ruling that does not belong to the Shari’ah, even if it is claimed to be so according to some interpretation” [124].

V. CONCLUSION

This paper deployed the Maqasid-ul-Shari’ah theory to establish a strong case for permissibility of the controversial futures transactions in Islamic finance discourse and Islamic financial markets. Futures have been widely used by investors, businesses, and traders in the contemporary financial markets for either investment risk mitigation or speculative investment. Islamic financial markets, however, have been reluctant to allow the use of futures trading, no matter risk hedging or speculative, for its perceived inconsistencies with Shari’ah law. Futures trading is thought to involve speculation and exchange of future promises both of which are prohibited in Shari’ah for gharar. Yet, the matter is unsettled in the Islamic finance discourse. Islamic jurists and academics have grouped into two main camps: prohibition and permissibility. The former which is the predominant approach took the view that futures trading violates fundamental prohibitions of Islamic law; and the latter, whilst agreeing to the contention that purely speculative futures trading should be impermissible, disagree with the prohibitionists in that futures trading that is meant for risk hedging should also be disallowed. They counterargue that risk hedging futures transactions do not contain gharar for lack of speculation. Futures transaction is a modern innovation with no comparative within the Islamic law of business. Since it is an innovative contemporary practice, an analogy cannot be drawn between futures and a contract of sale (bay’a) under Islamic business law, which does not allow exchange of future promises. Instead, Islamic law should evolve through ijtiḥad to recognise the new arrangement under the operative procedures of futures market. Futures trading should therefore fall within the ambit of the principle of permissibility (ibaha) and be declared permissible if there is no express prohibition.

While the existing controversy in Islamic finance discourse centers around conformity with the explicit rules of Sharia’h, both views ignore the Maqasid-ul-Shari’ah take on the matter. This paper took a Maqasid-ul-Shari’ah approach in respect of futures transactions instead. It is the first contribution to fill the stated gap in current literature on Islamic finance. It adds on to the permissibility view that risk hedging futures trading should be recognised and declared as permissible not simply because they do not conflict with any prohibition, or benefit the individual parties involved but also, they serve for the wider interests of the public (al-masalih-al-aammah). The

findings of this research suggested that the current practice of Islamic financial markets that mirrors the prohibitionist view displays a great deal of inconsistencies with general Maqasid-ul-Shari’ah principles. A blind ban on futures transactions ignores necessities of Maqasid-ul-Shari’ah and contributes to chaotic financial markets and increased future disputes/conflicts. On several counts of necessities, risk-hedging futures help Muslims to preserve both the individual and the public wealth, honour, human self, and religion. Parties will have resources and credibility and will enjoy reasonable business certainty to maintain and develop wealth, undertake religious duties and develop into a better human and contribute their Muslim communities and their economic growth.

The Maqasid-ul-Shariah analysis which regards futures trading as an element of necessity aiming at securing the interests of the public is further compounded by the two higher objectives of Shari’ah, i.e., facilitation of commerce and prevention of future conflicts in business practice. It is clear from primary resources of Islam that facilitation of business has been the higher objective and default position of Sharia’h law. Where, the good outweighs the harm, a practice can be declared permissible despite it being associated with excessive uncertainty, so for instance bay’a-ul-salam contracts are generally permissible. In the case of a hedger-hedger futures trading, uncertainty is reduced to a minimum. The standardised format of contracts, the regulated market where the actual trading takes place and the clearing house’s guarantee function not only reduces chaotic environment and strengthens social morals but also provides a suitable alternative to an unwanted gharar prohibition which simply voids private contracting of futures.

Despite the strong link between Sharia’h and Maqasid-ul-Sharia’h, ijtiḥad has been reluctant to use the norms of the latter to make more sense of the former. Many Islamic jurists may take a too cautious position and regard any innovation that has no roots in the traditional practice of the Muslim community as a form of the prohibited bid’ah. However, innovation in matters of the worldly affairs not only is permissible but also a prerequisite to Muslims’ life. Most Muslims agree that it is impossible to adapt to changing conditions without introducing some forms of innovations. Obviously, hedger-hedger futures trading is not a religious activity but is a worldly matter capable of taking in desirable innovations that create easier life, reduced future uncertainty, and less hazards and conflicts. Jurists must therefore be prepared to discover the true rationale of Shari’ah rulings in order to examine modern transactions in the light of their true nature, function and purpose within the contemporary complex economic landscape.

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A Critical Shariah and Maqasid Appraisal of Islamic Credit Cards

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Abstract - Islamic banks and financial institutions have recently started issuing Islamic credit cards as substitutes for conventional credit cards after the Shariah scholars, due to the Riba involved, unanimously deemed the traditional credit cards unlawful. However, Islamic credit cards have different structures; some have been structured based on Eina or Tawarruq sales even though these two types of deals were ruled unlawful by the Fiqh academics. However, the most common structure of Islamic credit cards is the Ijarah model, where the card issuer is deemed a lessor of the services embedded in the credit card, apart from the provision of credit, against fixed periodical fees. Although this structure seems acceptable from a Shariah point of view and has been endorsed by the Shariah boards of the issuing Islamic banks, it involves some issues that must be carefully addressed. The paper elaborates on these critical issues and analyses the different contractual relationships involved in these cards to outline the prospectus of a genuine Shariah-compliant credit card.

Keywords - Credit Card, Islamic Credit Card, Islamic finance, Islamic banking, Islamic product development

I. INTRODUCTION

Islamic finance is a system that identifies and promotes economic and financial tools and products consistent with Sharia's principles. Although Islamic financial institutions share similarities with conventional financial intermediaries as both are profit-maximising institutions and offer traditional banking services. Still, they differ in some of the principles under which they operate. Islamic principles require that earnings come from permissible means and be spent on good categories of expenditure allowed in Sharia. Generally, Islam prohibits investing in businesses that are considered unethical or are contrary to the Islamic ethical teachings and values, like dealing with Riba (usury/interest), Gharar (speculation/uncertainty), Maysir (gambling), and investing in unpermitted activities and businesses in Islam, like alcohol, tobacco, pork-related products, and pornography etc. [1]. Moreover, its investments should be asset-backed or identified as an underlying tangible asset, and a proper application of the profit and loss-sharing concept should be maintained [2].

Islamic economics mainly regards wealth as a means for achieving justice, equality, fairness, and economic

equilibrium in society. Islam does not discourage maximising wealth if it does not create a situation of social distortion or violate the norms of Islamic justice. El-Bassiouny [3] summarises that Islamic finance's comprehensive goal is avoiding harm to all humanity and promoting its properties. Speaking of the objectives of Islam, around which the general rules of Islam are based, Dusuki, and Abdullah [4] refer that the key objectives include safeguarding the religion, the intellect, the human self, the progeny, and wealth. In Islamic financial institutions, adherence to Shariah principles is monitored by either an internal or external Shariah Supervisory Board (SSB). This Board is a panel of Shariah scholars who assess the products and practices of the institution and conclude about the institution's compliance with the Shariah requirements [5].

Islamic Finance is the fastest-growing sector of finance in the world. Although it started in Muslim countries, it has also spread to non-Muslim countries and serves Muslims and non-Muslims alike. Muslims count for around 24% of the global population, and Islam is the world's second-largest religion, with the fastest growth rate, according to a Pew Research Center's 2011 Report [6]. These factors have also assisted in the remarkable growth of the industry worldwide. Moreover, Biancone and Radwan's [7] study points out that countries worldwide are looking to introduce Islamic finance as an alternative financial system after the recent financial crisis. This is because, despite the latest financial crisis that caused difficulties for many conventional banks worldwide, Yilmaz [8] claims that Islamic banks were broadly safe from the situation, courtesy of their prudent financial behaviours. The Islamic finance industry has experienced exponential growth in recent years, and the assets held under Islamic finance management have already crossed Reuters' [9] expectation of \$1 trillion. Conventional financial institutions have extended their operations to provide Islamic financial products catering to Islamic investors. Biancone and Radwan [10] highlight that entrepreneurs financed by banks have been gradually increasing in most countries where Islamic banks operate, for example, the United Kingdom and Switzerland, where there is a more excellent

supply of entrepreneurs who have started demanding Islamic financial products.

The paper is divided into seven sections. After the introduction and literature review, the article discusses the basis and features of credit cards, their advantages, and their disadvantages in section III. The following section is the appraisal of Islamic credit cards considering the objectives of Sharia, which is the main subject of this research. It covers the basics of the legitimacy of different types of Islamic credit cards and mentions the scholars' stances therein. Sections V and VI discuss two major concerns in using credit cards and their permissibility. The paper concludes by summarising the results and suggestions in section VII.

II. LITERATURE REVIEW

Despite the expansion and growth of Islamic finance in the previous decades, its full potential has yet to be realised in various arenas. It must expand its services to innovative financial tools in tandem with Islamic principles to realise its true potential. One such financial tool is the introduction of credit card products, like the already existing tool in conventional financial institutions. Al-Enazi [11] claims that Islamic financial institutions have adopted credit card practices by altering specific components that contradict the Shari'a requirements, for example, by eradicating the interest-based elements included within conventional credit cards. Most of the literature on an Islamic credit card is focused on its basis from Islamic texts, and a few research, like Choo et al. [12], study the consumer's choice of credit cards and their acceptability. Other studies, like Johan & Putit [13], relate to the issues of people's knowledge and religiosity influencing their decisions on whether to opt for credit cards or abstain from them. On the other hand, Mansor and Azman [14] studied factors, like demographics, to observe whether they can be a good indicator for an Islamic credit card.

Given the substantial increase in electronic payments, to the detriment of cash payments, Islamic credit cards have already penetrated the banking sector and are abundantly found in the market. But there needs to be more research considering the connection between current Islamic finance practices and their validity, given the complexities of modern-day financial developments. But to ensure that the Islamic credit card and its services can help strengthen the competitive position of Islamic banking vis-à-vis the conventional banking system, the banks must deepen their understanding regarding the legitimacy and basis of such a product, too averse any Shariah risk emanating from such a product [15].

The motivation for this paper comes from the necessity to appraise the current practice of Islamic credit cards from a Maqasid perspective and to assess its legitimacy since its issuance and its underlying contracts while addressing the Shari'a perspectives of credit card structures. This paper is exploratory and conceptual, providing insights for researchers, decision-makers, and practitioners on how Islamic credit cards can prove better compliance with Sharia.

III. CREDIT CARDS, ITS ADVANTAGES AND DISADVANTAGES

Islamic banks are required to expand marketable products and services based on Islamic instruction standards. One of these services, which is the focus of the study, is the Islamic credit card. Financial institutions, typically banks, provide a credit card that enables the cardholder to borrow funds as loans from that institution under the agreement to repay the loaned amount by the bill's due date or incur an additional agreed amount. A credit card is a means of payment which involves buying first and paying later, as defined by Yee, Eam and Sanusi (2007) [16]. It is based on the principle of a loan without interest (i.e., *riba*) if the loan is repaid on or before the specified date, i.e., the grace period, and with interest if repayment is delayed beyond that time. Charging interest only in case of delay beyond the agreed repayment period is one variety of *Riba al-Jahiliyya*, which is impermissible. According to OIC Fiqh Academy [17], resolution no. 108 (2/12), issuing and dealing with conventional credit cards is unlawful due to this reason. Nevertheless, despite this Shariah primary concern, credit cards generally have unique features and benefits for their holders and issuers.

A credit card is one of the most convenient and secure payment tools accepted worldwide. It has replaced the need to carry cash, which is especially handy for international travellers where local currency is needed or where it is difficult to take large amounts of money in one or different currencies. The cardholders also benefit from increased purchasing power, in addition to being rewarded in the form of points, cash-back offers or gifts, prizes and discounts for using the credit cards. The user may qualify for additional credit facilities if he can build a good credit history. A credit card holder can shop through the internet, where no cash payment is accepted, allowing him more significant opportunities and possibly better prices, such as buying travel tickets, booking hotels, and participating in international auctions. Cardholders use it for e-payments and electronic purchases to guarantee payment, which has sparked explosive sales growth for expenditures on transactions which require a system of insuring payment (Fineberg) [18]. It can also be used to make automatic recurring payments from the card, such as phone, water and electricity bills.

Merchants also have a share of benefits from credit card systems like guaranteed payment, fraud protection, cash balance safety, and increased sales and revenue due to the boost in cardholders' purchasing power. Credit cards increase business activities and profits because it provides people access to finance. Radishe [19] points out that this explains why businesses consent to waive a specific percentage of the value of their sale items (the interchange fee) for the benefit of the credit card issuer. To this effect, the card issuers may grant new cardholders' attractive rebates to lure them into subscribing to the card, especially on their first purchases or for a limited time. Since the credit risk of cardholders is shifted from the merchant to the card issuer, i.e., the bank, the merchants are guaranteed to receive the payments. It can also

help traders reduce the difficulty of handling cash in their businesses and the costs of transporting it to banks.

Similarly, the credit card issuers benefit from different types of penalties and fees like card issuing fees, annual card fees, card renewal fees, cash withdrawal fees, late payment penalties etc., in addition to the price they charge to the merchants for using the technological infrastructure that they use to accept payment through credit cards. It provides a profit for the issuers through a percentage on all purchases that are charged (the interchange fee) to the merchants accepting the card, in addition to the amount charged to the cardholder if he delays the credit payment beyond the grace period as well as the amount charged for using the card to withdraw cash. This interchange fee is permissible according to OIC Fiqh Academy resolution no. 108 (2/12) and according to the Shariah Standard no. 2/5 issued by Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) [20]. Issuers may also charge issuance or periodical fees to the cardholder regardless of whether the cardholder uses the card. OIC Fiqh Academy's resolution no. 108 (2/12) deems these permissible as they are against the embedded services in the card, apart from the credit involved.

However, credit cards have drawbacks for cardholders, issuers and accepting parties. The conventional credit cardholder is supposed to pay the considerable compound interest (*riba*) if he does not repay the credit amount before the end of the grace period. The interest rate is estimated at around 2% per month. The grace period is cancelled if an unpaid amount remains from the last period. The interest calculation begins on the first day the monthly bill is issued. This could lead the cardholder to be gripped in the clutches of debt so that he may keep paying his debts for several years. The issuing parties justify the high interest by the high probability of default and failure to repay the debt. This means that some cardholders pay on behalf of others to render this business as profitable to the issuers. Apart from this financial disadvantage, credit card encourages its holder to buy unnecessary things, encouraging thus extravagance and the purchase of luxuries, which contradicts moderate spending and good management of money. Abozaid [21] highlights that it contradicts the Shariah stand on debt, as Shariah does not encourage incurring debts. However, it encourages providing good loans to those who are impecunious and in need. The concept of credit cards encourages consumerism and debt-taking, which leads to mounting indebtedness and financial instability in society. The traders also lose some profits from the credit card because the banks issuing the credit cards discount a certain amount (2.5% on average) from the value of the sale items through the card (the interchange fee). This could cause businesses to increase their prices to compensate for this deduction, and such an increase is ultimately borne by the buyers.

Thus, credit cards contain benefits and harms for their users, and it is left to the financial skills and knowledge of the user and the way he/she chooses to use it. However, they have become part of the demands of modern life. With an increase in Internet usage and the trend of e-commerce, and other technological advancements, the credit card has become an

indispensable tool for effecting payment. There is hardly a single person living in a country with a developed financial system who does not carry a credit card, especially in this digital era. According to the World Payments Report 2020 (Capgemini) [22], global non-cash transactions surged nearly 14% from 2018-2019 to reach 708.5 billion transactions, the highest growth rate recorded in the past decade. The report predicts a compound annual growth rate (CAGR) of 12% for global non-cash transactions for 2019-2023. Does this pose a question: do these benefits justify using credit cards if the holder seeks to repay the loaned amount within the grace period? On the other hand, is the mere subscription to a credit card a problem from a Shariah perspective due to the possibility of paying interest if there is an unplanned or unintentional delay, or due to the implicit agreement of paying *riba* in the case of delayed repayment?

To answer these questions, the paper will present the supposed alternative to credit cards that Islamic banks provide. If this alternative were sound from the Shariah perspective, it would free us from the need to use conventional credit cards, and it would assist us in judging their use as impermissible.

IV. CREDIT CARDS ISSUED BY ISLAMIC BANKS

Since conventional credit cards are based on debt financing, and any increment to the debt violates Islamic law, Islamic banks started issuing credit cards as an alternative to conventional credit cards after the latter was ruled impermissible, given the *riba* involved. The relationship between the conventional credit card issuer and the cardholder is based on *riba* if there is a delay in repayment beyond the grace period.

The OIC Fiqh Academy, in its resolution no. 63 (1/7) defines the credit card as “a document given by its issuer to a mutual or a juridical person based on a contract between them enabling it to buy goods or services from a vendor who approves the document, without paying the price immediately as the document includes the issuer's commitment to pay.”

Financial institutions have devised different structures of credit cards, to correct the *riba*-based relationship between the issuer and the cardholder. Among these structures, the paper will discuss the most popular ones; credit cards based on *'īna* or *tawarruq*, and service *ijārah*.

A. *Firstly, credit cards based on Bay al-'īna or tawarruq*

Tawarruq refers to buying a commodity from one party on credit and selling it to a different party for cash to obtain cash. *'īna* is a sale that is mostly resorted to to circumvent the prohibition of *riba* by selling a commodity to the person seeking financing at a deferred price then instantly buying it back at a lesser spot price. Thus, *tawarruq* shares the same objective of *bay al-'īna* as both are meant for extending cash money. However, *tawarruq* remains technically distinguished from *bay al-'īna* as in the latter, the commodity is resold to its original seller, while in *tawarruq* it is sold to a third party.

Given that credit cards are used for financing - the bank provides financing for the cardholders and gains its profits from that financing - and given that *riba* is regarded impermissible, some Islamic banks structure their cards in the following formulas as they do not regard practising *tawarruq* and *bay al-'īna* as problematic.

The Islamic bank initiates a *tawarruq* or *'īna* sale with the customer. Then it creates a special account, i.e., the customer's credit card account, and places the financing amount in it. The customer is then given a credit card with a credit limit equal to the amount of financing stored in that account. Thus, the cardholder is using the card to pay from the money he got from the *'īna* or *tawarruq* procedure and has not borrowed anything from the card issuer, i.e., the bank. Once the monthly bill is issued, the cardholder should top up that account, within a specified period (like the grace period in a conventional card), with the same amount spent on the bill, to renew the balance of his credit card.

If the customer is late in repayments, the bank gains profit (not *riba*) from the difference between the prices in the preceding *'īna* or *tawarruq* sale. For example, if the bank sells a commodity based on *'īna* to a customer for 15000 on a deferred basis, and then buys it from him for 12000 on the spot, then the 12000 is set as the credit limit and is placed in the card's account and not given to the client. If the customer delays topping up the account beyond the grace period, the bank charges the client for this delay with a set amount through the difference between the two prices, i.e., 3000. If the client frequently delays repayment until the amount charged to the customer has reached 3000, the bank requests him to sign another *'īna* or *tawarruq* contract.

This means that the *'īna* or *tawarruq* contract does not come into effect if the client repays during the grace period or returns the card without falling behind on his repayments. In the latter case, the bank performs a clearing between the two prices in the *'īna* or *tawarruq*; the price that it is due to the client (12000) and the price that is due to the bank (15000). The difference between them, i.e., the profit from *'īna* or *tawarruq*, due to the bank, is waived. In the previous example, the bank exonerates the customer of the difference of 3000. Exoneration also occurs if the client's delay does not reach 3000, as the bank exonerates him or her of the remaining amount.

Shariah appraisal of *'īna*/tawarruq-based credit cards

Both *'īna* and *tawarruq* contracts are meant to justify profiting from cash financing, and as such, they are impermissible. *Tawarruq* was ruled unlawful by the OIC Fiqh Academy resolution no. 19/5 since it involves a contrivance to *riba*. *'īna* is, moreover, impermissible according to all jurists, including Shafi'i's, who only validate its contract based on it being a contract that has fulfilled the contractual conditions of a sale contract. However, as noted by Al-Kasani [23], Ibn Qudamah [24] and Al-Dasuqi [25], the Shafi'i's regard it impermissible when it is intended to justify profiteering from a loan contract. Hence, structuring credit cards based on them is impermissible. Nevertheless, some irregular fatwas appeared recently to validate these two sales, designed to circumvent

the *riba* prohibition and yield the same result as a conventional loan. Some Fiqh scholars, such as the Shafi'i's, rule *'īna* as a valid sale given its valid sale structure but ruling it as valid does not imply that it is permissible, since a valid contract is not necessarily permissible, as mentioned by Abozaid [26].

B. Secondly, credit cards based on service *ijārah*

As mentioned earlier, credit card has several advantages for their holders, merchants, and issuers too. The issuers may charge issuance fees or periodical fees to the cardholder regardless of whether the cardholder is using the card. These charges are deemed permissible by OIC Fiqh Academy resolution 108 (2/12) as they are against the embedded services in the card or some privileges that may come with it, such as club memberships, complimentary insurance, and discounts on some items, to name a few. In principle, placing fixed fees on credit cards for such services is a permitted condition for the permissibility of the services offered.

This is because it is permissible in Shariah to charge a fee for a lawful service, just like it is permissible to demand a price for selling a lawful commodity. *Ijārah* is a sale of a usufruct or service, so it is a sale contract. The real usufructs that the card issuer provides to the cardholder justify for him to charge a fee, whether the fee is paid in one go, on a monthly or yearly basis, or a mix of them. Further, different types of services justify varying fees. A privilege card (like platinum or gold) may be charged higher for its valued services. The cardholder pays a fixed fee to the issuer in return for services offered. This fee remains the same regardless of the usage of the card, as in the case of conventional credit cards.

However, Islamic banks that issue these cards waive the fee if the cardholder repays the full value during the grace period. Otherwise, the bank obliges the cardholder to pay the full monthly fee, even if only a single penny is left to be repaid. Islamic banks grant this waiver regardless of whether the cardholder uses the services included in the card because the banks want their cards to remain equally competitive in the market since conventional credit cards waive the additional amount if the cardholder repays the billed amount within the grace period. Hence, one will find that Islamic banks offer similar privileges to their customers as conventional banks. Nevertheless, there is no Shariah issue with this waiver, as it is given as a gift (*hiba*).

C. Shariah appraisal of *ijārah*-based credit cards

As stated earlier, a credit card provides some services that may justifiably warrant a fee. According to OIC Fiqh Academy resolution no. 108 (2/12), charging fees by the card issuer against the services embedded in the card, except for the credit, is permissible. However, according to OIC Fiqh Academy resolution no. 139 (5/15), these cards must not include any prohibited service. Credit cards contains a loan, in the form of the credit card limit that the issuing bank provides to the cardholder. This credit cannot be regarded except as a loan, and profiting from a loan is impermissible, as it is *riba*. Hence, there are two components in a credit card: the services and the loan. A profit can be earned from the service, not the loan. Combining a loan and any other contract like a sale or a lease

entails caution from a Shariah perspective because the fee or the price might be increased in return for giving the loan, as in the *hadīth* that suggests that “combining *salaf* and sale is not permitted”. The Hadith, as reported by Abu Dawud (hadith no. 3504); Al-Tirmithi (hadith no. 1234); Al-Nasai’ (hadith no. 4611), Ahmad (hadith no. 6683), reads:

“The Messenger of Allah, peace be upon him, said: “*Salaf* with the sale is impermissible, or two conditions in a sale, or gaining from the sale of something without or before bearing its liability, or selling what you do not have”.

Al-Nafrawi [27] acknowledge that although this *hadīth* refers to combining a sale with *salaf*, i.e., a loan, but like sale in this regard is any commutative contract, such as *ijarah*, as the jurists say. The reason for the prohibition is that the price of the sale item could increase or decrease to cater for the loan. For example, the lender may tell the borrower: I will lend you 200 dollars on the condition that you buy this (specified) item from me for 50 dollars, though its market value is less than 50 dollars; or on the condition that you sell me this (specified) item for 50 dollars, though its market price is higher than 50 dollars.

Nevertheless, the outward text of this prohibition means that all exchanges combined with a loan are prohibited, including *ijarah*, an exchange contract. The effective cause of the prohibition is clear, that is, using an exchange contract as a stratagem (*tahayul*) or a legal artifice to circumvent the sacred law, to enable profiting from a loan. Accordingly, it could be acceptable to say that it is possible to excuse this combination [of sale and loan] if it is not used as a legal trick. However, two conditions must be met while applying this combination of sale and loan to the credit card’s structure, in addition to not using it as *tahayul*:

(i) that the fee charged for credit card services should not be higher than the normal market fee (if it can be approximated) for these services, and

(ii) The fee should not change if the credit limit changes. The fee may change if the credit card with a higher credit limit provides extra services of additional market value that make the difference in the fee compared to that of the lower credit card limit.

Thus, it is prohibited that cards differ in their fees due to a difference in their credit limit. However, if the cards with different credit limits come with different services, and the extra fee reflects the extra service's market value, then the fee difference can be justified. This implies that the cards that differ only in credit limit while their services are the same may not vary in fees. For example, if the gold-branded credit card has a monthly fee of 200 dirhams and its credit limit is 25,000 dirhams, while the platinum-branded credit card has a monthly fee of 400 dirhams with a credit limit of 50,000 dirhams, and there is no difference in the services offered by the two cards, then the difference of fee cannot be justified. Or if there is a difference but limited to a restricted number of complimentary valet car parking per month, for example, and the monthly market total value of this service is only 50 dirhams, then this makes the remaining amount between the fees (150 dirhams) in return for the extra credit, i.e., the loan impermissible.

V. EARNING FROM CASH WITHDRAWALS

It is impermissible for the credit card issuer to profit from cash withdrawals from ATMs using these cards. This is because the withdrawal amount is a loan, and profiteering from a loan is *riba*. However, it is permissible for the card issuer to cover its actual withdrawal costs, since the issuing bank incurs some costs for the withdrawal, especially when the withdrawal occurs in another country and with a different currency. On top of that, it is permissible for the card issuer to receive a fee for the withdrawal service, provided it is no more than the fee normally charged on debit cards. This is to ensure that the credit provided with the credit card remains free of charge. However, when a withdrawal with a credit card occurs in another country, it is permissible for the issuer to take a reasonable commission equal to the usual fee for exchanging and transferring money. This is because the bank issuing the card provides the service of both exchanging and transferring money in this case.

In this regard, OIC Fiqh Academy, in its resolution no. 108 (2/12) ruled that: “cash withdrawal by the cardholder is a loan from the issuer, and it raises no Shariah objection if there is no *ribawi* increment. Not included are flat fees in return for this service and not related to the amount of the loan or its period, but any increment above actual service is impermissible and is *riba*”. In this regard, it is worth noting that AAOIFI Shariah standard no. 2 (4/5) also allows the issuer to charge a flat fee against the service of cash withdrawal, but it does not restrict the permissibility of being against the actual service.

VI. USING A CONVENTIONAL CREDIT CARD WHEN NO REAL ISLAMIC ALTERNATIVE IS AVAILABLE

The problem with conventional credit cards is that *riba* is conditioned and paid if the cardholder delays repayment. Payment of *riba* is a grave issue that is only permitted in cases of dire necessity. However, if the cardholder takes necessary precautions to avoid payment of *riba* by keeping his expenditures within his budget and opting for automatic deductions of the credit used from his bank account, then the only matter that remains contested is his implicit agreement to payment of *riba*. The cardholder receives the card after undertaking to pay *riba* if he delays the repayment, and as such, he is entering into a fundamentally impermissible contract.

However, the following considerations might help ease this particular concern:

- 1) There needs to be a genuinely legitimate Islamic alternative that overcomes the *riba* problem in credit cards.
- 2) The undertaking to pay *riba* is an enforced condition (*shart ith’āni*) that cannot be changed or dropped by the subscriber, and it is of no consequence if the cardholder always pays during the grace period.
- 3) Many people in our time need credit cards to buy goods and services that may not be possible through other means or for the same price. This is

in addition to the inconveniences associated with carrying cash especially given the risk involved, particularly for travellers.

Nevertheless, if a card that performs the roles of a credit card comes to exist, and it is free from the credit, i.e., a loan, it must be used instead. According to OIC Fiqh Academy resolution no. 139 (5/15), using a (debit) card that does not involve credit is lawful even if issued by a conventional financial institution. To explain further, if a debit card performs the main functions of a credit card, it should be used instead, since there will be no justification then to use a credit card and bear the cautions that come with it. Those cautions relate to the possibility of paying *riba* eventually and encouraging people to buy non-necessities using others' money while incurring unnecessary debts. All these contradict the higher economic objectives of the Islamic Shariah and function against its principles in moderation in spending and debt incurring.

VII. CONCLUSION

In conclusion, structuring a credit card that is compliant with Islamic law and in a way that is profitable to the issuing party is possible in principle. The way is to charge a fee for the services associated with this card but considering that this fee must not be against the loan granted with the card. Therefore, two conditions must apply: the fee should be equal to the market value of these services, and it should not increase with the credit limit of the card unless coupled with additional services whose market value equals this difference in the fee. Islamic financial instruments require both strengthened accounting standards and more expertise and qualified people, and many efforts are needed to raise awareness of such instruments.

The paper also records the following results:

- Credit cards issued based on *‘ina* or *tawarruq* are invalid due to the invalidity of their underlying contracts. Issuing a credit card based on service *ijarah*, however, is possible but with conditions.
- Islamic financial institutions issuing credit cards may charge a commission to the merchants accepting the card, as a percentage of the price of the goods and services.
- It is permissible for the card issuer to receive a fee for the cash withdrawal service provided it is no more than the fee normally charged on withdrawals using debit cards. If, however, an additional service is provided, such as withdrawal from outside the country, then a higher fee is permissible provided that the profit for the additional service does not exceed the normal market remuneration for the money transfer service.
- If a debit card performs the same roles of a credit card, then it should be used instead of the credit card, especially since the latter involves cautions that contradict the higher objectives of the Islamic

Shariah and functions against its principle of moderation in spending and debt incurring.

- On a final note, issuers of Islamic credit cards should do all possible to block the card from being used to buy unlawful commodities or services.

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The Potential and Challenges of Decision Support Systems for Islamic Banking and Finance

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Abstract - A Decision Support System (DSS) is a computer system designed to help with decision-making processes. DSS usage is now commonplace in personal and commercial decision-making – including decisions related to the Islamic faith. Simple Applications (Apps) that help with simple decisions – such as ascertaining the halal status of products and proprietors are prevalent. To what extent can DSS facilitate more complicated Islamic decision-making, such as *fiqh* rulings, *Hadith* classifications, and *zakat* or *faraid* computations? This paper aims to review DSS initiatives (academic and commercial) intended for these more complicated Islamic or *Shariah* decision-making processes, and to identify the potential and challenges – particularly in the contemporary *ijtihad* of reviewing and certifying *Shariah*-compliant status for Islamic finance products and services. The new digital mindset incited by IR 4.0, and accelerated by the Covid-19 pandemic, has paved the way for the potential for Islamic DSS – particularly for the Islamic Banking and Finance industry. Artificial Intelligence (AI) technology makes it possible to represent Islamic knowledge in a computer-processable format and to enable complex *Shariah* decision-making. The main challenge is getting a human *Shariah* expert who can translate his/her knowledge into said computable format. This has thus far led to a lack of Islamic DSS in the market, which can be utilized to support *Shariah*-related decision-making.

Keywords - *Islamic Decision Support System; Islamic Banking and Finance; Shariah Robo-Advisor*

I. INTRODUCTION

The use of computer applications (Apps) that provide decision-making recommendations has become increasingly popular. Such “recommender systems are software tools and techniques providing suggestions” to a user which “are aimed at supporting their users in various decision-making process, such as what items to buy, what music to listen or what news to read” [1]. An example is Google Maps or Waze, that recommend the best routes to a destination, Foursquare that recommends places to dine and TripAdvisor that recommends travel destinations.

Systematic decision making driven by computer systems has also helped commercial organizations to operate more efficiently. For example, Business Data Analytic (BDA) tools enable data driven decision making to predict sales, maintain healthy inventory levels, and to enhance customer relationships – which ultimately leads to increased revenue and profits. According to Lim Kim Heng, the Executive Chairman of Seng Heng (one of the largest electrical appliances chain stores in Malaysia), in his book Sengheng Digital Journey, “BDA goes beyond just looking at numbers to see what has happened; it also endeavours to give insights into why things happen and suggests what actions to take next” [2].

Muslims have some unique decisions to make which are related to the religion of Islam. Familiar examples of simple Islamic DSS Apps are those that often used to determine *Qiblah* (prayer direction), locate halal restaurants and/or determine the halal status of consumer products. A few popular Apps that provide such services are Muslim Pro, Verify Halal, and Zabihah (The original Halal restaurant guide). There have also been numerous efforts to incorporate *Shariah* knowledge into DSS providing some form of technological assistance in decision making for more complex *Shariah* matters, such as *fiqh* rulings, *faraid* computations, *zakat* computations, and *Hadith* classifications, etc. Such innovations have been given various names such as Islamic expert systems, Islamic decision support systems, and Islamic intelligent tools.

While Islam has provided the methodology and the formula for these decision-making processes, some are more complicated than others. For example, *zakat* and *faraid* computations are quite straight forward, however the *fiqh* ruling process requires qualified scholars to perform *ijtihad*, following a prescribed methodology of *usul Al Fiqh* in order to arrive to certain decisions. One of the contemporary *ijtihad* is the *Shariah* approval process of Islamic banking and finance products and services. This serves to certify that these products and services are *Shariah* compliant, before they can be offered to the public.

There have been a few attempts to develop decision support systems intended to assist *fiqh* ruling processes. For example, *El Bayane* (to assist a mujtahid in generating fatwas for new situations by using fatwas issued in past situations) [3], and *Al-*

Usoly (to automate the very complicated process that usually requires a human mujtahid). Unlike the *El-Bayane* that can only be applied in the field of drinking, the *Al-Usouly* system can be applied to any field in Shariah [4]. Dubai has launched its “world’s first Artificial Intelligence fatwa service” [5]. “SKIL Shariah Robo-Advisor (RSA) is claimed to be the first expert system for Islamic finance, whereby users can ask intelligent questions, conduct comparative analyses, deduce from legal maxims, and consult an automated legal advisor, about complex scenarios” [6]. In the study of the technology applied in *Ijtihad* process – particularly artificial intelligence (AI), Ahmed concludes that AI has not reached a level that can replace human *Shariah* scholars, but that AI can help a human *Mujtahid* [7].

The purpose of this paper is to review decision support system initiatives (both commercial and academic) related to these complicated “Islamic” decisions, and to discuss the potential and challenges therein. This discussion is crucial because the world is going through the 4th Industrial revolution, where technology and automation have become a major part of everyone’s life. Humans increasingly depend on smart assistants incorporated with various technologies that could assist them in making guided decisions, in order to be more efficient in this fast-moving digital era. The Financial services industry in particular has been going through a digital transformation facilitated by financial technology. Islamic financial institutions (IFIs) have unique requirements for ensuring that their products and services are *Shariah* compliant.

To be competitive, these IFIs have no choice but to embrace new financial technologies with additional efforts to explore digital innovations, such as decision support systems for *Shariah* related matters in IFIs’ operation. Currently the use of systems or tools in *Shariah* review processes in Islamic financial institutions is still limited. An interview with Mr. Mazrul Shahir Md Zuki, a member of *Shariah* Committees (SC) of Malaysian Industrial Development Finance Berhad (MIDF) reveals that at the moment, the *fiqh* ruling process in IFIs are largely manual – except for using simple computer software such as *Jami’ Fiqh* that contains database of 100 books in the Islamic field, to locate references related to juristic opinions and resolutions. Other than this, SC members will have to read, digest, analyze, and synthesize the reference materials by themselves. This necessitates greater efforts to develop and promote the usage of decision support systems for Islamic banking and finance, in order to help speed up the decision-making process.

This paper will review relevant literature and media on contemporary digital innovations, including published journals, technical reports, blog posts, online newspaper articles, and YouTube videos. The content of this literature and media will be analyzed to identify the potential and challenges therein. It is expected that the stakeholders of Islamic banking and finance (IBF) will be optimistic about the potential for decision support systems to help make IBF operations more efficient, and any technological innovations available for such systems or tools. However, the supply of these systems or tools are limited because they are challenging to develop, due to the need to not only be well versed in *Shariah* ruling processes, but

also be able to represent this knowledge in a computer processable format.

The remainder of this paper comprises a literature review, a methodology, and discussions of the potential and challenges of Islamic DSS solutions, followed by a conclusion.

II. LITERATURE REVIEW

- 1) *Overview of Decision Support System*
- 2) *General Shariah related DSS initiatives*
- 3) *General Fiqh Ruling or Fatwa Related DSS initiatives*
- 4) *Islamic Banking and Finance Related DSS initiatives*

A. Overview of Decision Support Systems

Some scholars define decision support systems as “computer technology solutions that can be used to support complex decision making and problem solving” [8]. “Knowledge-based decision support systems are systems designed to ensure more precise decision-making by effectively using timely and appropriate data, information, and knowledge management” [9]. These systems apply artificial intelligence techniques and other applications of information and communication technologies. A DSS can also be understood as “an information system that aids a business in decision-making activities that require judgment, determination, and a sequence of actions” [10].

A DSS can be employed in various knowledge domains such as medical, dietary, pollution detection, drug reaction, and credit scoring, etc. The “knowledge” that drives the decision making can be models, documents, data, or any predefined procedures or rules. In some cases, a DSS can analyse real time data – making the decision-making choices more relevant and up to date. The most obvious advantage of using a DSS is speed and efficiency in decision-making, leading to better quality and more accurate decisions. Other advantages include more systematic ways of making decisions – particularly for structured types of problems that can be automated based on past decisions, or those that are data driven. Where part of the decision-making process is automated, human managers will have more time to focus on tasks that require real human intelligence.

Simpler DSS solve structured problems and make use of explicit knowledge to facilitate decision making. “DSS uses explicit knowledge, stored in digitalized environments to solve the structured part of the problem, meanwhile tacit knowledge is utilized by decision makers to solve the unstructured part of the decision problem” [11]. Explicit knowledge is codified knowledge, such as that found in documents, whereas tacit knowledge refers to non-codified knowledge, which is often personal, or experience based [12]. More sophisticated DSS which apply AI techniques (expert systems, artificial neural networks, intelligent agents, etc.) in their algorithms, incorporate both explicit and tacit knowledge, and have the capability to solve more complex and less structured problems [13].

The motivation to adopt knowledge management and DSS systems in the business world is the potential to achieve

superior performance. DSS enhanced by the concept of knowledge management is essential for the success of organizational strategic management. Alyoubi illustrates how data, information and knowledge can be combined, filtered, and understood to formulate strategic knowledge for growth, competitiveness, and objective strategies that can guide decisions and actions, which will lead to superior organizational performance [14].

B. General Shariah Related Decision Support System Initiatives

This section reviews Islamic DSS initiatives that are generally associated with the *Shariah* domain – such as *zakat*, *waqaf*, *faraid*, *Hajj*, and *Hadith* classification etc., but excluding those related to *fiqh* ruling and Islamic banking and finance, which will be discussed in the following two subsequent sections respectively.

A summary of general Islamic DSS initiatives follows:

- A cash *waqaf* distribution system using a Decision Tree (supervised machine learning) algorithm that can generate a list of beneficiaries. The proposed system is a web-based system that helps in the distribution of *waqaf* funds, which allows users to choose the type of *waqaf* that they would like to apply [15].
- An Arabic ontology-based inheritance calculation system that can reduce the time needed to process family data and reduce human efforts in the search for family relationships throughout the process of calculating Islamic Inheritance. The system has the capability to automatically identify heirs' information, such as how many there are, their genders, and their relationship(s) to the deceased [16].
- A mobile app decision support system that allows users to ask simple and advanced questions related to *Hajj* rituals. The proposed system makes use of a dynamic knowledge-based approach that can capture problems and find solutions, preprogrammed by an expert [17].
- An expert system for *zakat* application that can assist in the decision-making process, the identification of the relevant rules, and in doing the calculations. The specific objectives are to determine: if someone is required to pay *zakat*, the unique conditions applied, and the amount applicable for the *zakat* types to be paid [18].
- A system called *Muhadith* was designed to enable a computer to imitate human *Hadith* experts, in order to discriminate authentic *Ahadith* from unauthentic ones. *Muhadith* also includes reasoning capability, that can enable users of the system to look into the classification details. Users can enter the *Hadith* using a Web interface, and the inference engine will return the results, along with the explanation [19].
- An expert system on “Islamic Punishment”. The proposed system derives the recommended punishments from a knowledge base created from the *Quran* and *Hadith*. The three motives behind the

system includes: to distribute human expertise to this science, to prevent injustice in punishment by applying Islamic laws to this science, and to preserve the punishment laws in Islam from becoming lost or forgotten [20].

- A rule-based Expert Systems on Islamic medication that runs on a mobile platform so that “patients can get treatment anytime and anywhere”. The system focuses on both physical and inner illnesses, to derive the recommended cures, treatments, or therapies, from a knowledge base created exclusively from the *Quran* and *Hadith*. The proposed system would have the capability to recommend the most suitable treatment for an illness, with reference to the relevant verses cited in the *Quran* or *Hadith*. It will also recommend the related bodily actions, gestures or acts, to be performed by the patient, in order to treat his/her particular ailment [21].

The examples above covering DSS for *waqaf*, *faraid*, *Hajj*, *zakat*, *Hadith* classification, “Islamic punishment”, and “Islamic medication”, demonstrate the extent of how diverse DSS can be implemented to assist in various *Shariah* domains. As observed in these examples, the possibilities are seemingly endless, so long as there is enough creativity to leverage the latest technologies to innovate solutions that can (at least) guide in making *Shariah* related decisions – or potentially fully automate them. Mobile apps related to *waqaf*, *zakat*, and *faraid* calculations are already commonly used by Muslims globally.

C. General Fiqh Ruling Decision Support System Initiatives

This section reviews *fiqh* ruling DSS in general. *Fiqh* rulings or fatwa are a very serious subject in Islam, which can only be decided by qualified scholars. *Fiqh* rulings may change under different circumstances, and therefore Muslims require continuous guidance. The number of queries typically increase during peak seasons – such as *Hajj* and *Ramadan*. Various attempts have been made to explore how technology can help to address Muslims' *fiqh* ruling needs.

The following contains a summary of initiatives that are either related to, or have attempted to come up with, a computerized system for storing and smartly processing Islamic law, which users could access as a reference for deciding upon *fiqh* ruling related matters:

- The Saudi Arabian Ministry of Islamic Affairs launched a robot-assisted service that can provide fatwas for pilgrims that are performing *Hajj*. The service is available in Arabic, English, French, Hindi, Turkish, Hausa, Indonesian, Bengali, and Amhari [22].
- Dubai launched ‘Virtual Ifta’, an Artificial Intelligence (AI) fatwa service. The AI-powered Virtual Ifta is able to take live questions via internet chat, and replies accordingly. The service is available 24 by 7 [5].
- Munshi, Al Sabban, Farag, Rakha, AlSallab, and Alotaibi proposed an automated Islamic Fatwa System that provides rapid responses to fatwa related questions – especially during high seasons, such as *Hajj* and

Ramadan. The authors built “the largest dataset for Islamic Fatwa, spanning the widely used websites for Fatwa” [23].

- Khan, Siddiqui, Siddiqui, Saeed, and Touheed proposed an enhanced ontological model for an Islamic jurisprudence system in the form of Question and Answer (QA) ontology, which can simplify the extraction of unambiguous information about Islamic Jurisprudence (fatwa). The answers to users’ questions come with supporting *Quran* and *Hadith* references, so users can authenticate and understand the relevant Quranic verses or *Hadith* related to their question [24].
- Mabrouk proposed a model-based semantic network for smart representation and inference of Islamic law. The model comes with a smart deduction engine that provides compact codes of *fiqh* rules and deduces answers to queries relevant to these rules. The main functions comprise the storage and retrieval of *fiqh* rulings, selective browsing to obtain answers, comparative analysis for rulings of different situations, coding and deduction from *fiqh* rules, and fatwa assistance [25].
- Harb and Sharaf proposed an Intelligent Islamic Fatawa Retrieval System, as an agent-based system for information retrieval, based on ontology, that is applied to Fatawa. Each fatwa in Dar Al Eftaa El Mesria database “is annotated by its meaning, so the system locates fatwas based on its meaning and not just keywords”. A user looking for a fatwa can submit a new query, and the system will extract the already stored fatwas that semantically match the query [26].
- Amari, Atil, Bounour and Nouaouria proposed an intelligent tool for mufti assistance – an Expert System (ES) that can give fatwas for new situations by using fatwas from past situations. The ES is intended to assist a mufti in generating fatwas from second principle. The system could be also used to retrieve information by any other user that may have questions about the field [27].
- Elhalwany, Mohammed, Wassif, and Hefny proposed an intelligent Fatawa QA system that using Textual Case-based Reasoning (TCBR). The proposed system will respond to fatwa related questions by referring to a knowledge base library of past cases, in order to identify cases with similar situations to that of the posed question. The Fatawa QA System is for text indexing, retrieval and system learning, using a smart approach. The system is expected to be able to overcome the language and domain challenges [28].
- Abdelwahab, Daghbouche, and Shahnan came up with a generic algorithm for deciding *Fiqh* rulings with full transparency and complete algorithmic coverage of Islamic law, to enable and further leverage rule of law (as opposed to rule by law). The objective is to provide legal security, legal equality, and full legal accountability of *fiqh* rulings. The steps in the algorithm involve disentangling and reinstating classic

fiqh-methodology (*usul al-Fiqh*), as represented by the expressive power of subsets of First Order Logic [29].

- Mutawa and Al-Terkait proposed *Al Usouly*, an expert system in the origins of Islamic jurisprudence domain. A knowledge-based expert system that can automate the generation of fatwa by applying rules deduced from Quranic verses. The intended purposes of *Al-Usouly* are to serve *Shariah* scholars who are not specialists in *Usoul al-Fiqh*, for students or Muslims in general who are interested to understand the intended meaning of Quranic evidence, to understand a fatwa, and “as a tool or a decision support system for a mufti who generates fatwa from extrapolation which determines the hidden relationships and associations among incidents” [4].
- Nouaouria, Atil, Laskri, and Bouyaya proposed El-Bayane, a Case Based Reasoning (CBR) system that can help muftis generate fatwas for new situations by using fatwas of past situations. Being able to ‘reuse’ past fatwas, the system organizes its knowledge in cases which are collected in a memory, called a case-base. Subsequently, through inference processes, the system will be able to find and reuse the appropriate fatwa and its argumentation [3].

From the above summary, the Robot Fatwa Service operating during *Hajj* in Saudi Arabia and the Artificial Intelligence fatwa service in Dubai, are commercial initiatives for *fiqh* ruling or fatwa related AI decision support systems. The remaining summarized solutions are academic papers. Generally, the authors qualify that their proposed systems or tools are to be used as complementary to human *Shariah* experts. In addition, realizing that there are already databases of fatwas hosted by different parties, and that very often similar questions are asked, and therefore would have been answered in the past, some of these works took the initiative to consolidate fatwa databases and provide the capability to automatically retrieve similar past fatwas that match a user’s query. This may help to reduce the number of questions that human fatwa experts need to address, so that he/she can focus on fatwas related to circumstances that have not been dealt with previously.

Some of the works described in the above summary are more advanced than others, where the authors [4][24][25][29] propose systems that would have the capability to recommend solutions derived from Islamic sources of knowledge, such as the *Quran* and *Hadith*. For these works, the authors elaborate upon the technical details of how to derive an ontology (knowledge representation) that can represent Quranic verses and *Hadith* in computer language, and how logics could be programmed atop these ontologies to facilitate *Shariah* related decision making.

These works have demonstrated the possibility to represent Islamic knowledge in computer language. Subsequently, computer algorithms could be programmed to automate the retrieval of relevant past fatwa which match a query. More sophisticated algorithms could provide recommendations for fatwa or *fiqh* rulings for new circumstances.

D. Islamic Banking and Finance Decision Support System initiatives

This section focuses on *Shariah* related decision making DSS initiatives in Islamic banking and finance operations. The most commonly discussed Islamic DSS are digital investment advisors. Some literature also refers to such DSS as Robo-Advisors – a term that started as a disruption in wealth management, whereby investors could proceed with investments following “automated advice” provided by a digital investment platform. Wahed Invest is known as a pioneer in Robo-Advisors, providing *Shariah* compliant investment options [30].

Subsequently, there are a few initiatives to develop *Shariah* Robo-Advisors which refer to DSS which provide recommendations related to *Shariah* matters of Islamic banking and finance. These initiatives are summarized below:

- Obaidullah shared about the “Promise of IRSHAD: The Intelligent Robo *Shariah* Advisor”. IRSHAD is currently still under development and will be released in phases. Modules in the pipeline include “*Zakat* Advisor”, “Islamic Wills and Inheritance Advisor”, and “Investment Advisor for socially responsible Islamic organizations and financial institutions seeking to operationalize the SDGs in the light of the *Maqasid Al-Shariah*”. IRSHAD has been developed using various AI technologies such as “rule-based programming”, “AI-based text-analysis”, “NLP tools for translation and text-to-speech capabilities”, and will eventually feature analysis of real time data using “dynamic AI-based models” [31].
- Salim, Abojeib, and Abdul Hamid, in “2020/21 Islamic Fintech in Malaysia – Reality & Outlook” featured a case study on SKIL-RSA, an online platform that utilizes artificial intelligence technology and aims to be a decision-support system for Islamic financial institutions. SKIL-RSA has been referred to as a “Mufti Companion” or “Mujtahid Assistant” which allows users to ask intelligent questions, conduct comparative analyses, deduce from legal maxims, and consult an automated legal advisor about complex scenarios. SKIL-RSA has already been adopted by MBSB Bank Malaysia, and is hosted on the MBSB website, where it is accessible to MBSB employees and customers [5].
- Benlaharache and Nouaouria proposed an expert system that utilizes case-based reasoning to assist in generating fatwas related to new situations in Islamic banking and finance by using fatwas from similar past situations. The proposed system can save past fatwas in a case-based memory, for which the target users of the system are “expert muftis”, and “learner muftis”. The “Expert Muftis” are given authority to add, update or delete fatwa, whereas both expert and learner muftis can recover a fatwa by “interrogating the system” via a user interface screen where they can enter their queries in the provided fields, following specified criteria [32].

- Che Mohd Salleh and Mohd Nor proposed “a framework of Intelligent Information Retrieval (IIR) for *Shariah* sources using Support Vector Machine (SVM) for *Shariah* decision making in the Islamic Financial Industry (IFI)”. SVM is a machine learning technique used mostly for regression, information classification, and outlier detection. The proposed framework will provide “an efficient platform for the *Shariah* scholars, as well as industry players in gathering sufficient information for decision making processes in order to run the Islamic business and also to resolve *Shariah* issues that they encounter” [33].
- Tlemsani, Marir and Majdalawieh proposed a machine learning data mining technique that analyzes *Quran* and *Hadith* texts to validate whether all the activities and data flows in *Murabahah* financing contracts are compliant with the *Shariah* requirements. As part of the project, the proposed technique managed to identify some shortcomings with regards to the compliance level of existing Islamic banks’ *Murabahah* financing contracts with *Shariah* law [34].

From the above summary, IRSHAD and SKIL-RSA are commercial initiatives, whereas the others are academic papers. Similar to the DSS initiatives for the general *fiqh* rulings, there are attempts to facilitate the retrieval of similar *Shariah* rulings from past cases that are relevant to current situations. The most advanced initiative is SKIL-RSA – which has already been adopted by at least one Islamic financial institution in Malaysia.

An important observation is that these “*Shariah* Robo Advisors” have not reached the level to replace a human yet. At best, they can only function as a smart assistant to a human *Shariah* advisor, in order to speed up his/her work. Literature in this area is quite limited which may indicate that there is not much work has been done in this area yet, and therefore provides great opportunity for both commercial entities and academics to explore further.

III. METHODOLOGY

This paper reviews commercial and academic works related to Islamic decision support initiatives. Since this paper deals with contemporary digital innovation – which is a relatively new subject matter, in addition to published journals, this paper also refers to other sources such as technical reports, blog postings, online newspaper articles and YouTube videos. The need to refer to such contemporary digital content is aptly summarized by Ahmad and Buyong, who notes that in this digital era content analysis is also applied to analyzing data obtained from modern media such as websites, digital version of newspapers, blogs, Facebook, Instagram, and YouTube videos, etc. [35]. This study has utilized content analysis methods to analyze the data collected from the reviews of these journals and media.

IV. DISCUSSIONS OF THE POTENTIAL AND CHALLENGES FOR ISLAMIC DECISION SUPPORT SYSTEMS

The discussion in this section is organized into the following two subtopics:

- 1) *The potential and challenges of Islamic DSS in general*
- 2) *The potential and challenges of Islamic DSS for the Islamic Banking and Finance sector*

A. *The Potential and Challenges of Islamic Decision Support Systems in general*

This section discusses the potential and challenges of Islamic DSS in general. For the purpose of clarity, in the context of this paper, potential refers to the positive capacity for Islamic DSS – such as the possibilities, opportunities, available technologies, benefits, acceptance, and enthusiasm for it; whereas the challenges refer to the negative aspects – such as the limitations, practical issues, and objections or rejections, etc.

This review of Islamic DSS uncovers two main potentials. There exists available technological approaches that can assist with *Shariah* related decision making, and there are already multiple commercial and academic initiatives that work on such Islamic DSS. These innovations are not limited to those *Shariah* domains with more straightforward methodologies with calculation formula such as *Hadith* classification, *zakat* computation, and *faraid* determination, but also includes the most complicated ones – namely the *fiqh* ruling process.

As far as demand is concerned, the journey towards greater digitalization in line with 4th industrial revolution (4IR) requires everyone to embrace advance technologies. During the launch of Malaysia National 4IR Policy Science, Technology and Innovation (MOSTI), Minister Khairy Jamaluddin said “this is because advanced technology will be the transformation that covers a wide spectrum and affects all layers of society” [36]. This digitalization initiative has been accelerated by the movement restriction order to curb Covid-19 pandemic. “The rapid development and evolution of Industry 4.0 and the painful Covid-19, has created a new mindset focussed on the future, with a readiness to try new technologies” [1]. The new digital mindset has been amplified by IR 4.0 and Covid-19 is expected to accelerate digital lifestyles globally.

At the moment, most people are already comfortable using a wide variety of apps to seek recommendations and look for options that can help with simple decision making in everyday life. This goes to the extent of making decisions related to Islamic faith – such as determining halal status and finding halal places. Some people have already resorted to digital apps to help with more serious Islamic related decision making, such as calculating *zakat* amounts, determining *faraid* portions, and even looking for some fatwa related answers to their questions. With these growing Islamic digital lifestyle trends, demands towards Islamic DSS are expected to increase, and therefore will further encourage more commercial projects and academic research into Islamic lifestyle digital applications.

As is the case with many digital services, the main benefits of Islamic DSS are convenience, speed, and efficiency in decision making. Another benefit includes the standardization of rules in the decision-making process. This may assist in addressing an inherent challenge in Islamic decision-making processes inherent in multiple scholarly views on certain issues in certain matters, which may result in differing decisions.

There are not many challenges with respect to Islamic DSS for simple decision making – such as finding *Qiblah* direction, determining halal status, or locating halal places. Such applications are quite easy to develop as long as the data is available and accessible by the systems. However, it can be extremely challenging with more complex *Shariah* decision making – particularly with *fiqh* ruling matters. *Fiqh* rulings are an extremely complicated process that requires qualified *Shariah* experts, and which follow a strict methodology. The rulings must be deduced by a reasoning process that refers to *Shariah* sources of knowledge, such as the *Quran*, *Sunnah*, *Ijma'*, *Qiyas*, and a few other secondary sources – such as public interest, customary practices, objectives of *Shariah*, etc. In the computer world, *Shariah* knowledge is classified as tacit knowledge which requires human know-how, intuition, and experience to interpret before the knowledge can be converted into a computer readable format.

Fortunately, an AI technology branch known as Knowledge Representation, specifically ontology, makes it possible to represent a human expert's interpretation of tacit knowledge as explicit knowledge that can be codified and processed by computers. The interest in computer processing of knowledge from Islamic texts such as *Quran* and *Hadith* has motivated quite a number of researchers [37][38][39] to work on the ontology of Islamic knowledge. These works prove that it is possible for computers to process *Shariah* knowledge and provide some kind of recommendations.

The main challenge is to get a human *Shariah* expert who is capable of translating his/her knowledge into computer readable format – which requires said person to be well versed in both *Shariah* and information technology. Unfortunately, there are a very limited number of individuals with this combined skillset. In addition, while some objective tacit knowledge from the primary sources of *Shariah* – such as the *Quran* and *Hadith* can be codified, more subjective aspects such as public interest, customary practice, and the *Maqasid* (objectives of *Shariah*) are extremely challenging to codify into computer language. If these challenges can be overcome, it could create huge opportunities for commercial entities to penetrate this space, as there is currently a very limited supply of Islamic DSS on the market which can be utilized for *Shariah* related decision making – particularly for *fiqh* rulings.

B. *The Potentials and Challenges of Decision Support Systems for Islamic Banking and Finance*

The general potential and challenges discussed in the previous section are also applicable to Islamic DSS for Islamic banking and finance (IBF). This section shall discuss additional potential and challenges relevant to IBF perspectives.

Digital transformation of financial services has created huge demand for digital solutions in the Islamic financial

services industry. Digital solutions that are able to expedite *Shariah* decision making processes in Islamic financial institutions (IFIs) are very much needed to facilitate speedier resolutions by the *Shariah* committees of these IFIs. As AI technology is known to have the capability to enable innovations for complex decision making, there are high hopes that AI technology could be leveraged to assist in the *fiqh* ruling process.

A few high-profile stakeholders such as the General Council for Islamic Banks and Islamic Finance Institutions (CIBAFI), and the Islamic Development Bank Institute (IsDBI) have openly shared their optimism about the application of Artificial Intelligence technology to help bring the IBF industry to the next level. In Malaysia, there is a conscious effort to encourage more innovations with AI applications that could assist in *Shariah* decision making processes. This initiative is known as iConnect Fintech in Islamic Finance. One of the problem statements of iConnect Fintech in Islamic Finance is “how might we develop artificial intelligence-based and other innovative tech-based solutions that could help with some level of automation in the *Shariah* review process within Islamic financial solutions” [40]. iConnect is a Malaysian Collaborative Network Platform for Disruptive Innovation programs under the Ministry of Science, Technology, and Innovation (MOSTI) and the Academy of Sciences Malaysia (ASM).

AI enabled systems designed to assist with the *fiqh* ruling process are commonly identified as a *Shariah* Robo Advisors. Professor Dato’ Dr. Mohd Azmi Omar, President and CEO at INCEIF, mentioned in his keynote address at the Islamic Fintech Leaders Forum 2021 that “we would like to see globally more *Shariah* Robo Advisory focusing on *Shariah* compliance, *Shariah* decision making, *Shariah* ruling and so on...” [41].

Only limited literature can be found describing how Robo *Shariah* advisors could help in *Shariah* decision-making in the IBF industry. For example, Sa’ad, Alhabshi, Mohd Noor and Hasan are of the opinion that Robo *Shariah* advisors could help to save time and effort in the iterative *Shariah* review process and could facilitate timely and more robust *Shariah* opinions on Islamic products and services. Since these Robo-Advisors are allegedly speedier and more precise in supporting human judgement, this could help the design and delivery of Islamic financial services to be more timely, effective, and efficient [42]. In addition, Fazmi suggests that *Shariah* Robo Advisors can act as “Smart Muftis” to evaluate the sources of *Shariah* and provide recommendations based on past fatwas [30].

According to Sultan, *Shariah* Robo Advisors can help validate basic *Shariah* requirements in Islamic finance products and services, such as ensuring proper offers and acceptance. A few specific examples of how *Shariah* Robo Advisors can help validate basic *Shariah* requirements in Islamic finance products and services include: (i) in sale contracts, the subject matter and price are well defined and not uncertain; (ii) in partnership contracts (*Mudharabah* or *Musharakah*), the PSR (profit-sharing ratio) is valid and therefore any partner does not get eliminated at any time from receiving profits (if there are any). Capital contributions are also well defined to apportion if there

is any loss; and (iii) to validate if the product meets specific objectives (*Maqasid*) of *Shariah* [43].

Digitalization in the financial services industry, and the obvious optimism from stakeholders creates a huge potential for DSS for *Shariah* review processes in IBF. *Shariah* Robo Advisors with consolidated collections of *Shariah* rulings of IBF products and services by various authorities globally, could assist *Shariah* committee members to speedily identify relevant pronouncements to the specific case that he/she is working on. Some level of standardization is also possible with a Robo-Advisor’s recommendations for the relevant rulings.

However, based on the review in section six above, there are huge gaps in supply. This provides a significant opportunity for those who would like to venture into this space. In order to fill this gap, human capital with skill in *Shariah*, Islamic finance, and information technology are required. The ideal scenario would be to have people with all the three skills – however such individuals are rarities. This opens up opportunities for collaborations between those with relevant skills to develop and commercialize decision support systems as smart assistants for *Shariah* committees of Islamic financial institutions.

V. CONCLUSION

Global societies are at a stage where a lot of decisions are guided by recommendations from purpose-built computer systems. This includes simple personal decisions such as which routes to take, or which restaurants to go to, as well as more complicated decisions by commercial organizations, such as how much inventory to keep, or what products to sell.

These computer systems are known as a Decision Support Systems (DSS), which are designed to facilitate more precise decision-making by effectively using timely and appropriate data, information, and knowledge management leveraging on artificial intelligence techniques and other applications of information and communication technologies. A DSS can be employed in various knowledge domains – such as medical, dietary, pollution detection, drug reaction, banking and finance, and even for faith matters – such as those related to the religion of Islam.

Mobile Apps that provide halal information are already prevalent to help users to ascertain halal status before deciding to go to a restaurant or to consume a product. There are also various DSS initiatives for more complicated Islamic disciplines – such as *fiqh* rulings, *Hadith* classifications, and *zakat* and *faraid* computations. The most complicated Islamic DSS are those related to *fiqh* rulings. Based on various studies, *fiqh* ruling DSS could only function as a *Mujtahid* assistant, which means the DSS could provide recommendations; however the final decision must be made by a human *Mujtahid*. At best, a *fiqh* ruling or fatwa DSS could provide recommendations for new situations based on some similar past situations that are available in the knowledge repository of the DSS.

Concerning the objectives of this paper, the potential and challenges for DSS for Islamic Banking and Finance (IBF) –

and particularly those for *Shariah* decision-making aspects, the potential can be summarized as:

- Digital transformations of the financial services industry, including Islamic Banking and Finance, create huge demands for such DSS;
- Technological approaches leveraging sophisticated technology – in particular AI, are available to facilitate *Shariah* decision-making processes;
- Stakeholders in the IBF industry are optimistic about AI's capability to bring the industry to the next level;
- There are already a few commercial and academic initiatives working on DSS for *Shariah* decision-making;
- The benefits of DSS for IBF include convenience, speed, efficiency, and the ability to standardize the rules in the decision-making process.

While the potential is very promising, there are also challenges, which are summarized below:

- The *fiqh* ruling process in *Shariah* decision-making is a very complicated process that requires qualified and experienced *Shariah* scholars' expertise;
- *Shariah* is a tacit knowledge that requires human expertise to convert the knowledge into a computer-processable format;
- Convert *Shariah* knowledge into computer processable format requires an engineer who is well versed in both *Shariah* and technologies;
- There is a limited supply of DSS in the market that can assist in *Shariah* decision-making.

In summary, the new mindset created by the evolution of Industry 4.0 and the painful Covid-19 has paved the way for promising prospects for digital innovations, including Islamic DSS. With more research applying AI technologies in Islamic-related use cases, the future is bright for more sophisticated Islamic DSS – particularly in Islamic banking and finance. The main challenge remains to get *Shariah* expertise who can transform *Shariah* knowledge into a computable format, which can solve more complex *Shariah* issues, where there is currently a very limited number of individuals who are well versed in both *Shariah* and information technology. This challenge leads to a lack of available market solutions (a large gap in supply) that can be utilized for complex *Shariah*-related decision-making, especially for the *fiqh* ruling process.

Further research is required to develop commercially viable *Shariah* Robo Advisors for Islamic financial institutions (IFIs). A more coordinated collaboration among academics and IBF industry players with respective *Shariah* and technology backgrounds is crucial to unleash the potential of DSS usage and overcome the associated challenges.

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The role of Islamic Finance in unlocking the Potential of Micro-Small and Medium-sized enterprises and the role of Fintech

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Abstract - This paper aims to examine the role of Islamic finance and technology in unlocking the potential of MSMEs. In recent years Islamic finance has enjoyed rapid growth, but several challenges remain. Data show significant unmet demand for Shariah-compliant financial services, particularly among micro-small and medium-sized enterprises (MSMEs). To fill this financing gap, Shariah-compliant products offered to MSMEs are mostly leasing and asset resale arrangements, with very little application of profit and loss sharing contracts. This paper employs a qualitative research method to look at the role of Islamic finance in unlocking the potential of MSMEs. In addition, the emergence of Financial Technology (Fintech) has given the Islamic financial system an impetus to compete on an equal footing with the conventional system and prove itself. This study will examine the role of Islamic finance in recovery post-COVID-19 and how Fintech can be utilized to combat the economic repercussions that resulted from COVID-19. In addition to other existing articles, this paper suggests that combining the principles of Islamic finance, the advancements in technology, and Fintech represents an opportunity to significantly contribute to the enhancement of the entrepreneurial ecosystem in the Islamic world and the promotion of MSMEs segment development. This paper proposes using modern technology to unlock the potential of Islamic finance in contributing to entrepreneurship and MSME development. The findings of this study have significant implications for policymakers and governments, notably guidance on how to apply FinTech and effectively promote innovative Islamic financial services.

Keywords - Islamic finance; Entrepreneurship; MSMEs; Social finance, COVID-19

I. INTRODUCTION

Islamic Finance entails observing the principles of Islam and those of Islamic finance in carrying out business and managing resources. Islamic finance originated about 50 years ago. Countries with a Muslim majority embraced it. Investments in Islamic finance assets are estimated to exceed US\$3.69 trillion by 2024, and this investment amount will mark the industry's highest growth track ever recorded since 2008 [9]. The increasing popularity of Shariah financing among Muslim countries is mainly attributed to its ability to

satisfy its thirst for capital and its ability to serve the unmet demand in the market. Islamic financing provides an opportunity for investors to access financing and economic development. This is by providing Shariah-compliant financial services to products, especially to micro-small and medium-sized enterprises (MSMEs). Shariah law upon which Islamic financing is adopted doesn't allow financial institutions to charge interest to their clients [5]. Thus, there is a need to develop more innovative solutions to unlock the potential of Islamic finance, especially with MSMEs. There exists a huge potential for Islamic financing if the institutions advance their operations to entrepreneurship. Islamic banks can work together with financial technology (FinTech) firms to introduce innovative products. These products must be Shariah-compliant which increases the target customers for Islamic financing. Considering that Islamic finance is not exclusive to Muslims, introducing innovative solutions will help attract entrepreneurs. The conventional nature of Islamic financing is good for investors since it is not developed to make a profit but instead on returns from tangible income. This makes it more favorable to MSMEs, which thrive upon favorable conditions.

We find that to unlock Islamic finance, MSMEs must be aware of the microfinance modalities that can help their businesses. Investors who hail from nations such as Saudi Arabia, United Arab Emirates, and Malaysia have the advantage to understand Islamic banking compared to people from the United States or Canada. Thus, Islamic banking ought to be promoted for entrepreneurs to seek these services.

We argue that the Islamic financial systems are playing a crucial role in the recovery process. This is by providing sharia contracts to the MSMEs owners to allow them to recover from the economic impact of the pandemic [3]. Islamic finance should also create demand for their products by making providing an innovative solution. The paper investigated the role of technology in advancing the services provided by these banks, especially during this period when the world is recovering from COVID-19 [3].

This study adds to the sparse and divergent evidence on the role played by the Islamic financial system in helping MSMEs deal with the economic impact of COVID-19 across the globe. Besides, the study also explored the role of FinTech in

providing innovative solutions that align with Islamic banking requirements.

A. FinTech are important in Financial Growth and a strong enabler of innovation

Financial technology (FinTech) is the next financial and banking sector revolution. Artificial intelligence, robotics, blockchains, and other cutting-edge technologies have gradually found space in the banking world. The Islamic banking sector has been affected by these revolutions [10]. For instance, FinTech has introduced advanced capabilities for Islamic finance that enhance the ability to serve MSMEs. These capabilities can be adapted to unlock and attract small businesses by providing MSMEs services that align with shariah requirements.

Islamic financing must promote their services to their client customers for them to understand the advantages of working with Islamic microfinance. Providing innovative solutions to customers will only be effective if they are aware of the advantages of working with Islamic banking over another method of financing. MSMEs will likely consider financial institutions that are less friendly to their business because they need to gain more knowledge of Islamic finance. Thus, the first approach is to make the target MSMEs aware of the nature of services provided by Islamic banking. This will make it possible to convince them of the concept of profit sharing and fixed payment rates which are more advantageous compared to what is offered by investment banking. Also, shariah law limits the area in which Islamic finance can be invested, and it is appropriate to advise entrepreneurs to adhere to the law strictly. For instance, the funds cannot be invested in businesses that deal with drugs or gambling. Hence, the use of financial technology will provide new opportunities for investment that are aligned with shariah. For instance, capital markets and the use of digital payment systems are new investment approaches. These are investment opportunities for entrepreneurs that are allowed by shariah law.

To penetrate new regions, it is important to introduce banking packages that attract MSMEs since they are the backbone of most economies. This can be achieved by creating awareness and educating investment groups on why it is more advantageous to use Islamic banking for their businesses. Importantly, there is a need to stipulate that Islamic finance does not apply to Muslims alone, but investors are welcome regardless of their religion or beliefs. The incorporation of FinTech into Islamic banking will help investors and the institution realize impeccable results. This is by adopting technologies that allow both the investors and the banks to interact. Digital disruption is an important consideration while unlocking the potential of Islamic finance. The advancement in technology will enable MSMEs to manage funds digitally using real-time technologies. Based on the nature of Islamic finance, this new technology provides a great opportunity for collaboration between the institution and the MSMEs.

The COVID-19 pandemic has disrupted MSMEs. Islamic banking can play an active role during the recovery process. FinTech allows the Islamic financial system a level ground to provide financial services to MSMEs. Therefore, FinTech can be used to work with small businesses that are recovering from

the economic impact of COVID-19. The pandemic has created an opportunity for Islamic finance to work with MSMEs and create a sustainable financial system [6]. Currently, small and micro businesses have turned to innovation as they seek to attain a place in the world. The collaboration between Islamic finance and MSMEs will create an imperative opportunity where FinTech can be applied to ensure that innovative businesses are being supported. For the innovative solution to reach the target market, the investor requires financial support from institutions providing favourable terms. Compared to other finance providers, Islamic finance is more favourable to support innovative solutions to its strict adherence to shariah law that is not centred on making a profit. However, awareness is important, especially among investors who are not exposed to Islamic banking or are guided by misconceptions or stereotypes.

The purpose of this study is to contribute to the literature regarding the potential role of Islamic finance in the growth of the MSMEs sector. This paper also explores the Impact of Islamic finance on society and how the sector has managed the COVID-19 pandemic.

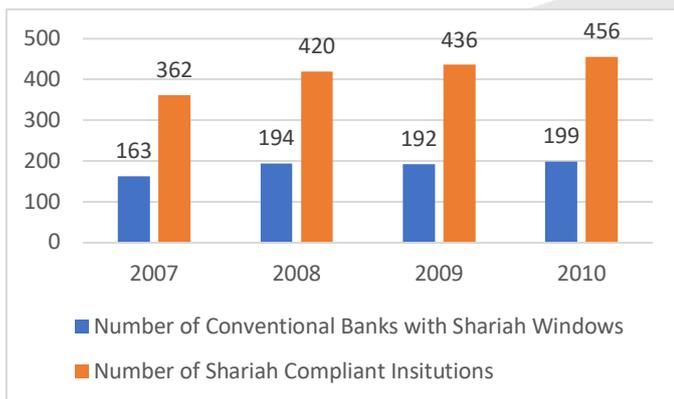
II. LITERATURE REVIEW

A. Islamic finance have evolved over the years

Over the years, the popularity of Islamic banking has been growing significantly, but statistics indicate that there remains a huge potential to be exploited. There is a huge demand for Islamic financing products, majorly among MSMEs. If the product sold by the business is shariah-compliant, it is more beneficial to seek Islamic finance. The profit-loss-sharing contract benefits small businesses due to its favorable terms. Public awareness remains a significant hindrance to Islamic financing because people who are not Muslims or from Islamic countries are not aware that their investments are shariah compliant [1]. The gap in knowledge makes the MSMEs seek expensive investments, whereas they can access funding that comes in favourable contracts. It is more beneficial to Islamic banks to use profit and loss-sharing contracts to categorize MSMEs based on their debt repayment capabilities. Unlocking Islamic finance will help correct information that allows guides on the various investment that meets the criteria for funding.

The acceleration of digitalization after the COVID-19 pandemic has enabled MSMEs to leverage online platforms offered by Islamic banks. According to a study by OECD, MSMEs engaged in online banking platforms following the pandemic have seen an increase in sales and revenues. Thanks to Islamic banks, MSMEs are having easier access to funding and a speedy recovery from the pandemic repercussions [15].

Figure 1: Institutions Registered for Shariah-Compliant Products



Source: ICD report

The figures above indicate the continuous growth of Islamic banking between 2007 and 2010. MSMEs realize various contracts that are more favorable to their businesses [1]. These contracts allow them to obtain funding that is cheaper compared to what they would have gotten from commercial banks. This has attracted new entrants into Islamic finance while other conventional banks are introducing shariah-compliant services. The growth in the number of institutions offering Islamic financing indicates the potential growth for banks and MSMEs seeking their services. Data also indicates that Islamic finance is gaining prominence in previously unexploited regions. The concentration of Islamic banks spreads to areas not predominantly occupied by Muslims. This geographical expansion indicates how investors accept favorable contracts, thus helping grow the assets of Islamic banks.

Table 1: Shariah Compliant Assets (\$m) by Country

Rank	Country	Shariah Compliant assets (\$m)	Rank	Country	Shariah Compliant assets (\$m)
1	Iran	314,897.40	14	Pakistan	6,203.10
2	Saudi Arabia	138,238.50	15	Syria	5,527.70
3	Malaysia	102,639.40	16	Jordan	5,042.40
4	United Arab	85,622.60	17	Brunei	3,314.70
5	Kuwait	69,088.80	18	Yemen	2,338.70
6	Bahrain	44,858.30	19	Thailand	1,360.80
7	Qatar	34,676.00	20	Algeria	1,015.10
8	Turkey	22,561.30	21	Mauritius	992.20
9	United Kingd	18,949.00	22	Switzerland	935.50
10	Bangladesh	9,365.50	23	Tunisia	770.10
11	Sudan	9,259.80	24	Singapore	725.00
12	Egypt	7,227.70	25	Palestine	612.50
13	Indonesia	7,222.30			

Source: ICD Report

The table above indicates the top 25 countries in Islamic banking. The recognition of Islamic banking as an alternative to conventional banking is continuously growing and indicates a huge potential for the industry in the future. To explore this niche, the business must constantly come up with innovative solutions that meet the MSMEs' needs [1]. This growth was observed after the 2008 economic recession. Similarly, there is

room for growth as MSMEs are recovering from the economic impact of COVID-19 that have affected and are looking for an innovative solution to their financial woes.

According to a recent report from Refinitiv, Islamic finance has proved resilient to current global economic troubles and is projected to grow at an average annual rate of 8 percent until 2025 [21].

It is worth noting the factors that have contributed to the growth of this industry. Firstly, since the principles of Islamic finance are based on the values of social justice and the improvement of humanity. Second, its growing use for financing MSMEs maintains a net positive social impact in the industry [11]. Furthermore, some countries like Saudi Arabia have Islamic finance on their top agenda. Saudi Arabia is one of the most knowledgeable countries in the world when it comes to Islamic finance and has an impressive record of Shariah-compliant infrastructure targeted toward MSMEs [11].

Additionally, Islamic finance is committed to promoting greater financial inclusion, particularly for large, underserved Muslim populations. As the Muslim population grows, the need for Islamic funding grows, which accounts for the rise of Islamic finance in Muslim countries [12]. Islamic finance has some characteristics that give it the potential to effectively support medium and small business financing, economic growth, and development [13]. Islamic finance has certain features which give it the potential to support MSMEs' financing and development effectively. For example, In the Gulf Co-operation Council (GCC) countries, SMEs represent more than 22% of the country's GDP. This tendency extends to employment, with SMEs being the only ones to participate, around 40% of jobs. [13]. Countries like Saudi have been continuously supporting MSMEs growth and development.

B. Role Of MSMEs In In The Development Of Islamic Financial Institutions

Over the years, investors have been using Islamic finance to acquire financing for their investments. Investors who hail from both Islamic nations and non-Islamic regions use these finances to develop and grow their businesses. These are largely MSMEs that have invested in companies that are compliant with shariah law which is the Islamic law used to regulate Islamic financing. Unlocking entrepreneurship is therefore possible if the business adopts this asset-based approach. The majority of the financial providers focus on interest which affects small businesses which are trying to compete with big firms. According to research, it is more sustainable to work with Islamic banking because they are controlled by shariah law which is asset-based rather than profit. The majority of MSMEs have been adversely affected by the COVID-19 pandemic and are unable to meet requirements set by financial institutions. Thus, financial instruction offering favorable terms for accessing finance is much welcome. It is important to educate entrepreneurs on various microfinance modalities provided by Islamic financing. Based on the nature of the investment, the MSMEs will be able to adopt a contract that is best suited for their business. For

instance, a profit and loss sharing contract in Islamic banking allows the investor and the bank to split the profit or loss made by the investment based on a predetermined ratio. This can be based either on *mudaraba* or *musharaka* contractual terms that the bank and investors agree to share the profit or loss of the venture. If the party adopts *mudaraba* contractual terms, Islamic finance will act as the financier of the investment while the investor is the management and executor. On the other hand, *musharaka* both parties agree on the revenue-sharing formula before the investment is initiated. Islamic law contains various contracts that allow small and medium enterprises to access funds packaged for their investment. For businesses that require funds for a specific project, it is possible to acquire an interest-free loan from the bank to meet its financing requirements. However, the biggest challenge remains access to information on the available microfinance modalities provided by Islamic banks. To unlock Islamic finance, MSMEs must be aware of the microfinance modalities that can help their businesses. Investors who hail from nations such as Saudi Arabia, United Arab Emirates, and Malaysia have the advantage to understand Islamic banking compared to people from the United States or Canada. Thus, Islamic banking ought to be promoted for entrepreneurs to seek these services

C. Impact of Islamic finance on society

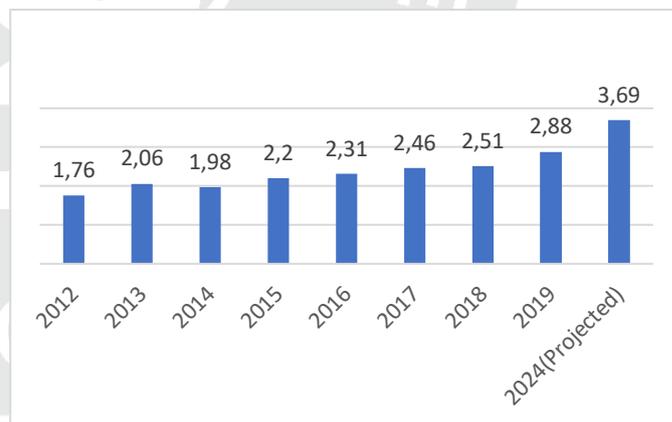
Research indicates that MSMEs play a crucial role in society, especially in poverty eradication and the promotion of the domestic economy. Countries that promote MSMEs tend to achieve economic growth that enables them to achieve Sustainable Development Goals (SDGs) [5]. This is possible when small and medium businesses are able to access financing. Funding from Islamic finance has increased the ability of these MSMEs to increase their sales, meet customer demands and employ workers [16]. Access to funding also enables MSMEs to become more profitable and increase their competitive advantage. This is made possible by the favorable terms associated with Islamic banking that allows businesses to become more productive. However, Islamic finance must create demand for their products by making providing an innovative solution. Research indicates that more countries are developing interests in Islamic finance. Still, it is the responsibility of the stakeholders to educate the MSMEs on various sharia contracts that are good for their business [1]. Awareness is needed if small businesses adopt a new source of financing. Although Islamic financing provides better arrangements, the MSMEs must be aware of these contractual terms for them to place their investment. Unlocking Islamic financing entails empowering MSMEs to grow and adopt new technologies. The previous program that has worked can be used for benchmarking for the investors.

D. Islamic FinTech in managing impact of COVID-19 on MSMEs

COVID-19 has disrupted most businesses, with MSMEs being the most affected. The Islamic financial systems are playing a crucial role in the recovery process. This is by providing sharia contracts to the MSMEs owners to allow them

to recover from the economic impact of the pandemic [3]. The 2008 economic recession provided the Islamic financial system with a blueprint for working with small and medium businesses during the recovery process. This can be reciprocated to help MSMEs that are recovering from the economic aftershocks of the pandemic. Islamic finance entails corporate social responsibility that allows the institution to support businesses in society [1]. According to a study, the COVID-19 pandemic created an opportunity for people to be creative and create innovative solutions. There are multiple startups that are rising and require support for them to flourish. Islamic finance promotes asset financing, which is significant in the achievement of SDGs. The construct of Islamic financing is designed to promote risk sharing and avoid speculations. While other conventional banking systems are linked to gambling and other ambiguous investments that expose investors to multiple risks, Islamic finance does not support business activities that are prohibited. Therefore, Islamic finance allows easier and safer access to funding. When it comes to technology, Islamic banking innovative solutions such as the use of digital currency, MSMEs can acquire finance without taking excessive risks.

Figure 2: Global Islamic Finance Assets Growth (US\$ Trillions)



Source: ICD Report

The figure above shows global Islamic finance assets from 2012 to 2020. Over the year, Islamic financing has been gaining prominence across the globe. This can be attributed to the fact that it is not limited to Muslims only but also non-Muslims, thus gaining attraction due to favorable contractual terms. Also, the sharia laws allow the parties in the contract to negotiate equal rights without one party feeling exploited. Unlike conventional banking, Islamic finance allows equitable sharing of collected revenue.

III. METHODOLOGY

The study employs a qualitative research approach to understand the role of Islamic Finance and entrepreneurship in unlocking the potential of MSMEs. In the analysis process, qualitative content analysis is applied, which is then supplemented by exploratory research to assess and evaluate the potential of Islamic finance among the MSMEs in dealing

with the impact of COVID-19. This study also uses secondary data. The first source is the annual reports of selected Islamic financial institutions on their respective websites. To minimize selection bias, several electronic databases were used to gather data. Only full-text studies from databases providing full access to several full-text journals were considered. Keywords included were Islamic Financial System, FinTech, Islamic Finance, MSMEs, the impact of Covid-19 on small and medium enterprises, entrepreneurship, social finance, and innovative solution in Islamic banking. Once relevant articles were identified, the authors analysed their content to obtain relevant information on unlocking the potential of Islamic finance and entrepreneurship using innovative solutions [1]. To ensure the relevance of the current research,

the selected articles were objectively and quantitatively analyzed through content analysis to obtain data and information to proceed with the research paper. This approach analyzes secondary data to understand the relevance of Islamic finance in supporting MSMEs, especially post-COVID-19.

IV. RESULTS

According to search engine findings, the impact of the COVID-19 pandemic has greatly evolved from health crises to economic crises, with MSMEs being the most affected. Most entrepreneurs are already struggling to keep their businesses afloat due to lockdowns and loss of employment imposed once during the country lockdown [3]. Once the lockdown was lifted, economic activities failed to resume immediately, and some businesses could not sustain themselves due to a lack of funds. COVID-19 also created new opportunities for innovators to provide solutions by providing products and services [17]. The pandemic rendered millions of people jobless, and people had to develop creative ways to make a living, leading to various businesses. Firms trying to recover from the impact of the pandemic are dealing with various challenges, such as a need for more funds to sustain themselves. Also, there needed to be more cash flow since most target customers lost their jobs during the pandemic. Many working hours were lost during the lockdown affecting the cash flow among the working populates. With the cash flow, small and medium businesses can sustain and survive the impact of COVID-19 on the economy. This creates extreme uncertainty for the MSMEs who depend on the availability of cash flow when the working hours are utilized optimally.

For MSMEs to survive the impact of COVID-19, there is a need to shift from the conventional financial system that does not provide favorable contracts to already struggling establishments. The existing financial systems are more focused on making profits and less interested in supporting the MSMEs [5]. This makes Islamic financing the best-suited approach to unlock MSMEs' potential and access funds easily. Islamic finance offers non-exploitive services that allow the business to develop [5]. Through various contracts, it is possible for small businesses to access finance and benefit from favorable contracts compared to the ones offered by conventional financial institutions.

Islamic finance provides various service that attracts MSMEs. These financial services are more favorable through Islamic financing compared to conventional banks, which are exploitative to their customers. The Islamic banks provide services that are not interest-oriented, thus making them ideal for MSMEs dealing with the impact of COVID-19. However, the investor needs to acquire information on the nature of investment supported by these banks. In as much as Islamic financing promotes small businesses, they refrain from an investment that is against sharia law. Activities such as gambling and speculation are prohibited, and investors will not receive funding for such businesses. Additionally, Islamic financial institutions are a good platform for increasing access to financial inclusion, including access to finance for MSMEs, thereby supporting growth and economic development [19].

Furthermore, a lack of awareness and knowledge about Islamic banking products also affects MSMEs [19]. Therefore, Information is important in promoting Islamic financing, especially in non-Muslim nations. Recently, several countries have embraced Islamic financing, including nations where Islam is not the populous religion [2]. Based on content analysis, people from such countries need to be more conversant with the strict requirement of shariah law. These are investors who are attracted to the favorable contractual terms of Islamic banking, but they need to be made aware of the segments that they must meet to acquire funding [2]. With the outbreak of COVID-19, the majority of MSMEs have been affected and are seeking investment from an organization that is less exploitative. However, these businesses may be locked out of acquiring funding from Islamic banking because their companies do not conform to the law. In this paper, we presented several Islamic financial products like mudarabah and musharakah that MSMEs and entrepreneurs can adopt to meet their financial needs [18] (See table below). Besides, The Islamic social finance tools stipulate various obligations that must be met before providing funds to businesses. The information role of Islamic banks must be addressed, especially for nations that are not predominantly Islamic. Content analysis indicated that countries globally are exploring Islamic banking [2]. For instance, western countries have greatly embraced this form of financing that offers better terms than conventional banks that are exploitative. However, the majority of the resident of these countries are not Muslims, thus unaware of shariah laws that regulate Islamic banking. Information is, therefore, necessary for investors on the nature of services and products so that they can seek support from the government.

Table 2: Contracts and their definitions

Contracts	Definition
Profit and loss sharing	is a contract between two parties; one provides the capital and the other provides the labor to form a partnership to share the profits by certain agreed proportions.
Joint venture (Musharaka)	is a financial contract between two or many parties to establish a commercial enterprise based on

	capital and labor. The profit and loss are shared at an agreed proportion according to the amount of contribution.
Cost plus (Murabaha)	refers to a sale of a good or property with an agreed profit against a deferred or a lump sum payment. There are two contracts in Murabahah: the first contract is between the client and the bank, whereas the second contract is between the bank and supplier. The client (purchaser) orders a certain commodity through the bank, the bank then buys the commodity from the supplier and sells it to the client with specified profit whereby the client can make a lump sum or a deferred payment to the bank.

Source: Characteristics of GCC Islamic Banks Investment in Malaysia, Ali Abusalah Elmabrok Mohammed

V. DISCUSSIONS OF THE POTENTIAL AND CHALLENGES FOR ISLAMIC DECISION SUPPORT SYSTEMS

The research focuses on unlocking the potential of Islamic finance among MSMEs in dealing with the impact of COVID-19. Through the application of Islamic financial systems and strictly adhering to the shariah laws on which they are built, entrepreneurs can access funding for their investments and survive the economic repercussion of the COVID-19 pandemic. The use of digital currency and smart contracts provide a lucrative opportunity for Islamic finance to penetrate the larger market. Using FinTech, it is possible to solve economic challenges facing the majority of MSMEs. Analyzing activities based on whether they adhere to shariah guidelines and then proceeding to seek financial services can help many struggling MSMEs. Enterprises have huge potential, but they need to receive favorable financial services from conventional bank that favors their economic situation. FinTech can be used to collaborate with firms dealing in Blockchain financial technology, which has become more prominent post-COVID-19. Blockchain aligns with shariah requirements because it reduces the risks of cheating or hacking and thus does not affect financial integrity. FinTech in Blockchain is viable in helping Islamic Finance provide an innovative solution to its clients. The financial bank can access information contained in Blockchain digital ledger, thus ensuring accuracy. This also allows the bank to determine if a digital currency is making a profit or loss.

The world is almost concurring COVID-19 with new variants promptly managed without the need to lock down the economy. With the ongoing vaccination, the focus is now on economic recovery. Multiple opportunities have arisen, especially in FinTech dealing with digital assets and Non-fungible Tokens (NFT). As a result of the technological innovations described in Rabbani's study, fintech has been able to disrupt our everyday lives with innovation in finance. We

are now receiving financial services through artificial intelligence systems, and It is possible to apply shariah principles in financial transactions [5].

Cryptocurrency is a categorized currency; thus, it is halal for Islamic Finance to fund. Considering that currency are properties that do not attract interest, MSMEs dealing with digital currencies can acquire funding with much ease. The aspect of Islamic financing is to create value while conducting business in an ethical manner that does not expose the institution or the clientele to risks.

All in all, the use of FinTech in Islamic banking is gaining attention globally, and its potential in financial services is immeasurable. Thus, the adoption of FinTech by MSMEs requires the support of Islamic finance sector to help overcome the lack of funding.

The recovery process against COVID-19 entails both short- and long-term financial strategies. Short-term strategies entail MSMEs seeking financial support not exceeding one year. This is mostly emergency financial needs that provide financial assistance to investments. Islamic finance is used to fund MSMEs for projects that meet Zakat, sadaqah, or Qaradh-Al-Hasan stipulations. It is important that client is introduced to various financial services provided by Islamic banking based on their needs. In regions where Islamic banking is not popular, MSMEs owners require more information on how they operate, and their advantage compared to conventional banking. Bridging the knowledge gap is important in determining whether the investor needs short-term emergency support, or they need long-term support. Social instruments under Islamic finance, such as Qardh-Al-Hasan, Zakat, Social Sukuk, and Waqf are viable options to be used by the Islamic banks during and after COVID to help the affected individuals, MSMEs, and corporations by providing direct cash transfers and giving access to the health care and education facilities [7]. Islamic finance is based on the principle of social justice and equitable distribution of income and these two characteristics make it as the suitable path under crisis [8]. For instance, Zakat financial support is rendered to a certain group of customers who are financially deprived, according to sharia. This can benefit poor people in a society whose enterprises have been affected by COVID-19.

To penetrate the financial markets, Islamic Finance must engage MSMEs that are recovering from the impact of the COVID-19 pandemic. As the business recover from the impact of COVID-19, it will start focusing on its growth and sustainability. Thus, MSMEs can opt for medium-term or long-term recovery loans, which have a longer duration than short-term recoveries. Through FinTech, it is possible to work with organizations to ensure they remain active and not get overwhelmed as they try to recover. A business that achieves long-run resilience is able to sustain itself and advance in other areas. This creates an opportunity for Islamic finance and FinTech to work on innovative financial solutions. The disruption caused by coronavirus is likely to be felt for a long period, especially with the constant emergence of new variants. Therefore, MSMEs require partnerships with favorable financial services that will be in existence in the long run. Also, incorporating digital currencies will help businesses and

financiers evolve with technology. With Fintech, the banking world has changed, and Fintech, artificial intelligence, and blockchain will re-engineer Islamic banking to boost and enhance MSMEs access to funds and growth [20].

VI. CONCLUSION

Based on the content analysis that has been carried out, the result of the study shows that utilizing Islamic finance to promote entrepreneurship and the MSMEs sector when dealing with the impact of COVID-19 offer a conducive growing environment. Working together with FinTech, Islamic finance institutions will be able to introduce innovative products that meet customer needs. FinTech has introduced advanced capabilities that allow the partnership between MSMEs and Islamic finance. This advance aligns with shariah requirements, thus allowing the use of digital currency in transactions. The use of digital payment, like financial transactions, is easily controlled and does not entail gambling or speculations. Countries such as Malaysia, United Arab Emirates, and Saudi Arabia have advanced levels of Islamic banking. However, there is underlying potential across the globe, but Islamic finance must prepare detailed packages that target MSMEs. Besides educating the groups, it is important to include FinTech in Islamic banking. Digital disruption cannot be avoided, and it is viable in managing funds using real-time technologies.

The COVID-19 pandemic disrupted the economy, with the most affected MSMEs. The economy is recovering with the ongoing vaccination and relaxation of the containment measures. FinTech can be used by Islamic finance to offer innovative solutions to MSMEs that have been significantly affected. This can be through collaboration between the two entities to create a sustainable financial system. Small and micro-businesses are trying to find their place in the economy, competing with big corporations with access to financing. Thus, corporation between these two entities provides an imperative opportunity where FinTech can be applied to provide financial support. Islamic finance is more favorable to MSMEs than conventional banks, whose main aim is to profit. According to research, MSMEs that have invested in a business adherent to sharia law have been using Islamic finance to develop and grow their business. This has made it possible to unlock great investment opportunities for MSMEs. Islamic finance does not focus on interest but is asset-based, unlike other financial providers. Also, they provide various contractual terms that are more favorable compared to conventional financial organizations.

Many innovative solutions remain unexplored that could unlock the potential of Islamic financing and MSMEs. Many sharia-compliant businesses offer a conducive growing environment for entrepreneurs and MSMEs. The COVID-19 pandemic caused an economic recession affecting many organizations, especially small and medium enterprises. The lockdown and strict restrictions by the department of health affected the business's cash flow. Therefore, the majority of MSMEs are struggling, and they need a favorable financial plan for them to be sustainable. Islamic finance can be used to provide much-needed funding during the recovery process. There is a huge demand for Islamic financing products, especially among MSMEs. For investors in shariah-compliant services, it is more beneficial to seek Islamic finance over the conventional funding provided by other financial service providers. The role played by MSMEs in society can be enhanced through financial support from organizations that provide investment funding. To eradicate poverty and achieve SDGs, developed and developing nations must work with MSMEs. Favorable investment terms must be supported by economic and technological solutions. The experience and confidence in Islamic finance will play a crucial role in helping MSMEs reach their full potential and overcome the repercussion of the pandemic. The rise of innovative technology, such as Islamic Fintech, provides an equal ground for Islamic finance to compete and thrive better.

Our study had some limitations. Firstly, limited Access to Information since the topic is an emerging issue. Second, carrying out this research with much larger data on countries using Islamic finance to support MSMEs would provide the researcher with sufficient data and insights needed to draw more robust conclusions. In the future, looking at information regarding the percentage of SMEs compared to large companies in countries where Islamic finance is most developed would lead to a more in-depth analysis.

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Islamic Bank Profitability: Financing Micro and Small Segment, Promotion, Financing Quality, Labor Aspects (Indonesia Cases)

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Abstract - This study aims to analyze the effect of financing distribution (FDR), lending to micro and small business segments (MSF), promotion cost ratio (PCR), loan quality (NPF), and employee productivity ratio (LCR) on the profitability ratio of Islamic banks (Return on Assets-ROA). The method used in this study is a quantitative method using multiple regression models. The data used is secondary data from Islamic banks published during the 2012-2018 period. Furthermore, the number of samples from this study amounted to 42 samples of Islamic commercial banks. The results of this study are that the distribution of financing (FDR) has a positive and significant effect on the performance of Islamic banks (ROA), and the distribution of financing to the micro and small business segment has a positive and significant effect on the performance of Islamic banks (ROA). In addition, promotional activities and employee productivity also have a positive and significant impact on the performance of Islamic banks (ROA). At the same time, the quality of financing has a negative and significant influence on the performance of Islamic banks (ROA). The research implications are to provide information related to Islamic bank performance research regarding promotion effectiveness and employee productivity.

Keywords - Islamic Bank, Financing, Micro and Small Financing Segment, Promotion, Financing Quality, Productivity.

JEL classification: G02, G14, G21

I. INTRODUCTION

Islamic banking services in Indonesia have existed since 1992 when Bank Muamalat was the first Indonesian Islamic bank was established. Therefore, Islamic banks in Indonesia have served the Indonesian people for 29 years and should improve the Indonesian people's welfare. This follows the objectives of Islamic banks, namely, creating the social well-being of humanity [1], [2]. However, the current phenomenon is that the performance of Islamic banks still has challenges, as indicated by the market share for 29 years that has not been able to reach 10%. Figure 1. below is the achievement of Islamic bank market shares in the last four years:

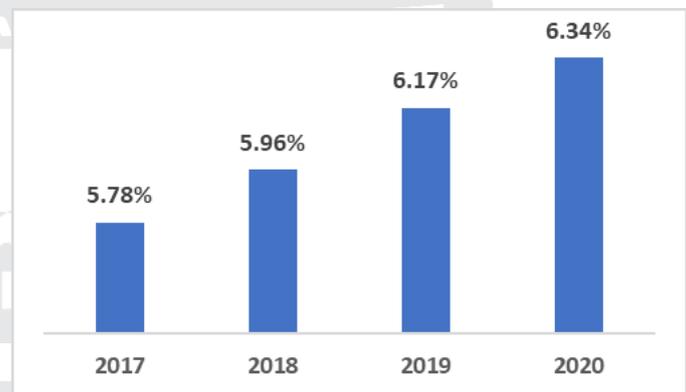


Figure 1. Development of Islamic Bank Market Share for the 2017-2020 Period

Source: [3]

Based on Figure 1 above, the growth of the Islamic banking market share is 6.34%. Therefore, if Islamic banks have existed for 29 years, the market share growth per year grows by 0.22%. This condition is contrary to the market potential of Indonesia as the country with the most significant number of Muslims in the world [4]. In addition, the government has a plan to make Indonesia the center of the Islamic economy and finance in the world. Therefore, the government should have a program to increase the market share of Islamic banks to increase the number of people using the products and services of Islamic banks [5].

Furthermore, compared to other countries, the performance of Islamic banks in Indonesia still needs to be improved. This phenomenon is shown in Figure 2 below:

Figure 2. Return on Assets (ROA) of Indonesian Islamic Banks and Islamic Banks in Middle Eastern Countries

Source: [6]

Referring to Figure 2 above, Islamic banks in Indonesia have the lowest Return on Assets (ROA) level compared to 10 other countries in the Middle East. Thus, the performance and profitability of Islamic banks in Indonesia still need to be improved. Based on the phenomenon of low ROA in the Indonesian Islamic banking industry, Islamic banks' contribution to improving people's welfare in Indonesia is still not optimal [7].

Furthermore, to improve the performance of Islamic banks, it is necessary to optimize product sales from Islamic banks. The main product of Islamic banks that directly increases revenue is the distribution of financing. Financing in Islamic banks is the distribution of loans with Shariah contracts consisting of buying and selling contracts (*murabahah*, *istishna*, *salam*) and cooperation contracts (*mudharabah* and *musharakah*), and rental contracts (*ijarah*) [8].

If the distribution of financing increases, it has the potential to increase income from Islamic banks. The type of income from Islamic bank financing depends on the financing contracts distributed by Islamic banks. Income from Islamic banks can be margin, *ujroh* (fee), or profit-sharing ratio [9]. In addition to optimizing the distribution of financing to improve performance, Islamic banks also need to improve performance by focusing on business segments, namely the distribution of financing to the micro and small business sectors. Dusuki (2007) and Arafah & Nugroho (2016) [10], [11] state that Islamic banks as banks that carry out their business activities based on sharia principles, must concern micro and small entrepreneurs. The majority of economic actors in Indonesia are micro and small entrepreneurs. So, focusing on channeling financing to the micro and small business sectors will impact helping to increase their business sales turnover [12]. The increase in business turnover from micro and small business actors will have implications for increasing their welfare [13], [14].

In addition to the low market share of Islamic banks, the Islamic financial literacy of the Indonesian people was also low in 2019. Islamic financial literacy only reached 11.10%. Furthermore, 11.10% Islamic financial literacy achievement shows that in the Indonesian population who understood

Islamic financial products in 2019, only 11.1% understood Islamic financial products. Meanwhile, the financial literacy of the Indonesian people has reached 38%, so there is a significant gap between Islamic financial literacy and financial literacy. Therefore, the low Islamic financial literacy has implications for the low number of people using financial products and services from Islamic banks [15], [16]. Therefore, to increase users of Islamic financial products and services, promotions are needed in the form of socialization and other forms of dissemination to provide information and education to the public regarding the products and services of Islamic banks [17].

Islamic bank's business performance determines its sustainability. The better the Islamic bank's business in distributing its funding with good qualities, the more the potential for the sustainability of the Islamic bank [6], [18], [18]–[20]. The sustainability of Islamic banks is highly dependent on the trust of Islamic bank stakeholders. The quality of the funding has to demonstrate the trust of stakeholders. If the distribution of Islamic bank financing is of quality, then the risks faced by the Islamic bank will be more measurable [21], [22]. Conversely, suppose the quality of Islamic bank financing distribution is low. In that case, the Islamic bank will be exposed to enormous risks in the future, so there is the potential to cause losses for the Islamic bank.

On the other hand, employee productivity must be increased as well. The higher the productivity of the workers, the higher the income of the Islamic bank. Employee creativity and innovation in making products and services that suit the needs and desires of the community. Thus, more and more people will use the products and services of Islamic banks, which will have implications for the increase in income of these Islamic banks [23]. Thus, based on the phenomena mentioned above, the problem statements in this study include:

- Does the distribution of financing affect (Financing to Deposit Ratio-FDR) the Return on Assets (ROA)?;
- Does the portion of micro and small business sector financing (Micro and Small Segment Financing-MSF) affect ROA?;
- Does the promotion (Promotion Cost Ratio-PCR) of Islamic banks affect ROA?;
- Does the quality of Islamic bank financing (Non-Performing Financing-NPF) affect ROA?;
- Does the productivity of Islamic bank employees (Labor Cost Ratio-LCR) affect ROA?.

Based on the problem statements, this study aims to analyze the factors that can affect the improvement of the performance of Islamic banks. The urgency of this research is to help the government identify the factors that can improve the government's performance to make Indonesia a center of world Islamic finance and economy. In addition, Islamic banks, as the locomotive of a country's economy, should have quality human resources. The productivity of human resources indicates this through innovation and creativity in developing products and services that are of interest to the public. Furthermore, the novelty of this study is that the analysis of profitability in terms

of business, productivity, promotion, and financing quality aspects have not been carried out by previous researchers. Therefore, the implications of this research will provide new information related to research topics in the field of performance of Islamic banks and give insight to the government to improve the performance of Islamic banks through the determinants factors included in this research.

II. LITERATURE REVIEW

Furthermore, the theoretical basis used in this study is the Tawhid String Relationship (TSR) which is a reference to the importance of performance for Islamic banks based on the Qur'an as a source of Islamic law. The explanation of the Qur'an related to the vital role of performance and profit is as follows:

- Performance is closely related to one's deeds as stated in the Qur'an Surah At Tawbah verse 105: And say, "Do [as you will], for Allah will see your deeds, and [so will] His Messenger and the believers. And you will be returned to the Knower of the unseen and the witnessed, and He will inform you of what you used to do."
- Performance in the Qur'an is also related to a person's good measure based on his deeds and deeds listed in the Qur'an Surah Al-Mulk verse 2: "[He] who created death and life to test you [as to] which of you is best in deed - and He is the Exalted in Might, the Forgiving."
- Furthermore, performance in Islam, as well as good practice, will have an impact on the safety of life in the world and as a provision for life in the hereafter, which is stated in the Qur'an Surah An-Nahl verse 97: "Whoever does righteousness, whether male or female, while he is a believer - We will surely cause him to live a good life, and We will surely give them their reward [in the Hereafter] according to the best of what they used to do."

In addition, the theory used in this study refers to agency theory, where agents will try to maintain the performance of the companies they manage so that they can survive in the company [24]. Furthermore, in maintaining the company's performance, there are key financial performance indicators, one of which is ROA [25]. ROA is the result or profit from the company's business activities. Therefore, the higher the ROA, it can be reflected that the management in the company has adequate ability to manage the company.

On the other hand, company profits come from the company's core business, [26]. Therefore, the variable used in this study is the distribution of financing because it is related to the performance of Islamic banks [27]. However, according to Dusuki [28], micro and small segment financing in Islamic banks must be the main concern and product. This is because Islamic banks must have social values that aim to benefit the whole community, especially low-income people [11]. However, banks are also financial institutions that are very sensitive to public trust [29]. Therefore, Islamic banks must also be able to maintain the quality of the financing that has been distributed so that the public has confidence that the funds placed in the bank are safe [30]. The better the quality of

the bank, the better the performance of the bank because it can mitigate risk optimally [31].

Furthermore, apart from the core business, banks must also be able to achieve the targets set through optimal promotional activities so that public literacy of the products and services owned by the bank can increase so that they decide to use the bank's products and services [16], [32]. Therefore, promotion costs are one of the variables used to determine the ROA of Islamic banks. Furthermore, human resources have a significant role in driving bank business activities. The more prosperous the employees are, the greater the work ethic will be [33]. Therefore, the higher the work ethic, the higher the innovation and creativity of the employee, which will increase the bank's productivity. Thus, increasing productivity will have an impact on optimal performance of the institution [34].

Therefore, discussions related to the productivity and profitability of Islamic banks are crucial for further analysis based on several aspects such as financing, micro, and small segment, promotion cost, financing quality, and labor cost.

III. METHODOLOGY

The research method used is a quantitative method using multiple regression analysis with a data panel. The data used is secondary data from the annual reports and published (audited) financial reports. The number of Islamic commercial banks used in this study from 2012 to 2018 was 12 banks. However, what can be used as samples are 6 Islamic commercial banks that have complete data according to the needs of this study. The details of the mechanism and the criteria for taking the number of samples are shown in table 1 as follows:

Table 1 Sample Selection Criteria

No	Criteria	Amount
1	Number of Islamic Commercial Banks in Indonesia operating during 2012 - 2018	13
2	Islamic Commercial Banks that do not have the complete data needed for research during 2012 -2018	(6)
The number of Islamic Commercial Banks used as samples in the study		7
Number of data samples observed 2012-2018 (7x6 years)		42

Source: Authors' elaboration

Furthermore, the development of hypotheses and operational variables from this study are as follows:

A. Effect of FDR on ROA

The main business of Islamic banks is to collect funds from the public and channel them back to the community in loans or financing. The distribution of financing to Islamic banks must be based on the real sector and underlying assets to impact national economic growth. In addition, the internal

distribution of Islamic bank financing will have implications for an increase in income so that the return on assets (ROA) ratio of the Islamic bank will also increase. The formula for FDR is as follows:

$$MSF = \frac{\text{Total Micro and Small Financing}}{\text{Total Financing}}$$

B. Effect of PCR on ROA

Promotion is an effort to introduce products and services to the public to increase public information about the promoted products and services. Increased information on products and information will motivate people to use or decide to buy these products [35]. Thus, the more influential the promotion of the products and services of Islamic banks will have implications for increasing the income of Islamic banks so that the ROA of Islamic banks will also increase. The variables of the promotion cost ratio (PCR) in this study are as follows:

$$PCR = \frac{\text{Promotion Cost}}{\text{Total Overhead Cost}}$$

C. Effect of NPF on ROA

The business activities of Islamic banks must be handled responsibly or called al “ghorm bil ghurmy, al kharaj bid dhamany”, namely business activities will be risky, and these risks must be managed responsibly [36]. Therefore, if financing distribution to Islamic banks is good, the risk of losing Islamic banks will be more predictable [37]. Thus, if the risk of loss from Islamic banks is low, the income received will also increase, so the ROA of Islamic banks will also be better. Therefore, the financing quality formula (NPF) is as follows:

$$NPF = \frac{\text{Bad Debt}}{\text{Total Financing}}$$

D. Effect of LCR on ROA

Employee productivity is measured by the results obtained compared to the costs incurred [38]. If the output produced is higher than the expenditure, the more productive the activity is [39]. Human resources are vital capital for Islamic banks to carry out the bank's business activities [40], [41]. Therefore, Islamic banks must focus on developing their human resource capabilities through training following the company's development needs and employee career development. Furthermore, the productivity of Islamic banks is determined by creativity and innovation in marketing and developing their goods and services to be accepted and used by the community. Therefore, the formula for the labor cost ratio is as follows:

$$LCR = \frac{\text{Labor Cost}}{\text{Total Revenue}}$$

E. ROA as Dependent Variable

The Islamic bank's performance achievement is vital for investors and stakeholders to ensure sustainability in its business activities [42]. One of the vital indicators to measure performance is profitability, represented by one of the key

financial indicators is return on assets (ROA) [43]. Moreover, the formula for ROA is as follows:

$$ROA = \frac{\text{Return}}{\text{Total Asset}}$$

Furthermore, based on the development of hypotheses and operational variables from this study, the equations of this research are as follows:

$$ROA = \alpha + \beta_1FDR + \beta_2MSF + \beta_3PCR - \beta_4NPF + \beta_5LCR + e \tag{1}$$

Remarks:

- ROA: Return on Assets;
- FDR: Financing to Deposit Ratio;
- MSF: Micro and Small Financing Ratio;
- PCR: Promotion Cost Ratio;
- NPF: Non-Performing Financing;
- LCR: Labor Cost Ratio.

IV. RESULTS AND DISCUSSION

The test model was first tested for normality of the residuals using the Jarque-Bera (J-B) test. In this study, the level of significance used was $\alpha = 0.05$. The basis for making decisions is to look at the probability numbers from the J-B statistics, with the following conditions:

- If the probability value of p 0.05, then the assumption of normality is fulfilled;
- If the probability < 0.05, then the normality assumption is not fulfilled.

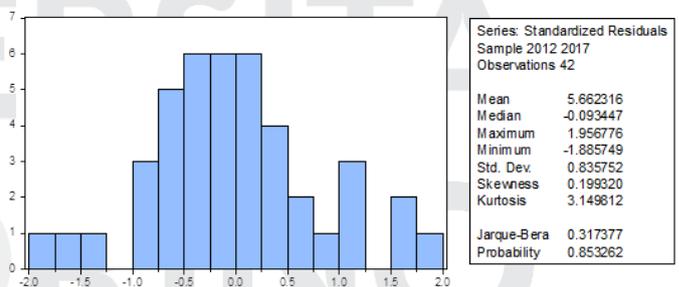


Figure 3. Jarque-Bera Normality Test
Source: Results of the Eviews 9 software

Based on figure 3 above, it is known that the probability value of the J-B statistic is 0.317. Because the probability value of p, which is 0.853, is greater than the significance level, which is 0.05. This means that the assumption of normality is met.

A. Multicollinearity Test

In this study, the symptoms of multicollinearity can be seen from the VIF value. [44] states that if the VIF value is > 10, this indicates multicollinearity. The results of the multicollinearity test are presented in table 2 below:

Table 2. Multicollinearity Test

Variable	Coefficient		
	Variance	Uncentered VIF	Centered VIF
C	0.699219	36.91701	NA
FDR	0.809947	1.661248	1.494840
MSF	0.009531	17.63686	1.936858
PCR	0.000763	2.718408	1.129617
NPF	2.77E-05	2.376449	1.128585
LCR	0.114247	9.392404	1.973143

Source: Results of the Eviews 9 software

Based on table 2 above, the results of the multicollinearity test show there are no symptoms of multicollinearity between the independent variables. The VIF value is not more than 10 [45].

B. Autocorrelation Test

Assumptions regarding the independence of the residuals (non-autocorrelation) can be tested using the Durbin-Watson test. The statistical value of the Durbin-Watson test ranged between 0 and 4. Statistical values of the Durbin-Watson test that were smaller than 1 or greater than 3 indicated an autocorrelation.

Table 3. Autocorrelation Test with Durbin-Watson Test

Log-likelihood	-51.55356	Hannan-Quinn criter.	2.831635
		Durbin-Watson stat	1.702421

Source: Results of the Eviews 9 software

Based on table 3 above, the value of the Durbin-Watson statistic is 1.702 because the value of the Durbin-Watson statistic is between 1 and 3, i.e., $1 < 2.240788 < 3$, then the non-autocorrelation assumption is met. In other words, there is no high autocorrelation symptom in the residuals.

C. Heteroscedasticity Test

Furthermore, to test whether there is heteroscedasticity or not, the Breusch-Pagan test can be used. Table 4 below presents the results of heteroscedasticity testing using the Breusch-Pagan test.

Table 4. Heteroscedasticity Test with Breusch-Pagan

F-statistic	5.030133	Prob. F (5,36)	0.3714
Obs*R-squared	17.27419	Prob. Chi-Square (5)	0.3540

Source: Results of the Eviews 9 software

Based on the results of the Breusch-Pagan test in table 4 above, it is known that the Prob. Chi-Square $0.3540 > 0.05$, which means there is no heteroscedasticity.

D. Chow Test

The Chow test is used to decide whether the model used is Common Effect or Fixed Effect, with the decision criterion that if the cross-section F prob score > 0.05 , then the Common Effect model will be used. However, if the cross-section F prob score < 0.05 , the Fixed Effect Model will be used. Table 5 below presents the results of the Chow test as follows:

Table 5. Chow test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	0.830911	(6,30)	0.5555
Cross-section Chi-square	6.456886	6	0.3740

Source: Results of the Eviews 9 software

Based on the results of the Chow test in table 5 above, it is known that the cross-section F prob score of $0.5555 > 0.05$, then the Common Effect model will be used.

E. Hypothesis Model Test

Moreover, to test the hypothesis of this study, a test was carried out, which included analysis of the coefficient of determination, simultaneous effect testing (F test), and partial effect testing (t-test). The results of the statistical values of the coefficient of determination, F test, and t-test are presented in table 6 below:

Table 6. Hypothesis Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.302120	0.836193	0.361304	0.7200
FDR	1.848839	0.899970	2.054333	0.0473
MSF	0.411366	0.097626	4.213707	0.0002
PCR	0.076515	0.027620	2.770304	0.0088
NPF	-0.013210	0.005259	-2.511705	0.0166
LCR	0.687303	0.338005	2.033410	0.0494
R-squared	0.551783	Mean dependent var	3.571905	
Adjusted R-squared	0.489530	S.D. dependent var	1.248340	
S.E. of regression	0.891903	Akaike info criterion	2.740646	
Sum squared resid	28.63770	Schwarz criterion	2.988884	
Log-likelihood	-51.55356	Hannan-Quinn criter.	2.831635	
F-statistic	8.863635	Durbin-Watson stat	1.680047	
Prob(F-statistic)	0.000015			

Source: Results of the Eviews 9 software

Based on table 6 above, it is known the value of Prob. (F-statistics), which is $0.000 < 0.05$, it can be concluded that all independent variables, namely FDR, MSF, PCR, NPF, and LCR, simultaneously significantly affect the ROA variable. Therefore, all independent variables used to determine their effect on ROA, including FDR, MSF, OCR, NPF, and LCR, can be used as determinants for practitioners in managing and improving the performance (ROA) of Islamic banks. Nevertheless, based on table 6 above, the following multiple linear regression equation is obtained:

$$ROA = 0.302 + 1.848FDR + 0.411MSF + 0.076PCR - 0.013NPF + 0.687LCR + e \quad (2)$$

Furthermore, according to equation 2 and table 6 then can be analyzed the factors that affect ROA are as follows:

- It is known that the regression coefficient value of FDR is 1.848 with a Prob value of 0.047, which is < 0.05 significance level, then FDR has a positive and significant effect on ROA;
- It is known that the regression coefficient value of MSF is 0.411 with a Prob value of 0.000, which is $<$ the significance level of 0.05, then MSF has a positive and significant effect on ROA;
- It is known that the regression coefficient value of PCR is 0.076 with a Prob value of 0.008, which is < 0.05 significance level, then PCR has a positive and significant effect on ROA;
- It is known that the regression coefficient value of the NPF is -0.013 with the Prob value of 0.016, which is $<$ the significance level of 0.05, then the NPF has a negative and significant effect on ROA;

- It is known that the regression coefficient value of LCR is 0.687 with a Prob value of 0.049, which is < 0.05 significance level, then LCR has a positive and significant effect on ROA.

The distribution of financing in Islamic banks has a crucial role in generating income. Therefore, the results of this study state that FDR has a positive and significant effect on ROA. Moreover, Islamic banks must compete with conventional banks in loan products so that people will be interested in using loan products from Islamic banks [46].

Furthermore, according to Nugroho et al. (2020) [47], the community's considerations in using sharia products are based not only on obedience to the teachings of Islam but also on their function, ease of access, and usefulness. During the industrial revolution 4.0, the VUCA Era (volatility, uncertainty, complexity, and ambiguity), and the current Covid-19 pandemic, the banking industry, including the Islamic banking industry, has digitalized products so that people can use banking services with limited mobility [48].

According to the results of this study, Islamic banks that have an identity as pro-social banks should have a business focus on micro and small entrepreneurs because these segments contribute to increasing income from Islamic banks. Loans to the micro and small business segment (MSF) have a positive and significant impact on ROA, so the more loans disbursed to this segment, the greater the potential for profit for Islamic banks. According to Maad et al. (2014) [49], micro and small entrepreneurs have responsible behavior in paying loan installments. Many micro and small entrepreneurs want to avoid borrowing from banks because they are afraid they will not pay the installments [50]. Therefore, most micro and small entrepreneurs have good and responsible behavior in terms of character. If micro and small entrepreneurs do not pay their loan installments, this is caused by problems their business conditions face [51].

The Islamic financial literacy of the Indonesian people still needs to improve. Therefore, Islamic banks need to promote and disseminate Islamic financial products and services to the public to increase information on the benefits, uses, and access to these products and services. This is evident from the results of this study, where the ratio of promotional costs (PCR) has a positive and significant effect on the performance of Islamic banks (ROA). Furthermore, Islamic banks must collaborate with all relevant stakeholders in carrying out promotions so that the information transfer process becomes more effective. Collaboration between parties such as Islamic banks, universities, government, and social institutions is vital. As a result, the socialization impact of Islamic financial products and services becomes more effective and significant.

The quality of financing for loans disbursed by Islamic banks is crucial in achieving performance. It is known from the results of this study that the quality of financing (NPF) has a negative effect on the performance of Islamic banks (ROA). The higher the NPF, the potential to reduce the profit of Islamic banks [19]. Therefore, the distribution of Islamic bank financing must apply the principles of three pillars which

include: (i) business aspects, (ii) risk aspects, and (iii) operational aspects.

Furthermore, the business aspect is that the financing distribution must follow the company's business focus and the portfolio guidelines owned by the Islamic bank. The risk aspect is applying risk acceptance criteria following the segment of the business distribution so that the risk of bad debts can be mitigated. In addition, operational aspects also need to be implemented to maintain good corporate governance in the distribution of financing so that there is no abuse of financing approval authority in implementing the four eyes principles [52].

Employee productivity as the principal capital of Islamic banks to achieve the performance of Islamic banks is a determining factor. It is known from this study that LCR has a positive and significant effect on ROA. Thus, Islamic banks' employee productivity, which includes professionalism, innovation, and creativity, becomes essential to improve their performance [53], [54]. In addition, the higher the ability to innovate and be creative of Islamic bank employees in making products and services that are to the needs and desires of the community, it will have an impact on increasing income from Islamic banks because more people will use the products and services of the Islamic bank.

However, based on the phenomenon of the low market share of Islamic banks and the results of this study, the input to the regulator is to help Islamic banks carry out socialization and dissemination related to products from Islamic banks to the public. In addition, the government also provides an option for state civil servants to receive their salaries using an Islamic bank account.

V. CONCLUSION

According to the results and discussion of the research, the conclusions of this study are as follows:

- The ratio of financing distribution (FDR) has a positive and significant effect on the ROA of Islamic banks. Therefore, Islamic banks must be able to compete with conventional banks in making loan products that follow the needs and desires of the community;
- The ratio of lending to the micro and small business (MSF) segment has a positive and significant impact on the ROA of Islamic banks. Thus, Islamic banks should have a business focus on the micro and small business segment so that the performance and reputation of Islamic banks that are pro-social towards improving welfare will increase in the community;
- Promotional activities (PCR) from Islamic banks positively and significantly affect ROA. Based on this, Islamic banks must actively promote and collaborate with all stakeholders, both educational institutions, regulators, and non-governmental organizations, to improve the Islamic financial literacy of the community;
- Financing quality (NPF) has a negative and significant effect on the ROA of Islamic banks. Therefore, the management of Islamic banks must focus on the quality

of the loans disbursed. In addition, the application of the principle of prudence is vital in mitigating risks that will arise in the future;

- Employee productivity (LCR) has a positive and significant effect on the ROA of Islamic banks. Thus, the management of Islamic banks must be concerned about increasing the ability, innovation, and creativity of Islamic bank employees to sell products and create products and services following public expectations.

The implication of this research is to provide repertoire related to Islamic bank performance research based on the point of view of the effectiveness of the promotion and the productivity of the employees of the Islamic bank. In addition, this research also has implications for regulators and practitioners of Islamic banks to improve Islamic banks' performance. Several factors need to be a concern, including the ability to channel financing (FDR), lending to the micro and small business segment (MSF), increasing promotion (PCR), maintaining financing quality (NPF), and also increasing employee productivity (LCR). Nevertheless, the limitation of this study is that the use of factors that affect ROA is limited to the variables FDR, MSF, PCR, NPF, and LCR. Therefore, further research can add to the factors that affect ROA.

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