

ISLAMIC PERSPECTIVE FOR SUSTAINABLE FINANCIAL SYSTEM

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PREFACE

The real world free-market economies have long been driven by the linear economy paradigm in which the ecological environment is not recognized as a resource. The linear process, a natural consequence of capitalism, has caused the fast exhaustion of the resources for the sake of “development.” After serious environmental catastrophes and financial crises, the common sense of the world has admitted that there are problems with conventional economics and has begun to search for more ‘sustainable’ economic and financial systems. The idea that firms should operate in a manner where they provide dignified living to people and consider the needs of next generations has become widespread especially in last three decades. Termed as the ‘stakeholder approach’, this understanding contributed to pave the way to the notion of ‘sustainability’, which calls for taking measures to solve the fundamental problems such as income and wealth inequality, poverty, corruption, climate change and disappearance of animal species.

As a result of the global concern around the effect of human actions on our environment, the idea of sustainability received serious attention and was given a fillip by the publications by The United Nations, which outlined the famous Sustainable Development Goals (SDGs).

This call is addressed not only to the real sector, but to the finance sector that provide funds required to operate the real economic activities. As a result of increasing consciousness of sustainability and public pressure, the finance sector has also begun to consider the social and environmental concerns more seriously. Banks, in addition to reporting their own compliance with sustainability, have also begun reporting the compliance with sustainability of the corporations and industries that they fund.

Contrary to capitalist or socialist understanding and practice, Islamic economics is already guided by the motivation of fair development in a ‘universal and sustainable manner’ as manifested in the objectives of the Islamic Law (*Maqasid’ul-Shariah*). Islamic economics is based on the ‘circular manner’ which prevents the exhaustion of the resources and environmental disasters. Three prominent examples of the characteristics of Islamic economics that distinguish it from the capitalist understanding relates to the concepts of private ownership, consumption and charity. Islamic law does recognize private ownership rights, yet this right is not absolute. While the unique creator Allah (swt) has absolute ownership, human beings, as the vicegerents of Allah in this world, possess the wealth as His trustee. The custodial characteristic of the ownership concept burdens strict responsibilities on human beings. Islam clearly bans wasting and orders the efficient use of resources. In a true Islamic economy the resources and wealth are equitably distributed and charity mechanism functions well. Lending is considered as a means of charity, rather than a business to make money. In sum, the development goal in Islamic economics is strictly characterized by its universality and sustainability.

The governments in Muslim countries and all firms that are known for their observance of Islamic values are expected to truly adopt and practice the concept of sustainability. Islamic financial institutions play a key role in achieving a sustainable economy. If they observe the compliance, not only with Islamic rules in their own products and services but also with the sustainability principles in the operations of their customers that they fund, the sustainability in the entire economy would be secured. The firms that want to work with the Islamic financial industry would be constrained to observe the sustainability in their operations, along with the complying with the Shariah criteria and the financial ratios.

The aim of this book is to elaborate the concept of sustainability from the perspective of Islamic economics and finance. It basically presents how the sustainability, which has recently been considered important by the developed non-Muslim world, is already an embedded phenomenon in Islamic economics and finance.

The initial articles present the embeddedness of the concept of sustainable development within Islamic economics and finance. Then, the following articles point out more specific dimensions and implementations in selected countries.

We hope that the governments in Muslim countries and managements of those financial and non-financial firms, known for their observance of Islamic principles will truly adopt the SDGs that will lead towards the circular economy paradigm and the entire world would notice the pioneer role of principles of Islamic finance in achieving these goals.

Mehmet Saraç

CHAPTER 1

CIRCULAR ECONOMY, SUSTAINABLE DEVELOPMENT, AND THE ROLE OF ISLAMIC FINANCE*

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Abstract

Based on an extract-produce-consume-waste mechanism, the conventional linear economy requires enormous extraction and wasteful production & consumption. This results in several tribulations and threats to the earth's climate such as rising global warming due to greenhouse gas emissions, erosion of the ecosystem, diminution of natural resources, and the release of toxic waste into natural habitat. To mitigate these challenges and to rescue the earth's climate from the devastation caused by the linear economic system, the importance of introducing and implementing a circular economic model is inevitable. A circular economy is based on a closed loop/cycle of production through consumption which facilitates limited use of materials and resources, minimal emission of hazardous elements into the nature, and a highly efficient waste management system to ensure recycling and reuse of residuals into further production. The Islamic financial system, being a pioneer in financing Sustainable Development, can be a major driver in the transformation towards a circular economy. The principles of Islamic finance, accompanied with Shari'ah regulations and Sustainable Development Goals (SDGs), will provide a solid guideline and framework as well as ample amount of funding sources for effective transition of the linear economy into the circular paradigm.

Keywords: Circular economy, sustainable development, Islamic finance

JEL Classification: P4, Q01

* An incorrect version of chapter 1 was inadvertently published earlier. The correct version with all references and attributions is published herewith.

1. Introduction

Today's global economy is run by a linear system, which entails a process known as extract-produce-consume-waste (Jørgensen and Pedersen, 2018; Sørensen, 2018), resulting in more than sixty billion tons of natural resources being extracted per year and more than thirteen billion tons of waste being discharged into the nature (6th GEF Assembly, Vietnam, 2018¹). As a result of this enormous extraction and wasteful production & consumption, the earth's climate has been exposed to a number of tribulations and threats such as mounting global warming due to greenhouse gas emissions, degeneration of the ecosystem, diminution of natural resources, and release of toxic waste into the natural habitat (6th GEF Assembly, Vietnam, 2018). Being one of the major social and economic drivers, this linear paradigm is greatly reducing the stability and capacity of the earth's systems to recover. This, in turn, is adversely affecting human livelihood and the global environment.

The earlier research has identified that linear production and consumption patterns has adversely affected the overall ecological system (Millar, et al., 2019; Esposito, et al., 2017) and socio-economic stability (Rees, 2010). The linear economic model capitalizes on extracting the earth's scarce resources and using them into manufacturing, without any scope for reuse of the residuals and/or recycling of the used goods into further production (Khan, 2019; Sørensen, 2018). Due to the ever-growing population of the earth and this extravagant nature of production and consumption, we are heading towards a crisis where there will be lack of resources and raw materials to meet the escalating demand for global production ((Goyal, et al., 2018; Rees, 2010). The wasteful and unsustainable nature of economic activities is greatly damaging the natural and human environment and leading us to a world where there won't be enough food, drinkable water, and other necessities for future generations.

Instituting a circular economic model is of utmost importance in order to successfully mitigate aforementioned challenges and to rescue the earth's climate from the depredation of the linear economy. Utilizing public-private partnerships, the circular economic model will introduce a closed loop approach to production and consumption using environment-friendly resources, sustainable product designs, efficient industrial processes, and effective waste management systems. Replacing the linear economic model with a circular alternative will enable us to treat the environment in the way that it should be treated . By reducing mass extraction of earth's natural resources and emission of greenhouse gas and other hazardous

1 Please see <https://www.thegef.org/events/sixth-gef-assembly-and-associated-meetings>

substances, we will be able to deal with the environment in a more sustainable way. Transformation of the linear economic model into a circular one will demand a highly technical and efficient approach, which in turn will create businesses and workforce opportunities, promote employment growth and economic development, save billions of dollars of reinvestment, and help nations thrive and succeed in every aspect of their economy.

To introduce and promote a circular economic model and to achieve its underlying objectives, it is high time to create such an economy where the ‘end-of-life’ concept is replaced by the choice of minimizing and reusing waste through sustainable design of materials, products, systems, and business models. In order to achieve the full benefits of a circular economy, the model is reliant upon cooperation within sectors and supply chains, and across countries. But there is over-reliance upon financing and investors who recognize that the risks of the linear system can unlock the new opportunities. In order to maintain the spirit of the circular economy, providing an effective and sustainable source of financing is the key for the financial needs of the implementation of circular economy. This paper will guide on the perspective of Islamic Finance in introducing circular economy, building a bridge between circular economy, SDGs and Islamic finance, and supporting an effective transformation of the traditional linear economy into a circular system.

This paper is a systematic review of existing literature. It attempts to provide the key definitions related to circular economic model, as well as identifies and reviews the most relevant and significant studies in the existing literature. Based on searching for keywords and screening of the abstracts, a precise list of papers/publications was selected for thorough review. A significant number of publications were rejected as they fail to build a bridge between circular economy and Islamic finance, i.e., how Islamic finance can play a significant role towards the implementation of circular business models. Selected studies have mostly been analyzed based on their research question, theoretical framework, methodology, key findings, and policy implications and recommendation for further research.

This paper has been divided into five sections. In section 2, an extensive theoretical framework for circular economy and a brief analysis of the literature is presented where the evolution and history of circular economy are discussed. Section 2 also examines the connection between circular economy and sustainable development and identifies the potential risks and barriers to circular economy. Section 3 begins with a discussion of the emergence of Islamic finance in the global financial system and addresses how Islamic finance is linked to sustainable development goals (SDGs). Section 4 attempts to build a bridge between circular economy, sustainable development, and the Islamic financial system.

How Islamic finance can help to introduce and support the implementation of circular economy and SDGs has also been discussed in section 4. Finally, section 5 concludes and provides directions for future research.

2. Theoretical Framework and Literature Review

There is a direct and positive association between economic development and scarcity of global resources (Krausmann et al., 2009). Furness et al. (2012) document that mass usage of earth's scarce resources has been following an upward trend despite the expansion of the global middle class. The existing method of operation in majority of the global industries is based on a linear i.e. extract-produce-consume-waste approach (Goyal, et al., 2018), which, regardless of the global recycling and sustainability efforts, is leading the world to a failed system aimed at economic development while ignoring the innovation and technological disruptions (Arpin-Pont et al., 2016). The failure and devastations of existing linear economic system gave birth to a debate around the need for transformation of the linear to a circular economic model. Circular economy is a brand-new concept capitalizing on a closed/loop approach that can drastically transform the existing way of manufacturing, production, and consumption (The Forum of Young Global Leaders, 2015²). Challenging the extravagant and detrimental linear system, the circular economic model will break the vicious cycle (Ghisellini et al., 2016; Butterworth et al., 2014). Through the introduction and implementation of eco-friendly and sustainable production techniques, circular economy will create a transformative and prudent global market ensuring value-creation and economic opulence for every nation (Korhonen et al., 2018; Raksit, 2014)

A circular economic approach, in contrast to the traditional linear model, is an economic system with the primary goal of making the best and most sustainable use of resources by increasing efficiency and thereby reducing waste. It aims at value creation through efficient use of resources and drastic transformation of production and consumption techniques (Kirchherr et al., 2017). Majority of circular economy literature emphasizes on its production benefits (Rizos et al., 2017; Ghisellini et al., 2016), value creation ability (Lewandowski, 2016), and social advantages encompassing an economic model based on renewable energy and resource efficiency (Wijkman et al., 2015). Albeit the earlier literature has failed to provide enough understanding of the strategies promoting circular economy (Repo et al., 2018; Korhonen et al., 2018), the circular economy has the ability to bring massive changes to the day to day lives of humankind (Hobson et al., 2016).

2 Please see https://www3.weforum.org/docs/WEF_YGL16_Annual_Report_2016.pdf

A good amount of literature focused on the barriers to circular economy and highlighted a number of factors impeding the dispersal and advantages of circular business models. Based on an extensive survey of European businesses, Kirchherr et al. (2017) reported that lack of consumer awareness, which is vital for recycling efforts, is one of the major drivers hindering a transition towards circular economy. Studying small and medium enterprises trying to implement circular business models, Rizos et al. (2016) came up with similar finding and pointed on lack of support from demand networks. Van Eijk (2015) provided general insights on the drivers of and barriers to circular economy. Examining the relationship between sustainability and circular business models, Geissdoerfer et al. (2017) denied referring to consumer aspects as the major barrier to circular economy. According to Ghisellini et al. (2016), consumers are the passive drivers and it's rather the production-side factors that are affecting the effective transition from linear to circular economy.

Based on an extensive analysis of scientific and grey literature, Kirchherr et al. (2017) provided a precise and thorough definition of circular economy: "A circular economy is an economic system that replaces the 'end-of-life' reducing, alternatively reusing, recycling and recovering materials in production and consumption processes. It operates at the micro level (products, companies, consumers) as well as macro level (city, region, nation, and beyond) with the aim of accomplishing sustainable development, thus simultaneously creating environmental quality, economic prosperity, and social equity, to the benefit of current and future generations." (p. 229). Circular economy minimizes emission of harmful gases and other hazardous substances into nature. Based on closed loop of production and manufacturing, the model of circular economy facilitates significant waste reduction through effective recycling and refurbishing of materials. It saves a great deal of time and money by minimizing the residual loss of production. Critics may argue that since circular economy follows a sustainable method of production, i.e., using waste or leftovers for reproduction, it may reduce the quality of products and services and hence overall business profits. However, in reality, firms running by circular business models are better able to utilize their inventories, increasing their overall efficiency and hence operational profits.

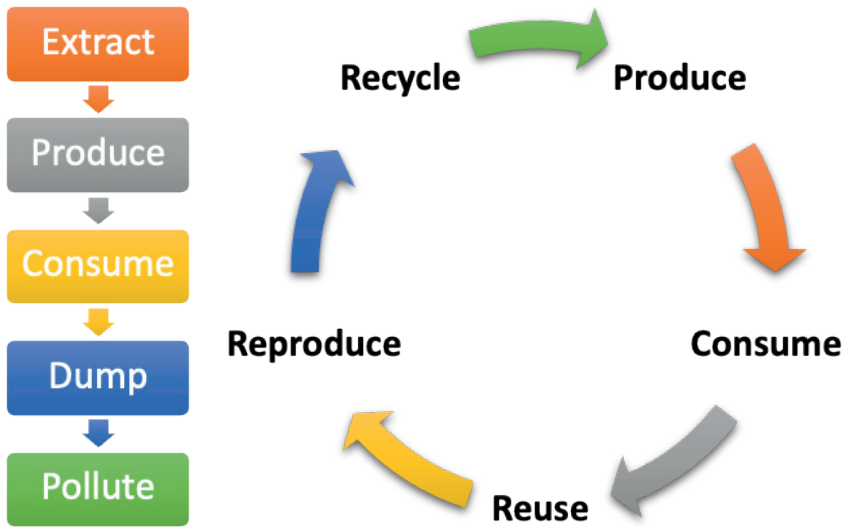


Figure 1. Linear vs. Circular economy³

2.1. History of Circular Economy

The first articulation of the term ‘circular economy’ was developed by Kenneth Boulding during the early 1970s. In his essay titled “The Economics of the Coming Spaceship Earth” he came up with the idea of a clear distinction between open and closed economies. According to Boulding (1966), in an open economy resources are wasted and lost to nature during production, whereas in a circular economy resources are kept and preserved during the production process to be reused for future production.

Unlike the traditional linear model, the circular economy is based on a non-linear i.e. circular/closed system from which the fundamental theory and practice of circular economy has evolved. The theoretical underpinnings of circular economy are greatly influenced by pertinent ideas and concepts such as ‘cradle to cradle’ (a biomimetic/synthetic approach circulating resources in the production process to ensure healthy and efficient production), ‘industrial ecology’ (the study of sustainable resource flows through production), ‘blue economy’ (a viable use of aquatic resources to counteract scarcity and foster economic growth), and so on.

Pearce and Turner (1989) worked extensively on the theory and modeling of circular economy. In their renowned book named “Economics of Natural Resources and the Environment,” they severely critiqued the traditional (linear) economy, which they defined

3 Please see https://en.wikipedia.org/wiki/Circular_economy

as a faulty and inefficient system with a certain residual loss of production and no scope for recycling or reuse of the residuals. Jackson (1996) wrote a famous book titled “Material Concern” in which he incorporated the ideas of Walter R. Stahel, Bill Rees, and Bob Costanza. He established the core idea of precautionary environmental management by replacing the traditional extractive linear economic model with a circular and more efficient one. Walter R. Stahel, the father of Performance Economy, is well known for his extensive thoughts and efforts to introduce and explain the idea of circular economy. In 2019, he published a book named “The Circular Economy – A User’s Guide” where he summarized more than thirty years of his research on the field of Circular Economy⁴.

2.2. Evolution of Thought

In the book titled “Jobs for Tomorrow: The Potential for Substituting Manpower for Energy” Stahel and Reday-Mulvey (1981) created a vision of a circular economy and its potential influence on the development of economics and other aspects of human lives. They were the first to explain how a circular economy, unlike its linear counterpart, can be introduced to achieve minimization of mass extraction, effective waste management, and creation of new jobs and business opportunities. Stahel’s institute is considered as one of the oldest and most fundamental think tanks for circular economy and sustainable development. His ideas were greatly based on the objectives of creating high performance and long lasting output, understanding production from the perspective of delivering services rather manufacturing goods, making the best use of resources through effective management and reuse of waste, fostering employment by creating new opportunities for businesses, and finally ensuring effective and sustainable economic development.

Introduced in 2006, China’s 11th five-year plans/guidelines were considered a remarkable national policy for introducing circular economy and promoting sustainable development⁵. In recent years, the concept of circular economy has gained enormous exposure and coverage by the Ellen MacArthur Foundation, which has summarized and disclosed the economic scope and environmental benefits of circular economy by combining the harmonizing schools of thought with a view to develop a logical framework. Circular economic strategies need to be introduced and implemented by nations in order to meet the targets for energy and water consumption as well as emission reduction. Circular economy can greatly contribute towards the achievement of the COP 21 Agreement (also known as the Paris Agreement), a new

4 Please see <https://www.taylorfrancis.com/books/mono/10.4324/9780429259203/circular-economy-walter-stahel-ellen-macarthur>.

5 Please see http://www.gov.cn/english/special/115y_index.htm

international agreement led by the Paris Climate Conference, which has the aim of reducing global warming to below 2 degrees centigrade. However, as argued by ecologists and environmentalists, global warming should be reduced to 1.5 degrees centigrade or below and additional reduction of 15 billion metric tons of CO₂ gas emissions are needed by the end of 2030. The successful accomplishment of these goals hinges on the replacement of the traditional linear model with circular economic strategies.

2.3. From Linear to Circular Approach

The traditional linear model, based on the produce-make-waste approach, is highly inefficient in that it consumes/extracts an unlimited amount of resources from nature and wastes much of it out of the production process. The circular economy is a combination of economic, environmental, technological, and social issues (Slavik et al., 2018). The circular economic model, in contrast to the traditional one, cares about nature and living systems. In a circular process, a finite amount of resources is extracted from the environment based on need for production and utilized in a more efficient and sustainable manner during the production process. Basically, in a circular economy the residual amount that is lost in the production process is restored and recycled for the purpose of reuse and making output. The circular economy is a regenerative method that views the production process as a system of organisms producing nutrients (waste) that can be reused back into the process.

As mentioned earlier, Walter R. Stahel has become one of the most prominent thinkers and scholars in the field of sustainable development through his introduction of circular economy. Stahel, a Swiss architect and environmental analyst, is known as the father of ‘Performance Economy,’ which was founded on the concept of circular economy and its impact on waste management & emission minimization, economic competitiveness, and employment creation. In 2002, German chemist Michael Braungart and American architect Bill McDonough introduced the concept of ‘Cradle to Cradle,’ which has been founded on Stahel’s idea of circular economy and industrial sustainability. ‘Cradle to Cradle’ conceptualizes on three elements: elimination of the concept of waste, maximization of renewable energy, and celebration of diversity by respecting human and natural systems.

Ellen Macarthur Foundation, in 2013, published a report titled “Towards the Circular Economy: Economic and Business Rationale for an Accelerated Transition⁶⁷”. The fact base and analytics for the report were provided by McKinsey & Company. The report is devised into multiple chapters, discussing the limitations of linear economic models, the advantages

6 Please see https://www.werktrends.nl/app/uploads/2015/06/Rapport_McKinsey-Towards_A_Circular_Economy.pdf

of shifting from linear to circular economy, real-world cases of successful transition and subsequent benefits, and policy recommendations for businesses on how to achieve an effective transformation from linear to circular models. The cases analyzed are based on countries from the European Union (EU). The report illustrates the detrimental consequences of the conventional “extract-produce-consume-waste” approach, as well as highlights the hands-on benefits (increased efficiency, reduced costs, higher profits, among others) achieved by European businesses that transformed from conventional to circular, i.e., sustainable business strategies. Further, the report also analyses the areas of business or industries that facilitate and benefit from the transformation the most.

Studying numerous cases from the U.S., Europe, and China, Ranta et al. (2018) document the key institutional drivers of circular economy and the major barriers that businesses and industries face in regard to a smooth transition. Their study identifies the sustainable solutions unlocked in a circular economy, resulting from value creation in stages of supply chain and manufacturing. Conducting a comparative analysis of circular business cases in three different institutional environments, i.e., the U.S., Europe, and China, their findings suggest that recycling lies at the center point of the major drivers of circular and sustainable economic models. Further, they argue that the cultural, perceptual, and regulatory differences among geographic regions are the key barriers. Their study recommends that flexible institutional and regulatory mechanisms across regions are crucial for effective implementation of circular and sustainable business environments.

2.4. Circular Economy and Sustainable Development

Because of its numerous environmental and social benefits, such as, minimal use of raw materials and thus increased efficiency, reduced disposition of waste and minimized discharge of harmful elements into the nature, circular economy is undoubtedly the better and more sustainable alternative that businesses are thriving for. Due to its enormous scope and potential, circular economy has gained significant research attention in recent years (Geissdoerfer et al., 2017). A massive amount of research is being conducted on the feasibility of adopting circular business processes and their ability to create a sustainable business environment for all stakeholders.

Elia et al. (2017) critically reviews existing studies in the circular economy literature, while focusing on the methodological analysis of circular business systems to evaluate and assess their credibility, as well as their ability and effectiveness to ensure environmental and social sustainability. They suggest that the fundamental edges of circular economic models,

i.e., reusing and recycling, lie at the core of sustainable business environments, leading it to be an eventual solution to its conventional (linear) counterpart. Di Maio et al. (2015) document the long-term sustainability of circular business models by highlighting two of its major characteristics: use of renewable resources and materials into the production, and recycling of disposed goods for further production.

2.5. Financial Aspects of Circular Economy

Circular economic models gained attention of experts and policy makers because not only of its environmental benefits but also of tremendous potential from a financial valuation perspective. Conventional finance mostly cares about the cost of capital and the future cash flows to be generated by investment of the capital. Conversely, circular business models are concerned about the stability and sustainability of the future cash flows. Stakeholders in a circular business model take part into sustainable economic processes through sharing of information with a view to having constant feedbacks that help reduce the businesses' exposure to financial and ecological crises in the future. Circular economic models are more likely to be able to minimize their financial costs, resulting in greater amount of profits. Lower cost of capital resulting from sustainable and less volatile future cash flows is in the core of the financial benefit.

Being a relatively new concept that is still under experiments, a circular economy fails to provide sufficient data and/or empirical evidence in regard to the sustainability of future cash flows to be generated by circular business models. In most of times, lack of funding becomes a vital issue and major obstacle for circular economic models that stems from lack of investors' confidence. Investors require evidence i.e. track record indicating the feasibility and hence profitability of the circular business models. They need to be assured with the ability of these models to successfully create value, both socially and financially. Due to lack of data and proven track record of success, circular economic models are perceived as potentially risk investments. Large firms who have benefited through adoption of circular business models may contribute significantly to the industrial literature and help attract future investments towards sustainable financing.

Cost of financing is probably the most crucial aspect of valuation facing financial institutions and other business organizations regardless of their nature of business. The fundamental of finance suggest that investors require to be compensated with extra return in response to an additional unit of risk or uncertainty (Tian, 2018; Shoaib & Siddiqui, 2017). The higher premium paired with the higher amount of risk help investors to get cushion

against adverse future circumstances. Circular economy is a relatively new concept that is yet to be tested for successful and effective implementation. Investing on circular business models leads investors to be exposed to higher level of uncertainty for which they must be rewarded with a higher premium. Lack of historical data accompanied with higher level of uncertainty cause circular economic models to exhibit a much higher cost of capital as compared to its conventional counterpart.

Despite a higher cost of capital because of high uncertainty stemming from lack of evidence, circular economic models are still good buys because of their intangible benefits. Circular economies are based on collaborative efforts and cultivating relationships among stakeholders. Sustainable processes and reliable stakeholder relationships are important intangible assets substantiating the valuation of circular economic models. Unlike those of traditional business models, valuation of a circular economy is based on the valuation of a number of embedded options/benefits associated with the sustainable nature of the circular businesses. Valuation of implicit real options is one of the vital issues that has tremendous implications for the financial aspect of circular economic models.

2.6. Challenges and Barriers to Circular Economy

Despite the never-ending benefits of the circular economy, the transformation towards it from the existing system will be highly challenging. In addition to the developing and least developed regions of the world, many developed nations lack infrastructural and technological competitiveness in terms of effective transition towards the circular economic system. Industries in many developed nations are not well equipped to implement and transform to a circular model. According to Lacy et al. (2015), strategic and operational designs in most firms are deeply rooted in the traditional linear model, which will make it difficult and complicated for them to switch to a circular model. However, many countries will benefit greatly from the transformation if they can transit successfully. Reichel et al. (2016) suggested that effective transition policies are needed beforehand in order to minimize the potential failures and make the transition beneficial for all nations.

Despite the reduction of cost and price risk, the implementation of a circular economy will require big investments for which businesses may not be prepared. Even though mature firms may find it affordable to finance such massive transformations, firms in the early and growth stages of the life cycle will surely find it challenging to support and cope up with these changes. Further, cost savings from circular economies may not be immediately available, in addition to the assumption of associated implicit costs (Yacob et al., 2013).

Implementation of a successful transformation from linear to circular paradigm requires transformation at all levels of the supply chain. Lack of synchrony within the supply chain in regard to the transformation may turn out to be a significant barrier. Differences in regulatory environments and legal procedures across industries may further worsen the transition. Kirchherr et al. (2017) identify four main interrelated barriers to circular economy: technological, market, regulatory, and cultural.

Firms with conservative culture regarding investments and innovation may cause barriers for firms with more aggressive expansion and development strategies. In fact, the former group will cause lack of awareness among consumers regarding circular design, production, and usage of goods and services. Thus, the cultural barrier will result in a further technological barrier. Regulatory and market barriers are highly interrelated as well. Circular business models will encounter limited funding opportunities due to their limited/circular procurement. They may find it difficult to demonstrate that they have a potential market even in the absence of such procurements, which may discourage policy makers from promoting the transformation to a circular economy. Thus, regulatory barriers may result in market barriers which will create further regulatory barriers. The interdependence of these four categories of barriers may result in the failure to adapt to the circular economic model. However, potential insights and effective strategies can be formulated by studying and analyzing these barriers and their adverse impact on the transition to a circular economy.

3. Emergence of Islamic Finance in the Global Financial System

Islamic finance is one of the fastest growing branches of modern finance system. The drastic changes in the global political economy accompanied by frequent failures of the conventional financial system during the global financial crises resulted in the emergence of modern Islamic finance in the 1970s. Numerous experiments had been conducted before the formal introduction and implementation of Islamic finance took place. During the 1940s, loan cooperatives, based on the concept of western mutual loan experiments, were introduced in the Indian subcontinent. In the late 1950s, landlords in the rural areas of Pakistan devised the idea of interest-free credit. In 1963, the Muslim Pilgrims Savings Corporation was established in Malaysia for the purpose of helping people perform Hajj, which is the biggest religious pilgrimage of the Muslim community. The corporation later transformed into an Islamic savings bank with the purpose of investing the savings of potential pilgrims as per the rules and guidelines of Shari'ah.

Warde (2000) documents that Dr. Ahmed Al-Najjar, the founder and later the Secretary of the International Association of Islamic banks (IAIB), conducted the most admirable experiment in

Egypt over the years 1963 – 1967. Modeled after the mutual savings schemes in West Germany, the bank expanded to nine branches with 2.5 million depositors during its good times. No interest charged was the fundamental of the bank's business even though the bank did not have any religious association. Later, based on the principles of Mudaraba and Zakat, Nasser Social Bank was established by the Egyptian government to extend financial support to the underprivileged, as well as to ensure economic harmony at all levels in the society (Warde, 2000).

3.1. Defining Islamic finance

Islamic finance is broadly defined as the financial activities conducted by the followers of Islam. It refers to the financial operations that are conducted on the principles of the Quran and the teachings of Prophet Muhammad (PBUH). The practices in Islamic finance are completely different from those in the traditional/conventional financial system, which does not follow any specific religious principle and rather is tailored and governed by humans to fulfill their transient benefits and interests. The definition of Islamic finance is beyond what is called 'interest-free'. The operations in Islamic finance may or may not be interest-free but they must be in accordance with the guidelines of the Quran and the Sunnah of the holy Prophet (PBUH). The fundamental Islamic principles suggest that any kind of financial exchange or transaction must be free of Riba & Gharar and must capitalize on Halal activities. Riba is the unjustified increase in payables and gharar refers to uncertainty or risk which if present in any financial transaction may lead to speculation. Halal activities refer to those that are permitted (not prohibited) by Islam. The foundation of Islamic finance is based on two aspects: a philosophy of profit and risk sharing and the promotion of economic and social development through exercising specific religious practices such as Zakah. In sum, the major difference between conventional and Islamic finance is that the former focuses on profit/wealth maximization by one party whereas the latter believes in profit/loss and/or risk sharing by both parties.

Islamic finance is comprised of all sorts of financial services such as banking, non-bank financial services, asset management companies and mutual funds, insurance corporations, etc. Over the years Islamic finance has gone through enormous expansion. In addition to the increase in the number of solely Islamic banks and financial institutions, most conventional banks and other financial organizations have opened Islamic wings/windows to reach and serve the growing needs of this emergent sector.

3.2. Islamic Finance and Sustainable Development Goals (SDGs)

The foundation of Islam is based on the principle of sustainable use of livelihood and resources. In fact, the principles and practices of Islam refer to efficient use of resources,

minimal discharge of harmful objects into nature, and effective waste management in order to minimize residual loss. Islam strongly discourages wastefulness and seriously warns its followers about the harsh consequences and punishments to be encountered in the afterlife. Islamic finance can play a vital role in developing and implementing sustainable development goals (SDGs). In fact, Islamic finance has become one of the major sources of substantial amounts of capital to finance the SDGs. Over the years, Islamic finance has experienced significant growth of 10-12% per annum. Islamic finance has grown into about two trillion industry that seeks to finance/support underprivileged Muslims as well as non-Muslims and contribute towards the development and implementation of SDGs.

To identify and explore the potential contributions of Islamic finance in achieving the SDGs, the 4th Annual Symposium on Islamic finance was held in Kuala Lumpur in December 2018. The Symposium was co-organized by the World Bank Group, Islamic Research and Training Institute (IRTI), and International Center for Education in Islamic finance (INCEIF). The Symposium was attended by many leading academics, policymakers, members of the public and private sectors, and development communities, all of whom exchanged their ideas and impressions on the rapidly changing field of Islamic finance and the recent and new developments of the SDGs.

Sustainable Development Goals are supported by Islamic finance through innovative product design. For example, Islamic bonds, called Green Sukuk, promote eco-friendly investment and financing. Islamic endowment funds, such as Waqf, provide environment-friendly financing to Small and Medium Enterprises (SMEs). There are many other instruments such as FinTech, Islamic endowment funds for long term investments, etc., which are in place to promote and facilitate the implementation of SDGs.

To support Islamic financial institutions in achieving SDGs, a favorable environment must be established. In order to do so, legal and regulatory mechanisms should be strengthened and made more robust at the country level. At the international level, in addition to the global standards set by organizations like Islamic Financial Services Board (IFSB) and the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), the standardization of regulations and Shari'ah governance is very crucial. Islamic financial instruments have great potential to promote sustainable economic growth, alleviate poverty, strengthen livelihood strategies, improve basic services, and create more employment and business opportunities.

4. Building a Bridge between Islamic Finance and Circular Economy

4.1. Reform of Shari'ah Governance

It is the responsibility of Islamic financial institutions to ensure compliance with Shari'ah principles in terms of product design, operational strategies, management practices, etc. Due to Shari'ah compliance, Islamic financial institutions recognize certain rules and prohibitions that are not observed by their conventional counterparts. Shari'ah non-compliance risk arises when Islamic financial institutions fail to comply with the requirements and principles of the Shari'ah. Being solely pertinent to Islamic banks and financial institutions, the Shari'ah non-compliance risk gives rise to several concerns. Firms failing to comply with the Shari'ah regulations may lose confidence of the customers, investors, and other stakeholders. In particular, firms gaining income from non-halal or prohibited sources are in greater jeopardy and they must try channeling those funds to charitable initiatives.

By its very nature of doing business, Islamic banks and financial institutions are solely governed by the principles of Shari'ah, leaving it largely beyond the intervention and supervision of conventional regulatory authorities. Islamic financial institutions (IFIs) are run by discretion to determine their governing principles as per Shari'ah, allowing them to avail complete autonomy and thus threatening the foundation and effectiveness of the Shari'ah governance. This is even prevalent in countries like Malaysia, Oman, and Syria, which have widespread Shari'ah governance structures established at the national level. This leads to the inevitable requirement that Shari'ah governance systems within the IFIs are highly vigorous and governments and regulators in countries with Islamic financial systems assure strong enforcement of the Shari'ah governance by the IFIs.

There are several threats facing the effective implementation of the Shari'ah regulations within the IFIs. First of all, there exists a so-called doubt in the customers, even those seeking Shari'ah compliant financial alternatives, regarding the authenticity of the Islamic financial products. In particular, many people believe that the profit/loss sharing mechanism promoted by IFIs is simply another version of interest or *riba*, discouraging them to use Islamic financial products or establishing any sort of financial connection with the IFIs. Second, there is a lack of confidence among customers and other stakeholders in regard to the ability of Shari'ah regulators to independently perform their responsibilities, especially in cases where the Shari'ah board is comprised of members from the management of the IFI, resulting in agency issues. Third, stakeholders may raise questions about the eligibility of the Shari'ah regulators or board members, which greatly influences the Shari'ah governance process.

4.2. Role of Blended Finance

The fundamental of Islamic blended finance, which can be considered as an optimal combination of socially responsible Islamic financial products, is to ensure that there is a positive-sum solution for all parties. The underlying Islamic financial products can be based on funds accumulated from Zakah, Sadaqa, and a range of numerous Islamic social funds. These Islamic social funds may be accumulated to be utilized to finance Shari'ah compliant yet profitable as well as sustainable investment projects, to create jobs, and thus to help further economic development. IFIs may also go for financing through private placements, where large institutional investors following Shari'ah principles and conducting business under Shari'ah guidelines will inject large amounts of funds to further expand the market share of the IFIs and thereby increase their contributions to the economy and society. The main purpose of Islamic blended finance is to ensure a sustainable growth of business entities (Gavas et al., 2014). Use of Islamic financial instruments that are aligned with the sustainable development goals along with Islamic social funds are likely to play a key role in this regard. However, as argued by Tonkonogy et al. (2018), the effectiveness of blended finance is subject to its application as a financial solution. In particular, the blended finance mechanism is required to establish a positive-sum situation for all parties/stakeholders involved, which lies at the core of the blended finance.

4.3. Role of Islamic Finance in the Transformation from Linear to Circular Economy

Compared to its conventional counterpart, the Islamic financial system is considered as a more robust and feasible financing mechanism in promoting economic and sustainable development. Based on the principle of risk sharing instead of profit maximization, IFIs benefit from intrinsic structural advantage. Further, the Islamic financial system is proven to be more (less) vigorous (vulnerable) during times of economic and financial crises, as it has been seen in the global financial crisis of 2007-2008. Islamic banking industry has been rapidly growing over the past two decades across both Muslim- and non-Muslim majority countries. According to IFSB (2017), Islamic and Shari'ah based banking and financing had operations in more than 30 countries with a total asset size of approximately USD 1.5 trillion. The rapid growth of the Islamic financial system across global markets has made it one of the key drivers of global sustainable development.

In 2000, Millennium Development Goals (MDGs) were set by the United Nations (UN) to protect the path of development and prosperity of future generations by the end of 2015 (Khan, 2019). However, the MDGs were replaced with an updated version called Sustainable

Development Goals (SDGs) at the beginning of 2015. The shift from MDGs to SDGs was the major driver of the transformation from linear to circular economic model. Islamic finance can play a key role in the process by extending financial support to businesses ensuring economic growth, social inclusion, and environmental protection.

Founded on the principles of Shari'ah and aligned with the goals of sustainable development, the Islamic financial system exhibits promising potential to help implement the transformation from linear to circular economy. Ensuring the betterment of the environment and society is the central motive of Islamic financial system as well as Islamic social funds, making them imperative sources of substantial financing to implement the circular business models. The concept of Islamic finance and IFIs can contribute to the transformation by providing advisory services based on the principles of Shari'ah, as well as by offering large-scale capital investments into environmentally and socially responsible business projects and organizations. In particular, Islamic financial schemes may be used to finance businesses aiming at environmental innovation, waste reduction, recycling of disposed materials and products, and ensuring effective governance mechanism to promote and implement sustainable business models.

As far as the financial solutions are concerned, Islamic finance can offer a range of Shari'ah compliant and ethically and socially responsible financial instruments, such as Green Sukuk, which are known as green Islamic bonds. Sukuk is a vastly popular Islamic financial product offered by public and private IFIs across numerous countries, helping firms to raise capital needed to conduct their businesses in an Islamic and Shari'ah compliant manner which could otherwise not be possible to generate through conventional banks and financial institutions. The contributing factor of Green Sukuk is that apart from being a fund generating mechanism for Shari'ah compliant businesses, it helps finance firms and projects that are heavily involved in environmentally and socially responsible initiatives, making it a highly relevant and potential candidate for financing circular/ waste-reducing and sustainable business models. In sum, Green Sukuk is a financial innovation to finance large environment friendly infrastructure projects having positive impact on overall society (Kassim and Abdullah, 2018) and consequently, promote circular economy.

Although majority of Muslim countries are based on linear economy, few countries have taken the initiatives of renewable and green projects through Islamic financing options to support the circular economy. For example, within the framework of socially responsible Investment (SRI), Tadau Energy Sdn Bhd and Quantum Solar (Malaysian based firms) issued sukuk of MYR 250 and MYR 1 billion respectively, to support solar energy projects (Wahab &

Naim, 2018). Similarly, Indonesia issued sovereign Green Sukuk worth of USD 1.25 billion. Countries having Islamic financial systems need to take advantage of the funds generated from Green Sukuk to invest in projects dealing with global climate change issues such as reduction of waste, remission of greenhouse gas effects, facilitation of recycling and refurbishment, and hence supporting an effective transformation of conventional to circular paradigm.

Even though it's imperative for all Islamic (and non-Islamic as well) countries to shift from linear to circular business models, OIC countries, because of the special environmental challenges they face, need the transformation the most. Despite the consistently poor performance of the OIC countries in the Environmental Performance Index (EPI) published by Yale University, they have promising growth rates as compared with the developed nations. Among the OIC countries, Qatar has made significant developments in implementing SDGs and transforming into more environmentally and socially responsible initiatives. Being a high temperature land with numerous environmental and climate issues (Brooks et al., 2006), Qatar is undergoing rapid industrialization and population growth (Luomi, 2012a). Given the ongoing ecological issues, the government and regulatory authorities are tirelessly working on the restoration of the environmental and ecological sustainability. Unlike a number of other countries that are going through similar problems, i.e., Nigeria, Pakistan, and Morocco, Qatar's performance is consistently impressive based on the ecological footprint, flaring, and carbon emission. Qatar has become a role model for other OIC countries in the promotion and implementation of sustainable financial models and Qatar Development Bank played the most crucial role in the journey. Working with Qatar Charity by offering financial guarantees, they pooled large-scale funding from Islamic banks to help support small and medium businesses that are practicing sustainable and circular business concepts.

Islamic finance can help promote and successfully implement circular, i.e., sustainable business models through the use of numerous innovative financial instruments. The case of Green Sukuk has already been illustrated. Another useful financing arrangement may be Qard with profit, enabling Islamic banks and FIs and/or other financial institutions to help SMEs implement sustainable business models in exchange of profit sharing. The model created by Qatar with the help of Qatar Development Bank might be followed by the neighboring nations. Global markets offer huge potential for businesses as well as Islamic banks and financial institutions to replace conventional/linear business models with their circular counterparts. Entrepreneurs with brilliant and environmentally and socially sustainable business idea should seek financial and philanthropic assistance to the IFIs through the extension of customized and effective Islamic financial instruments offered by the IFIs.

5. Conclusion

The main purpose of this paper is to introduce the novel and rapidly growing idea of circular economy and how Islamic finance can play a key role in the promotion and implementation of circular business models. Conventional economic model, also known as the linear economy, is based on the extract-produce-consume-dispose mechanism, whereas the circular economy facilitates recycling of the disposed products and materials and reusing them into further production, reducing mass disposition of waste into the natural habitat.

Islamic finance is a rapidly growing segment in the global financial industry. Founded on the principles of Shari'ah and with the objective of profit and risk sharing, Islamic banks and financial institutions have the unique ability of extending financial and advisory support to businesses and individuals with potentials while ensuring sustainability in the environmental and social dimensions. In many cases, the long-term funds provided by IFIs to help promote and implement sustainable initiatives could not otherwise be generated through the conventional mechanism because of their sole objective of profit maximization.

With the wide-range financing mechanisms, Islamic finance can help implement the SDGs as well as an effective transformation from linear to circular economy. The example of Green Sukuk is visible in many countries. Green Sukuk is the Islamic green bonds that are extended to support businesses with environmentally and socially responsible motives. Islamic blended finance, which is the optimal combination of Islamic social funds along with proceeds from penalties due to non-compliance with Shari'ah guidelines is playing significant role as well. Numerous other Islamic financial products such as Qard with profit may also be promoted for the implementation of SDGs as well as a successful shift from linear to circular paradigm. For future research, empirical studies need to be done to better examine the status of the transformation, as well as a comparative analysis of the roles of conventional and Islamic financial systems in the transformation from linear to circular paradigm.

References

- Arpin-Pont, L., Bueno, M. J. M., Gomez, E., & Fenet, H. (2016). Occurrence of PPCPs in the marine environment: A review. *Environmental Science and Pollution Research*, 23, 4978–4991.
- Boulding, K. E. (1966). "The Economics of the Coming Spaceship Earth" (PDF). In H. Jarrett (ed.) *Environmental Quality in a Growing Economy, Resources for the Future*, Johns Hopkins University Press, Baltimore, MD, pp. 3-14.
- Brooks, T. M., Mittermeier, R. A., Da Fonseca, G. A. B., Gerlach, J., Hoffmann, M., Lamoreux, J. F., Mittermeier, C. G., Pilgrim, J. D., and Rodrigues, A. S. L. (2006). Global Biodiversity Conservation Priorities. *Science*, 313, 58–61.

- Butterworth, J., Bleriot, J., Zhu, D., Auken, I., Wijkman, A., Ekins, P., Stahel, W. R., Braungart, M., Lacy, P., Hendricks, B., Braam, G., Van Der Plas, A., & Cramer, J. (2014). Special section: towards a circular economy. *Europe's World Summer (Greener Europe)*, 47–67.
- Di Maio, F. and Rem, P. C. (2015). A robust indicator for promoting circular economy through recycling. *J. Environ. Prot.*, 6, 1095–1104.
- Elia, V., Gnoni, M. G., & Tornese, F. (2017). “Measuring circular economy strategies through index methods: A critical analysis”, *Journal of Cleaner Production*, 142, 2741–2751.
- Esposito, M., Tse, T., & Soufani, K. (2017). Is the Circular Economy a New Fast-Expanding Market?. *Thunderbird International Business Review*, 59(1), 9–14.
- Furness, M., Scholz, I., & Guarin, A. (2012). History repeats? The rise of the new middle classes in the developing world, 1-4 p.
- Gavas, M., Prizzon, A., & Mustapha, S. (2014). TOPIC GUIDE: Blended Finance for Infrastructure and Low Carbon Development, UK: Evidence on Demand.
- Geissdoerfer, M., Savaget, P., Bocken, N. M. P., & Hultink, E. J. (2017). The Circular economy – a new sustainability paradigm. *Journal of Cleaner Production*, 143, 757–768.
- Ghisellini, P., Cialani, C., & Ulgiati, S. (2016). A review on circular economy: the expected transition to a balanced interplay of environmental and economic systems. *Journal of Cleaner Production*, 114, 11–32.
- Goyal, S., Esposito, M., & Kapoor, A. (2018). Circular economy business models in developing economies: Lessons from India on reduce, recycle, and reuse paradigms. *Thunderbird International Business Review*, 60(5), 729–740.
- Hobson, K., & Lynch, N. (2016). Diversifying and de-growing the circular economy: Radical social transformation in a resource-scarce world, 82, 15–25.
- IFSB Report. (2017). Islamic Financial Services Industry Stability Report. Islamic Financial Services Board.
- Jackson, T. (2013). *Material concerns: Pollution, profit and quality of life*. Routledge.
- Jørgensen S., Pedersen L. J. T. (2018). The Circular Rather than the Linear Economy. In: RESTART Sustainable Business Model Innovation. Palgrave Studies in Sustainable Business In Association with Future Earth. Palgrave Macmillan, Cham.
- Kassim, S., & Abdullah, A. (2018). Pushing the frontiers of Islamic finance through socially responsible investment sukuk. Al-Shajarah: Journal of the International Institute of Islamic Thought and Civilization (ISTAC), 187–213. March.
- Khan, T. (2019). Reforming Islamic Finance for Achieving Sustainable Development Goals. *Journal of King Abdulaziz University – Islamic Economics*, 32(1), 3–21.
- Kirchherr, J. Reike, D., & Hekkert, M. (2017). Conceptualizing the circular economy: An analysis of 114 definitions. *Resour. Conserv. Recycl.*, 127, 221–232.
- Kirchherr, J., Hekkert, M., Bour, R., Huibrechtse-Truijens, A., Kostense-Smit, E., & Muller, J. (2017). *Breaking the Barriers to the Circular Economy*; Utrecht University: Utrecht, The Netherlands.
- Korhonen, J., Honkasalo, A., & Seppälä, J. (2018). Circular Economy: The Concept and its Limitations. *Ecological Economics*, 143, 37–46.
- Krausmann, F., Gingrich, S., Eisenmenger, N., Erb, K. H., Haberl, H., & Fischer-Kowalski, M. (2009). Growth in global materials use, GDP and population during the 20th century. *Ecological Economics*, 68(10), 2696–2705.

- Lacy, P., & Rutqvist, J. (2015). *Waste to Wealth: The Circular Economy Advantage*. Palgrave Macmillan UK: Kindle Edition.
- Lewandowski, M. (2016). Designing the business models for circular economy—Towards the conceptual framework. *Sustainability*, 8, 43.
- Luomi, M. (2012a). Qatar's natural sustainability: Plans, perceptions, and pitfalls. Doha: Center for International and Regional Studies, Georgetown University School of Foreign Service in Qatar, Occasional Paper No. 11.
- Millar, N., McLaughlin, E., & Börger, T. (2019). The Circular Economy: Swings and Roundabouts?. *Ecological Economics*, 158, 11–19.
- Pearce, D. W., & Turner, R. K. (1989). *Economics of Natural Resources and the Environment*. Johns Hopkins University Press. ISBN 978-0801839870.
- Raksit, A. (2014). Ahead of the curve - The Circular Economy. London, Corporate Citizenship, 14 p.
- Ranta, V., Aarikka-Stenroos, L., Ritala, P., & Mäkinen, S. J. (2018). Exploring institutional drivers and barriers of the circular economy: A cross-regional comparison of China, the US, and Europe. *Resources, Conservation and Recycling*, 135, 70–82.
- Rees, W. (2010). What's blocking sustainability? Human nature, cognition, and denial. *Sustainability: Science, Practice and Policy*, 6(2), 13–25.
- Reichel, A., De Schoenmakere, M., & Gillabel, J. (2016). Circular Economy in Europe, Developing the Knowledge Base. European Environmental Agency. Report No. 2/2016.
- Repo, P., Anttonen, M., Mykkänen, J., & Lammi, M. (2018). Lack of Congruence between European Citizen Perspectives and Policies on Circular Economy. *Eur. J. Sustain. Dev.*, 7, 249–264.
- Rizos, V., Behrens, A., Van Der Gaast, W., Hofman, E., Ioannou, A., Kafyeke, T., Flamos, A., Rinaldi, R., Papadelis, S., Hirschnitz-Garbers, M., & Topi, C. (2016). Implementation of circular economy business models by small and medium-sized enterprises (SMEs): Barriers and enablers. *Sustainability*, 8, 1212.
- Rizos, V., Tuokko, K., & Behrens, A. (2017). *The Circular Economy: A Review of Definitions, Processes and Impacts*; Centre for European Policy Studies: Brussels, Belgium, 2017; Volume 1.
- Shoaib, A., & Siddiqui, M. A. (2017). Long-run adjustment of size, value, momentum and growth premium in equity returns: Evidence from South Asian emerging markets. *Investment Analysts Journal*, 46, 97–116.
- Slavik, J., Remr, J., & Vejchodská, E. (2018). Relevance of selected measures in transition to a circular economy: The case of the Czech Republic. *Multidisciplinary Journal for Waste Resources and Residues*, 1, 144–154.
- Sørensen, P. B. (2018). From the linear economy to the circular economy: A basic model. *Finanz-Archiv: Zeitschrift für das Gesamte Finanzwesen*, 74(1), 71–87.
- Stahel, W. R., & Reday-Mulvey, G. (1981). *Jobs for Tomorrow: the potential for substituting manpower for energy*, Vantage Press, New York, N.Y. ISBN 533-04799-4.
- The Forum of Young Global Leaders. (2015). Our vision [Online]. https://www3.weforum.org/docs/WEF_YGL16_Annual_Report_2016.pdf.
- Tian, Y. (2018). Optimal policy for attracting FDI: Investment cost subsidy versus tax rate reduction. *International Review of Economics & Finance*, 53, 151–159.
- Tonkonogy, B., Brown, J., Micale, V., Wang, X., & Clark, A. (2018). *Blended Finance in Clean Energy: Experiences and Opportunities*, s.l.: Commission and the Blended Finance Taskforce.
- Towards the Circular Economy: an economic and business rationale for an accelerated transition. Ellen MacArthur Foundation. 2012. p. 24.

- Van Eijk, F. (2015). Barriers & Drivers towards a Circular Economy: Literature Review, Acceleratio: Naarden, The Netherlands, pp. 1–138.
- Wahab, M. Z., & Naim, A. M. (2018). Malaysian Initiatives to Support Sustainable and Responsible Investment (SRI) Especially through Sukuk Approach. *Journal of Emerging Economies & Islamic Research*, 7(3), 44–54.
- Warde, I. (2000). *Islamic Finance in the Global Economy*. Edinburgh University Press.
- Wijkman, A., & Skånberg, K. (2015). *The Circular Economy and Benefits for Society: Jobs and Climate Clear Winners in an Economy Based on Renewable Energy and Resource Efficiency*; Club of Rome: Winterthur, Switzerland, p. 59.
- Yacob, P., Aziz, N. S. B., Makmor, M., & Zin, A. M. (2013). The policies and green practices of Malaysian SMEs. *Global Business and Economics Research Journal*, 2(2).

CHAPTER 2

UNDERSTANDING THE SUSTAINABILITY OF ISLAMIC ECONOMICS VERSUS NEO-CLASSICAL AND KEYNESIAN MODELS

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Abstract

The enduring predicament facing contemporary schools of economics is to reform their theoretico-practical pillars in a way to strike a dynamic trade-off between efficiency and equity at the level of practice, the key precondition of achieving the sustainability of an economic system. Islamic economics has recently resurged as the unique model hypothesized to have an institutional structure for striking the cited trade-off. Against this backdrop, this paper aims first to theoretically investigate this hypothesis. The second aim of the paper is to investigate if Islamic economics could capacitate Muslim nations to achieve the same trade-off at the level of practice. The paper concludes first that Islamic economics merges its idiosyncratic macro and micro economic, political, behavioral, ethical, and socio-cultural institutions in a way to achieve a sustainable economic order in both the short and long run. Second, contemporary Muslims fail in their developmental effort not because Islamic economics does not provide them with necessary institutional infrastructure but because they fail in implementing its theoretical construct in a systemically complementary manner. Ultimately, the paper provides insight into the sustainability of Islamic economics at the level of theory and practice in light of the qualitative and quantitative data coming out of the previous sections.

Keywords: Keynesian economics, neo-classical economics, equity-efficiency tradeoff, sustainability, Islamic economics

1. Introduction

In terms of the endogenous evolution of the Muslim world and its exogenous dialectic with the West, the general conviction is that the level of politico-economic development across the Islamic world was higher than that in Western Europe in the 10th century but that the West caught up with and then dominated the Muslim world by the 17th and 18th centuries (Roberts & Westad, 2003: 333-56; 633-60).

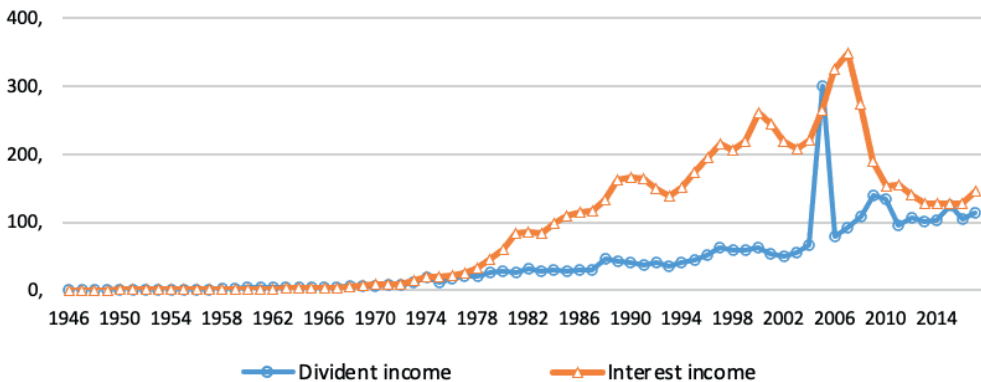
Today, the world economy has been passing through a stage when the orthodox schools of economics and their practices have fallen into a deadlock. No one seems to know how the ongoing stagnation across the world can be overcome and how or whether a new economic order can be established on sustainable pillars. The deadlock is not similar either to the Great Depression of 1929 or to the Great Stagflation of the 1970s. Because there is no clear-cut alternative such as adopting market-led or state-led and organized or disorganized economic systems. On the one hand, the Trump administration, composed of Wall Street bankrupt leaders as dedicated conservatives, raised tariffs and exerted great pressure upon the FED to adopt a growth-driven monetary policy by reducing interest rates. The same administration lifted the re-imposed regulations on the country's financial system during and after the Great Recession and commoditized health services, on the other. This is why Krugman notes that this is 'a strange time' for the science of economics.

In times of crisis, the available options are worth considering, which holds now more than ever. And Islamic economics is hypothesized to have resurged again in such an ambiguous setting. Underlying this hypothesis is that Islamic economics has genuine policy prescriptions to deal with the negative externalities of ongoing stagnation. Against this backdrop, dedicated Muslims take it for granted that Islam's divinely ordained normative unchangeables would spontaneously lead them to the most conciliatory and conflict-free political regime and the most productivist system of economy. The unquestioned critiques of Islamic economics argue that it is already obsolete and there is no room for Muslims to institutionalize and sustain an economic order to substitute for the embedded capitalism.

This paper draws upon the fact that thorough clarification of these contentious theoretical-practical perceptions requires, first, (i) revealing the fallacies of modern schools of economics, second, (ii) examining the theory of Islamic economics with its main institutional stock, and third, (iii) comparing the Muslim nations' performance with this stock. The three sections of the paper aim to achieve these tasks, respectively. The concluding section proceeds to provide insight into the sustainability of Islamic economics at the level of theory and practice in light of the qualitative and quantitative data coming out of the paper's three sections.

2. What Makes Neo-Classical and Keynesian Economics Unsustainable?

The basic commonality of the Keynesian and Neo-classical economics that underlied systemic crises in the 1970s and the late 2000s, respectively, is that they did not have micro-macro economic, institutional, behavioral, and socio-cultural dynamics that complemented each other synchronously in establishing a sustainable system between efficiency, equality, and industrial sophistication or technological advancement. What have out of the *odyssey* of the capitalist order, roughly from the 15th century and specifically from WWII onwards, is that an economic system cannot be sustained (i) without striking a trade-off between efficiency and equality, (ii) without having the necessary institutional order that imposes both liberalizing and regulating constraints on economic and political actors in a way to strike this trade-off, and (iii) without having necessary behavioural dynamics that underlie the optimal conduct of this institutional order. Today's predicament facing modern economies is how to establish an order that would sustain these three building blocks simultaneously. Economic actors like the Trump administration assumes that the enduring crisis is a crisis of practical policy adaptations regardless of the institutional and behavioral dynamics and thus the above noted practical maneuvers implemented under its rule, though inconsistent, would be enough to overcome that. But the enduring stagnation over the last decade has yet to be overwhelmed and there is no promising agenda in that regard.



Source: Federal Reserve (2020)

Figure 1. Interest and Dividend Income Received in Billion \$ by Nonfinancial Corporations in the United States, 1946-2017

For example, the key problem for the sustainability of the American economy before the Great Recession of 2008-2009 was the mounting profitability of financial investments in comparison to non-financial investments. The profitability of financial investments was 127 percent higher than that of the non-financial investments in the years 2002-2006. The same

rate of profitability was only 20 percent in the 1960s (Bakir & Campbell, 2013). This trend predisposed American non-financial firms to use more and more resources to make investments in interest-bearing financial assets, as illustrated in Figure 1, which underlied, inter alia, the declining aggregate demand and deindustrialization from the early 1980s onwards. This challenge has to do not only with the sectoral alignment but also with the behavioral inclinations of American businesses. Neo-classical economics advises private firms to maximize their profits using each opportunity regardless of its consequences on wider economic sustainability.

The Housing Bubble erupted as a result of the irrational exuberance originating with excessive investment in financial assets, which pushed up prices and profitability dramatically until the point when the economic system became unable to ‘finance’ the so-called irrationality. The Bubble caused all private economic actors (households, non-financial and financial firms) not only to lose their accumulated wealth but also to accumulate an immense stock of debt, which depressed the potential growth performance of the country in the long-run (Stiglitz, 2013). The result was an unsustainable economic order between inefficiency, inequality, and deindustrialization.

Keynesian economics emerged in response to similar conditions, which underlay the Housing Bubble, in the aftermath of the Great Depression of 1929. In fact, Keynes suggests a strategy of economic policy geared towards achieving full employment not only by expansionary fiscal and monetary policy but also by directly socializing idle capital to be used for speculative purposes which was an indirect cause of the worsening inequality of income. The Keynesian era roughly from WWII to the Great Stagflation of the 1970s witnessed a better performance in the American economy and elsewhere. However, there are two points, which still exist, that led to the demise of Keynesian economics. The first was the lack of a behavioural code that would refrain policy-makers from using expansionary strategies to favor themselves during political business cycles (Contrary to neo-classical arguments, Keynes does not advise pursuing expansionary strategies after the economy reaches full employment. But this does not change the noted reality).

The second is the lack of micro economic institutions that would underlie the trade-off between efficiency, equality, and technological advancement in private markets. How can we motivate industrial capital owners, who use more and more resources to make financial investments rather than real investments, not to do so for the sake of the sustainability of an economic system? How can we refrain capital owners from paying a much lower real wage far below the productivity of labor? How can we refrain the making of necessary acts by the policy-makers who are financially supported by the so-called capital owners to institutionalize

necessary formal rules and laws in order to enable the capital owners to exploit labor rights? All these questions remained unanswered in Keynesian economics. It is true that the Keynesian era of post-WWII witnessed the establishment of a regulated and growth-driven economic order, and a relatively sustainable level in inequality of income. However, as Keynesian economics does not have the necessary behavioural and institutional codes to make that order sustainable in the long-run, its policy prescriptions turn out to be useless when the practical dynamics of a capitalist order that made the Keynesian era possible change. The fact that the Keynesian policy recipes per se have fallen short of overcoming enduring world-wide stagnation over the last decade is a significant indicator in this regard.

3. What Makes Islamic Economics Sustainable?

The key question is if Islamic economics has the above cited three complementary qualifications necessary for making an economic system sustainable, the understanding of which requires a thorough examination of its institutional construct. Figure 2 illustrates the major institutions of Islamic economics, politics, and society.

In broad strokes, it can be suggested that, as in Keynesian economics and social democratic politics, major social institutions in Islam are predicated on a strategy of demand- constrained, right-based and social welfare-contingent political and economic development. Distinguishing it from the former two is its moral philosophy, as laid out by the Qur'an, the holy book of Muslims that embraces the main principles of an Islamic social order, and the Sunnah, the Prophet Muhammad's way of enforcing the Qur'anic principles. This distinguishing feature originates from the infusion of Islamic ethical and legal values and norms into each formal political and economic institution under the rule of *Tawhid*, the unity of humanity out of the unity of *Allâh* (the unique God for Muslims). It is this unificatory quality of the Tawhid consciousness that underlies the Islamic 'natural social contract'.

The *natural social contract* that unifies Muslims as one society irrespective of their race, status, or nationality is ontologically binding not only for its power of motivation for Muslims to construct the practical means of executing its *raison d'être* but also for its sacredly foreordained power of theoretical regulation based upon the very principle of Tawhid. The best example is that, in Islam, a property owner possesses the functional but not absolute ownership of material welfare such as goods, money, and land. This principle asserts itself in the de facto authority of Allâh over Muslims to enforce their economic transactions under the de jure existence of Islamic norms. The same is the case for the *political and economic sovereignty* that pertains to Allâh in a systemic sense, and Muslims utilise its effectual

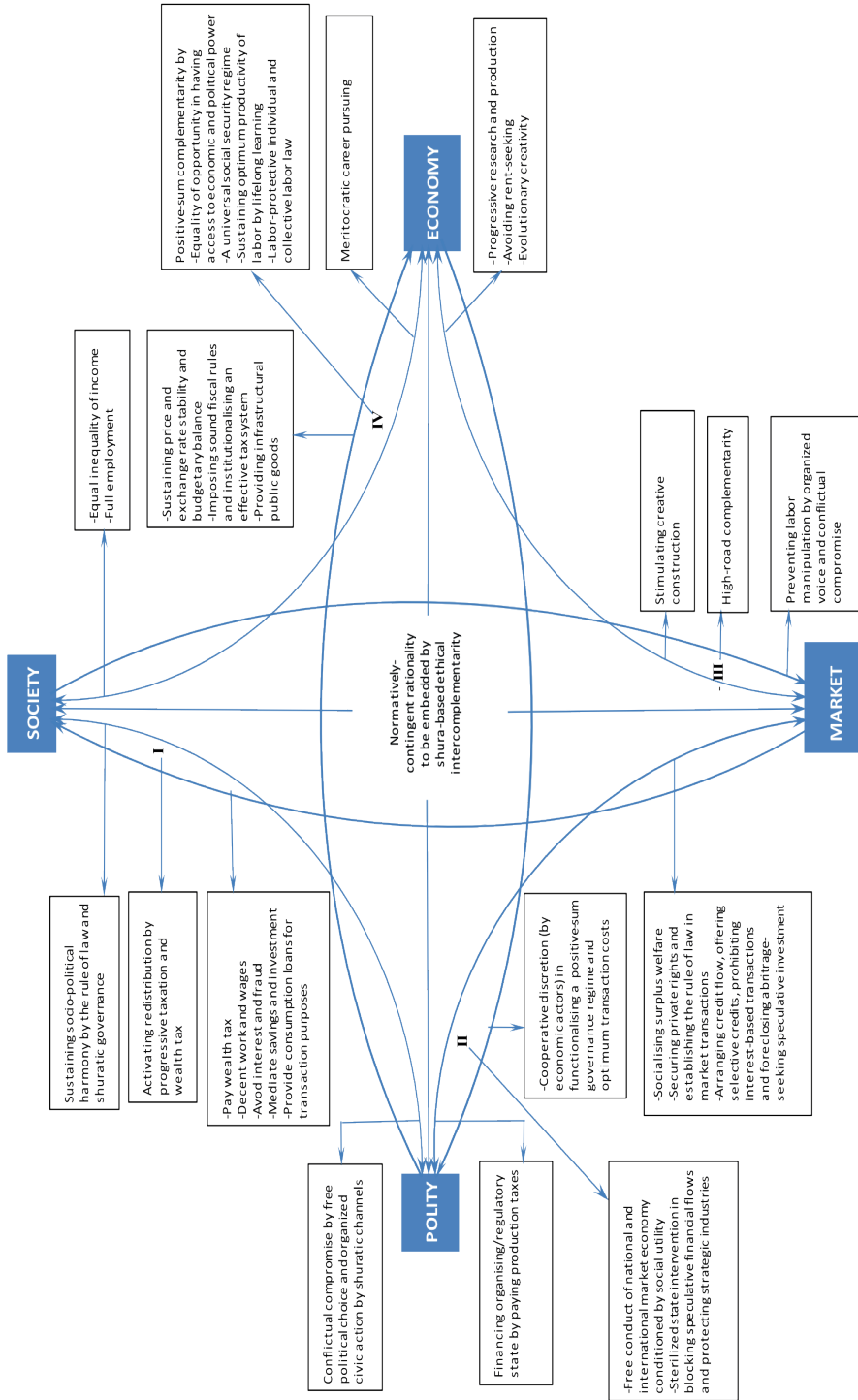


Figure 2. A Typology of Islamic Economics, Politics and Culture

manifestation rather than its absolute essence. These two principles are the key divine constraints on the economic and political discretion of capital owners and political powerholders.

In Figure 2, the cross-institutional interactions between economy, polity, society, and the market in an Islamic order under the cement of the cited social contract can be seen. The arrows indicate the impact of each unit on the others. For example, arrows at the left upper point of the upper left arch indicate the impact of polity on society. Points I, II, III, and IV illustrate the consequence(s) of the combined impact of three intersecting constituents out of the economy, society, polity, and market. ‘I’ shows, for example, the combined impact of economy, polity, and society. In the following, we elaborate on each part of the systemic equations and interactions illustrated in Figure 2.

The Islamic State, Democracy, and Political Governance

There are, inter alia, three constitutive components of an Islamic state: Islamic law (shari’ah), the Muslim community (ummah), and the *Khalifah*, the head of the Muslim community according to the shari’ah. In terms of the interplay between polity and society, the ultimate purpose of an Islamic state is to establish an institutional framework for the unity, harmony, and cooperation of Muslims over a certain territory. Its existence is not an end in itself but a means for the execution of a just and equal order, the *Shari’ah*, the forestalling of injustice and unfair practices, and the establishment of freedom and dignity among human beings (Asad, 1991: 30-3).

For the embodiment of a genuine ‘Islamic’ state, therefore, there should be “a precise body of laws which would outline, however broadly, the whole sphere of human life in all its aspects - spiritual, physical, individual, social, economic, and political” according to Islamic premises. For establishing and sustaining this order, it is a compulsory task for the *Khalifah*, as stipulated by the Qur’ân, to consult with the community, the shura, on their major actions (Turabi, 1983: 242). *Shura* is defined as “the mutual advice through mutual discussions on an equal footing” in the Qur’ânic approach (Rahman, 1986: 92-93). The fundamental principle is that all Muslims are equal in making collective decisions that interest their mutual affairs (Maududi, 1986: 39-42). *Shura* is a systemically constitutive institution in Islam insofar as it is stipulated that all social interactions at group levels, from the family to political decisions, should primarily be settled by consultation. On the basis of this governance-theoretic structuration, it is popular consent and free choice that underlie Islamic politics and require that Islamic governments be formed on the basis of election even though the institutional grounds and the style of electoral politics is not tantamount to a democratic regime in the fullest meaning of the word.

In Islamic politics, the conflict between the caliph, his bureaucracy, and the citizens are first referred to the judiciary for adjudication. If the dispute cannot be resolved in this way, “Muslim community or any of its members is entitled to rebel against the erring khalifah or to replace him by another (imam)” (Iqbal, 1986: 13). “Nobody should be obeyed in disobedience to God”, said Umar. It is popular consent and free choice that underlie Islamic political interaction and require that Islamic government be formed on an election basis (Asad, 1991: 36). However, its institutional grounds and the style of Islamic electoral politics is not tantamount to a democratic regime in the fullest meaning of the word. On the one hand, if the key principles of democracy are majority rule, free and fair elections and the accountability of the rulers to the ruled with the complementary role of the basic principles of individual liberty, privacy, freedom of expression and association, and freedom of voting and contesting, then Islam conforms to democratic elections (Al-Jabri, 2009). On the other hand, it is at odds with the Islamic political system in that contemporary democracy resides in the ideas of enlightenment tradition, secularism, norm-free rationalism, and the *sovereignty* of society as an ultimate end in itself (Enayat, 1986: 125-30; Moten, 2000).

In Islam, the sovereignty is stipulated to rest with Allâh, and democracy is for the election of rulers to enforce the practical means of establishing Allâh’s sovereignty on the earth. Put differently, the core of Islamic democracy is that all Muslims are the vicegerents of Allâh on earth and are collectively responsible for the execution of Shari’ah systemically (Esposito, 1991: 4). Democracy is thus a means for this end, not for an end in itself. The actions of voting and being voted should be carried out to serve this ultimate purpose, not necessarily to elect the best rulers to procure the highest material welfare to their voters. First and foremost, as noted above, in Islam, it is Allâh’s unity that constitutes the spiritual basis of political coherence between Muslims. Without being predicated upon this unificatory power, it is presumed that inter-human relationships can in no way give life to a peaceful and a stable coexistence, and therefore, a substantive democracy cannot be inaugurated.

The Ethics and the Basics of Islamic Economic Action

As a sub-section of Islamic social organisation, Islamic economics is rooted in the evolution of material advancement under the auspices of a normative background that furnishes market actors with the source of spiritual regulation, the (business) ethics (Beekun, 2006). Without the constraining role of this ethical background, economic progress loses its meaning. Because Islamic ethics, whose core constituent is *taqwa*, is both the prime determinant of distributive equity and economic efficiency, two main institutions underlying Islamic economic action, and the delicate productivist and egalitarian balances between them

(Naqvi, 1981: 91-94; Choudry, 1992: 138). In Islam, ethics is not linearly static but is an evolutionarily dynamic institution that calls for seamless and stable integration with the practical conduct of society. In conjunction with ethics, the value in Islamic economics is “a commodity, product, or service that is bought and sold in the market which Islam holds up as a sanctified system for the realisation of human freedom and the Godly Laws” (Choudry, 1992: 107).

Ethics makes up the normative implication of economic value and determines the long-term sustainability of Islamic optimum in economics. As in institutional and Keynesian economics, the social optimum in Islam is the co-establishment and co-sustenance of efficiency and equity. The divergence point of Islam is that this optimum should be provided with the aim of realising the *maqâsid*, the purposes. According to al-Ghazâli, the *maqâsid* exists, in essence, to promote the well-being of both Muslims and non-Muslims and consist of safeguarding the faith (*din*), the human self (*nafs*), the intellect (*‘akl*), posterity (*nasl*), and the wealth (*mâl*) (Chapra, 2000: 116-118). At the level of macro-economy, the *maqâsid* become a prerequisite for the realisation of the full employment of production factors without breaking social optimum and harmony, the moral fibre of society. Under the confines of *maqâsid*, the baseline of the Islamic social optimum is the production and distribution of goods and services to adequately meet the needs of all individuals and the structuration of an equitable distribution of income and wealth without weakening the motivation to work, save and invest. Thus, in Islam, market unoptimum does not merely consist of classic market imperfections or failures but also embraces the decay and evanescence of normative pillars or ethical principles.

The fountain of Islamic ethics is, as in the other areas of PE, the Revelation and its practice by the Prophet Muhammad that set the stage for right and wrong, desirable and undesirable, just and unjust. The touchstone of the Qur’ân and the Sunnah in terms of economics is that Allâh has endowed and will always endow adequate resource for sustenance of a decent life. Islamic decency in economic terms requires people not to seclude themselves from the market and live for ‘a bite of food and a cloak’ but to demand, to supply and to consume respective of mutual social needs with the consciousness of cooperation and sharing. In this sense, key economic institutions such as production, trade, commerce, profits, consumption, and exchange are not denied but constrained by *social utility*.

Free Markets and Regulatory Constraints in an Islamic Order

Islam, in principle, can be suggested to assume a market-oriented economic circulation. However, in Islam, it is assumed that in the case of the evanescence of the above noted ethical constraints, humankind, Muslims or non-Muslims, is prone to committing injustice and behaving non-optimally. Ibn-i Khaldun (1967 [1375]: V, 14) argues that a businessman ‘must’ enter into disputes, be clever, engage in constant quarrelling, and have great persistence. These qualities are, in fact, detrimental to the spiritual consistency of a human soul and pose a challenge upon it to detract from the good qualities. Thus, human interaction upon pecuniary means would spark off injustice and aggressiveness, which results in dissension, hostility, bloodshed, and loss of life. As a result, there should be a power to restrain their conflict-ridden interactions: their ruler or the government. It is within this context that an Islamic government is equipped with the role of building up an effective network of checks and balances over market exchanges and rewards and penalties for clearing market imperfections and determining the priorities in the employment of scarce resources. The Islamic state’s regulatory role entails establishing organising institutions for inter-individual, inter-family, and inter-group actions in cultural, political, economic, or international realms. First and foremost, the Islamic state should institutionalise a universal welfare state regime to provide social services to all citizens regardless of their status and class. Specifically, it is the social regulatory body, ‘al-hisbah’, that executes the inspection function to forestall or hinder imperfect competition, speculation, damping, and hoarding. This task is an ecclesiastical duty rooted in the main Islamic principle of ‘to command to do good and forbid to do evil’ (Ibn-i Khaldun, 1967[1375]: III, 28).

This regulatory function of an Islamic state does not contain the production of social goods. It can take part in ‘*mudaraba*’ with private entrepreneurs but principally would not be the ultimate owner of productive enterprises apart from strategic sectors such as natural resources, oil fields, gas mines, defence, and industry (Siddiqi, 1996: 68-70). According to Ibn-i Khaldun (IV: 16), capitalists need rank and protection to be executed by political authority with its soldiers and policemen. In addition to providing this safeguard, an Islamic state is responsible for imposing constraints on private property to ward off its prospective risks from passing into social risks and thereby wasting social opportunities at the altar of creating private ones. In this context, the positive and negative rights of property owners in Islam can be suggested to utilise the advantages of their property to the fullest extent without adversely affecting the interests of the community, to pay Zakât, to spend ‘in the way of Allâh’, to abstain from taking interest and to avoid fraud in business dealings, hoarding, and monopoly. An Islamic government, in this respect, should centrally impose Zakat as a wealth

tax upon the wealthy, prohibit interest-based transactions, make regulations to inhibit market imperfections (e.g., speculation and monopoly), and institutionalise a strict auditing mechanism over market transactions.

In compliance with the national economic postulates, the main objectives of Islamic international economic conduct are to ensure justice and equity among the nations and to give priority to need fulfilment under the rules imposed by Shari'ah. Thus, economic relations between Muslim countries should be aimed at engendering an intercomplementary distribution of production factors and positive external economies from the mutual non-interest financial cooperation to the development of common research projects, particularly on technical know-how. Muslim countries, expectedly, should avert exorbitant pricing, dumping, the exploitation of urgent needs, the withholding of supplies of basic goods and services for creating an international black market and market imperfections (Siddiqi, 1996: 97-120). In the event of a unilateral violation of fair competition, on the condition of reciprocity, Islamic nations do have the right to make retaliating regulations to protect their own rights.

Islam predicates, in principle, the free conduct of economic transactions and free flow of exchange rates under supply and demand conditions unless there is a need for intervention. The state's intervention should aim only to protect and promote the public interest, *maslaha*. In practice, it could not be locked in a pure floating or fixed regime for an Islamic country that gives a persistent balance of payment deficits because in the case of fixed regime, it would not adapt economic transactions to change export-import prices and manage the swiftly changing production costs and price arrangements. In the second case, the floating exchange regime, its financial vulnerability necessitates a prudent protection policy against the arbitrage-seeking incursions of speculative finance. Therefore, in some practical cases, the state should have an interventionist position, the preferable policy choices of which are restrictions on trade through tariffs, quotas, *etc.*; restrictions on speculative financial flows or on portfolio and foreign direct investments; the protection of home (infant) industries on the condition of not feeding competitive imperfections; restrictions on the movement of labour, and pre-emptive measures on 'brain drain' and immigration policies. In other words, in Islamic economics, a state could and, in fact, should take necessary measures concerning each constituent of international commercial and financial relations. Under ordinary circumstances, however, except speculative or imperfect transactions, all productive portfolio, capital, or direct investment is promoted, ranging from foreign equity participation, leasing arrangements, borrowing and lending abroad, multinational banking, the free convertibility of currency, foreign aid, technology transfer, and economic and customs unions (Siddiqi, 1992).

Micro and Macroeconomic Finance in Islam between Production and Distribution

In parallel with its constrained role of direct intervention in productive activities, in macroeconomic policy, an Islamic government is expected to abide by a balanced, even surplus, budget and to utilise its reserves to, e.g., maintain exchange rate stability and pay off loans and defence financing (Chapra, 1986: 190-91; Haq, 1996: 167-70). Other complementary objectives of Islamic fiscal policy are to bring surplus welfare into economic circulation, to prevent it from becoming a source of speculation and an ensuing economic recession, and to create a balanced distribution of income. The main strategies are placing fiscal austerity as the driving force of public finance, putting sound fiscal rules for capital expenditures, prioritising the disbursement of liabilities in expenditure plans, and institutionalising a sound tax system that could not be substituted by inflation or by borrowing and should be the principle source of public expenditures. In addition, the state is responsible for stimulating a private sector-led market economy by establishing the rule of law and securing property rights, for conducting infrastructural projects through profit-and-loss sharing methodology to be run under the user-pay-principle, and for enhancing the savings of the household, small business runners, farmers *etc.*

In the area of deficit financing, various viewpoints exist in Islamic economics. The Prophet Muhammad, during his reign, in principle, borrowed on an interest-free basis in both cash and in kind for public purposes, such as repaying maturing loans, fulfilling the basic needs of needy people, and strengthening the defensive power. Thanks to the substantial balance in public finances in his aftermath, the first four caliphs did not resort to deficit financing. In view of this practice, some Muslim scholars, such as Abu Yala al-Farra (990-1066) and Al-Mawardi (974-1058), prudently argue that deficit financing should be a last resort considering that governments may fail to pay off loans or impose extra taxation. Instead, contemporary Muslim scholars, by the way of *ijtihad*, put forward that asset-based debt is permissible to finance public expenditure based on leasing and partnership. Alternatives are the zero rate debt, profit and loss sharing arrangements, and monetary finance (Islahi, 2005 cited in Iqbal & Lewis, 2009: 190-195).

Mannan (1983: 333), argues that there is no harm in deficit financing in Islam. His ground is twofold. First, in an Islamic state, the borrowed funds are bound to be expended for the stimulation of a productive economy, investment infrastructure, and social expenditures. Thus, these funds will be reoriented into the real economy with a multiplier effect. Second, in an Islamic system, the lenders, mostly the banking system, cannot create a speculative financial system based on reselling governmental bonds with an interest burden on the stock

market. Mannan (1983: 317-23) further claims that even interest-bearer borrowing would be initiated for development purposes on the condition of being expended under the systemic principles of Islamic interest-free budgeting. In fact, according to him, in view of the current situation of Muslim countries, deficit financing is a must in the praxis for amassing the capital stock requisite for politico-economic development, even though the Islamic banking system is currently on a quick path of development.

In regard to the micro financial regime, instead of a mediating speculative finance, the primary function of Islamic banking is stipulated to collect the savings of households at profit-and-loss sharing accounts and then to transmit them to industrial or commercial entrepreneurs by the institution of ‘mudaraba’ in parallel with an Islamic development model. In doing so, Islamic banks must audit the verifiability and feasibility of the projects to be financed. Therefore, the system revolves around the financing experience of the bank and the investment experience of entrepreneurs. Another major function of these banks is to provide consumption loans to households on the principle of ‘murabaha’. These loans are necessary because households might not be self-sufficient and may need food, shelter, and clothing for their bare subsistence. Underlying murabaha is financing an economic *transaction* rather than giving a cash loan, which aims to enhance the utilisation of loans for productive activities and prevent the utilisation of these loans for speculative purposes (Ayub, 2007: 213-33).

As a corollary of the real investment-focused financial system of Islamic economics, there is derived a venture capital institution of investment financing between capital-suppliers and entrepreneurs, the *mudarabah*. Industrial, commercial, and agricultural enterprises can be established and operated under this mode of financing. The income resulting from these enterprises can be shared in varying proportion among capitalists and entrepreneurs after deducting all the legitimate expenses of enterprises during the relevant period. Under an economic structure where speculative initiatives are inhibited, mudarabah becomes a structural source of finance for productive projects, an automatic stabiliser and a redistributive mechanism by providing fundless entrepreneurs with the equal opportunity to invest. In other words, it is a mode of production and a source of resource allocation and income distribution in product and labour markets, respectively (Ebu Suud, 1988).

In Islam, another policy parameter for a fairer distribution of income is progressive taxation, whose main principle, as suggested by Abu Yusuf, is to collect from the wealthy and to spend on the poor. The taxes should be levied in proportion to the income of the taxpayer. The upper limit of progressive taxation on surplus welfare is not to set back the productive power of taxpayers (Maudoodi, 1963: 699). The Qur’ân (9: 61) says: “The Zakât [i.e., taxes

coming from Muslims] is intended nothing otherwise than for the Muslim poor [fuqarâ], the poor among the resident aliens [masâkin] [...] for aiding those heavily indebted, in the Path of God, and for the wayfarer". The Prophet Muhammad articulates that "It [Zakât] is to be taken from the rich among them and given to the poor" (Al-Bukhâri, 9/93/469; the volume, book, and the number of hadith, respectively). With this background, in terms of public expenditure, various principles of taxation can be suggested, including the benefit principle, as Abu Yusuf put forward, for the public provision of private and quasi-public goods; for redistribution, the Zakat; for the provision of pure public goods (general budget), and the ability-to-pay rule (proportionate or progressive) (Iqbal and Lewis, 2009: 119-120). The redistributive aspect of Islamic taxation lies in the Qur'ânic principles that "the poor have a right in the wealth of the rich [...] in order that it [wealth] may not merely make a circuit between the wealthy among you" (70: 25; 59: 7).

The principal tax in Islam is Zakat, the wealth tax. It is levied on the accumulated wealth and incomes (including liquid ones) of individual Muslim adults and businesses in general at a rate of two and a half per cent and is collected based on the incomes above the minimum exemptible level, *the nisâb*. The underlying reason for Zakat on business incomes is that they are used basically in two ways under an Islamically-organised economic system: by the reinvestment of retained incomes and dividend allocation among the shareholders. The former is not zakated; only the net profit shares are zakated to pave the way for the full employment of productive assets by putting the surplus value into reinvestment as a structural source of Islamic venture capital or into the general budget as a source of redistribution. In Islamic economics, there are three parties that share the economic wealth produced at a certain period of time: workers, entrepreneurs and capital-suppliers, and the community. Zakat is the share of the last. In this sense, for its redistributive aspect, Zakat can be suggested to be a social savings or transfer for transaction purposes that socialises idle resources (Haq, 1996: 178-98).

A strategic intercomplementarity exists between Zakat, mudaraba, and the abolition of interest. Zakat is a demand-stimulus and an income-multiplier institution that, in the absence of interest-based financial transactions, socialises idle financial resources and thwarts the non-optimal accumulation of wealth in the hands of the rich. The rate and composition of classical zakatable items substantiate this perspective. Its rate, albeit changing according to various Muslim jurists, is twenty per cent for mineral production and treasure troves, five to ten per cent for agricultural products, and two and a half per cent for livestock, trade, industry, cash, gold, silver, jewellery, rents, and wages. Systemically relevant is the existence of a

consensus, *ijma*, on the levying of Zakat on “only liquid wealth [cash, bank deposits, pension assets, etc.], ornaments, and precious metals (that is stores of non-productive capital). Owner-occupied housing, clothes, and consumer durables, *etc.* are exempted” (Iqbal and Lewis, 2009: 102). It is principally utilised to finance the social welfare and social security expenditures and schemes that include poor houses, centres for free medical treatment, educational facilities, and cash and in-kind relief to the needy. In its moral dimension, Zakat aims to optimise and restrain the greed and avarice of the rich and to compel them to carry out their social responsibility under a formal binding but not a voluntary constraint. It is both a micro and a macro variable that stabilises consumption, production, employment and labour force participation (Choudry, 1992: 48-57). Zakat’s bindingness is such that a state and a person can in no way be entitled ‘Islamic’ or ‘Muslim’, respectively, without effectively enforcing or paying off Zakat.

Riba, interest, refers to all types of excesses or pre-fixed prices over borrowed capital, whether it is called usury interest or the earning of the capital. It is inhibited with the most severe punishments for both spiritual and technical reasons. The spiritual ground is that Muslims who make interest-bearing transactions do transgress the social justice-first manifesto of the Islamic paradigm, thereby breaking down the constitutive thread of inter-Muslim solidarity, *the taqwa* (Naqwi, 1981: 109-120). The main technical reason is that in Islamic economics, there would in no way be a productive return on ‘idle savings’. Interest on bank deposits brings, for example, fixed interest that is not contingent on any risk or loss whatsoever because it is the entrepreneurs as the risk-bearing economic actors but not the savers hoarding money for speculative purposes who are the catalyst of economic growth and development. Interest turns into a burden over the consumers because it is reflected upon the product prices and reduces the marginal propensity to invest. Mannan (1983: 160-61) remarks that Keynes, rightfully, held the view that it is the level of income rather than the rate of interest that ensures an inter-reinforcing linkage between savings and employment and thereby rejected the equal dependency of savings and investment. Furthermore, savings for transactional and prudential purposes depend not on interest but on investment and employment.

In Islamic economics, it is assumed that by diminishing the marginal efficiency of investment and aggregate demands, the interest extinguishes social opportunities and becomes a direct ‘social transfer’ from the assetless to the capital owners. In another respect, the interest melts down and suppresses the productive transformation of an institutional structure and entrepreneurial skills of the labour force, employees or employers, due to the

prevention of the socialisation of idle money from being circulated into real investment, thereby persistently promoting underemployment and forestalling full employment (Chapra, 2006). As far as the political implications of this vicious circle is concerned, the distribution of socio-political welfare becomes increasingly more unequal, and consequently, the structural inequality of income turns into the *enzyme* of ‘class formation’ across nations. Capital owners infuse into each channel of power networks by establishing intimate financial and patronage channels with local or central political authorities. This substantial power enables them to reciprocate political authorities with tax evasion, hoarding, black marketing, smuggling, and adulterating products including the necessities of life (Mannan, 1983; 157-68). The institutional network passes through power, patronage, and prestige channels. Because the lower strata is far from these channels, their progression would be expected to be far laggard. In Islam, it is a basic principle that superiority is measured merely by ‘*taqwa*’, the theoretical and practical fidelity of Muslims to Quranic principles, but not by wealth and power. Because interest is the prime institution with the potential to turn this balance upside down, it is eradicated systemically in the Islamic lifeworld.

Social versus Economic: The Islamic Strategy of Development

From a critical standpoint, Ahmad (1979) argues that the Muslim world consists of economically underdeveloped, albeit resource-rich, countries that underutilise their human and capital stocks and govern them inefficiently and unequally, resulting in the embedding of poverty, stagnation, backwardness, and imbalanced sectoral and regional development. Economic development in Islamic countries, to him, has become the primary target of governmental action, at the altar of which everything else has been sacrificed, e.g., Islamic values, cultural patterns, social and ethical norms, and traditional customs. The development plans of Muslim countries have been modelled utilising the prototypes of Western theory and practices under the auspices of international diplomacy, economic pressurisation, intellectual infiltration and the guidance of international organisations. A strategy of Islamic development could in no way be imitated from western models in terms of the systemic coherence of its material and immaterial institutional interactions, ranging from the motivation of increasing the marginal propensity to invest to the allocation of wealth among the factors of production. In terms of macro institutions, according to Ahmad, an Islamic development strategy should be predicated on fine-tuning the co-existential evolution of the moral, spiritual, and material aspects of socio-economic and political resources. This entails adapting a value-oriented goal pursuance in the long run. He emphasises that “the moral and the material, the economic and the social, the spiritual and the physical are inseparable” (Ahmad, 1979: 13).

Welfare in Islam is inter-complementarily both an earthly and an extra-celestial phenomenon. In Islamic economics, in this regard, development is the development of, primarily, man and then his/her physical and socio-cultural environment. This brings the social implications of political steering and economic efficiency to the forefront in the short and long run from industrial incentives to the deployment of human resources. The aggregative development models regarding the maximisation of the material growth rate as the sole index of growth are renounced in Islamic economics, even though Muslim economists put a particular emphasis on prioritising a technological know-how-centred strategy of development for Muslim countries to take a powerful place in the international division of labour and to do away with persistent balance of payment deficits.

Principally, the equitable distribution of income is assumed to be the main structural performance of Islamic developmentalism. The main policy choices for this purpose are (i) land reforms and rural development to eradicate the exploitation of tenant-farmers and rural labourers by landlords and money-lenders by means of setting a ceiling on the maximum size of landholdings, allocating arable lands to landless peasants, and distributing the surplus equitably among landless peasants, (ii) the subsidising of the foundation of small and micro enterprises in urban areas to stimulate entrepreneurs that do not have sufficient capital to make investments, thereby creating an equal social opportunity to have access to economic and political power, and (iii) the efficient implementation of Zakâh and the Islamic inheritance tax. In congruence with the symbiotic evolution of qualitative and quantitative variables in an Islamic development model, a structural alleviation of the unequal distribution of income is likely to be executed only through a fully-fledged economic restructuring ranging from private consumption and government finances to capital formation and production. Among them, for example, an essential one is the change in consumer preferences from luxury to necessities (including comforts) to increase the ratio of investable funds and forestall the balance of payment imbalances (Luxury refers to the ‘all those goods and services which make no real difference in a person’s well-being and are demanded primarily for their snob appeal [Chapra, 1993: 85-115]).

The most optimal strategy for this purpose is the embodiment or activation of a moral filter as a constraint on luxuries, ostentatious ceremonies, unrealistic dowries, and the display of status symbols. Another fundamental restructuring is the reformation of public finances deployed for development purposes. Despite not carrying out a structural transformation of the necessary infrastructure for qualified education, efficient health and social security systems, housing, public transport systems, *etc.*, the unsystemic and unplanned expenditure

by public authorities leads up to persistent fiscal deficits, the balance of payment imbalances, and financial vulnerabilities with slow and unsteady growth rates. Moreover, the pursuance of power and prestige by conspicuous consumption brings on a corrupted institutional network in the public sector, an inefficient taxation strategy based on narrow tax bases, and an inevitable rise in indirect taxes.

Four broad principles of public spending should be adapted for sustainable and productive Islamic development: (i) Its ultimate purpose should be to procure the well-being of entire public, (ii) The elimination of hardships must be prioritised over the provision of comfort, (iii) The well-being and interest of the majority should be set over those of the minority, and (iv) The beneficent should incur the cost of the benefit he/she utilises. Considering these principles, the execution of a balanced development between material and spiritual components requires a systemic planning as a middle road between planning by direction and planning by inducement. The guidance of the public sector and its dynamic cooperation with the private sector would be operationalised under a multilateral *shuratic* institutionalisation at the level of enterprise, sector or macro-economy. In Islam, in contemporary terms, thus, a spiritually-conditioned economic and industrial democracy is not a preference but a compulsory structural nexus for the effective, equal, and sustainable allocation of factors of production and income in industrial, commercial, or agricultural sectors. This is because the functionalisation of a ‘moral filter’, the unique cement of material and spiritual components of Islamic developmentalism, calls for the cooperation, co-sharing, and co-participation between the actors of development process. In this sense, beyond the above-noted *formal* regulatory role of an Islamic state in the organisation of private economic action, the moral filter, in essence, aims to strike an *informal trade-off* between constraints and the liberties of excess claims through inducing a mutual auditing not only between the market actors but also between market players, political actors and the labourers on the basis of social priorities. The backbone of this auditing is the minimisation of the conspicuous consumption of political power and capital owners. Islam’s precondition of the ‘modest lifestyle’ entails foreclosing the extravagance or the inefficient consumption of human or capital resources for ostentation or prestige purposes. As a result, the moral filter by mutual auditing is expected to moderate and humanise the interlinkages between wealth and power by prioritising the social benefit over the individual one. The key principle of Islamic developmentalism between individualism and collectivism, in this respect, is ‘serving social interest equals to serving self-interest’. This principle does not prevent individuals from serving their self-interest but stimulate them to act socially responsibly by giving self-interest a spiritual, long-term perspective as a result

of extending its span beyond this life (Chapra, 1993: 60-1). Furthermore, the co-existential evolution of self and social interests is thought to be the major source of necessary funds for sustainable development. Underlying is the incremental accumulation of private savings through the prohibition of luxury consumption on imports, extravagance, sumptuous ceremonials, and the increase of public savings through progressive taxation, a method that directly cultivates extra resources accruing from the high income.

In terms of the power basis of economic development, it is presumed that de jure, the collective responsibility of Muslims to Allâh in implementing and sustaining a fair development process can be carried out through establishing formal institutions for mutual auditing, such as industrial and economic councils that will induce them to carry out its de facto requirements. Choudry (1992: 259-61), for example, proposes a shura-oriented information management between micro and macro actors, which would help to do away with market and bureaucratic imperfections. A ‘grand shura’ such as an economic and social council, to him, would coordinate the flow of politico-economic processes, set priorities for allocating social resources, and steer the intersectional consequences of economic units. Otherwise, market competition does not have any power to compel its actors to comply with the rules of fair competition under capitalist political economies where the distribution of economic and political power could not be or in fact is not claimed to be fair by its very proponents.

The Islamic Social Welfare: Equality of Opportunity or Outcomes?

Through the discussion until now, it has become obvious that Islam predicates its economic order on social equity-first institutionalisation, as is stipulated by the Qur’ân straightforwardly. In fact, the prioritisation of social welfare is a strategic means of social cohesion and harmony proactively and sustainably based on the institutionalisation of a universal social security system, decent work and decent conditions of living, the freedom of profession, the right to organise and strike, and the right to industrial and economic democracy. In Islam, however, surplus value is not prohibited. It is defined as the earnings of a factor in excess of the minimum amount sufficient for that factor to maintain its existence and function. In the Qur’ân, it is the meritocracy-based differentiation due to multiplicity of human motives and sentiments in acquiring intellectual capacity, physical strength, habits of thinking, willingness and doing that should constitute the material status or income of Muslims (Mannan, 1983: 58-59).

However, again in the Qur’ân, it is frequently underlined that human beings are prone to using their material power to suppress others individually or collectively. This results in the

inapplicability in the equality of opportunity per se. As a buffer mechanism, a state is hence expected to create and keep the resources in the public budget afloat for prospective social policy purposes, such as developing poverty alleviation programmes and meeting the basic needs of all citizens. Fiscal policy, as noted above, primarily aims to redistribute national income in such a way as to give precedence to the needy. In addition, an Islamic state should, if necessary, allocate additional resources from the general budget to finance the social expenditures that Zakat funds fall short of meeting (Ahmad, 1991: 52). Monetary policy, too, should be geared towards the functionalisation of an optimum allocation of wealth through establishing price stability as a precondition for the prevention of income loss of the waged and the salaried, the elimination of speculative transactions, the promotion of full employment and sustainable development, the regulation of the banking system in such a way as to enhance the equality of opportunity to have access to investment capital and credit.

In parallel, Mannan (1983: 358-9) suggests that an Islamic state should devise a universal social security scheme that covers the entire lifetime of its citizens, as in the case of England, on the condition that the social security funds not be managed in interest-bearing financial transactions or undertakings. Instead, they should be channelled into *mudarabah* or be invested in Islamic banks or other credit institutions. Although he suggests that insurance against death might be left to the private sector, he emphasises that the insurance of old age, unemployment, sickness, and injury should be organised and financed by the state nationally. In Islam, in addition to the state, civil society organisations are encouraged to undertake the civic responsibility of social justice. The widespread institutionalised form of this responsibility is the *waqf*, an endowment established in the way of setting aside certain assets, such as land and buildings, to fulfil various social services under a legal deed (Dallal, 2004). The informal institutions for this purpose are *infâq* (voluntary spending), *ihsân* (benevolence), *sadaqah* (charity), and *it'am* (feeding). The protection and feeding of the needy, such as orphans and the destitute, are firmly reiterated in the Qur'ân to the extent that the avoidance or misapplication of it has been accentuated to be equal to the denial of the religion itself (Ahmad, 1991: 42) because it is believed that poverty is such a calamity that it can drive a person to disbelief, as Prophet Muhammad put it.

In a nutshell, Islamic economics can be suggested to be structured upon the creation of a workable mutuality between efficiency and equality through the functionalising of a positive-sum complementarity among the factors of production under a free-market environment conditioned by the state's organising intervention. And the basic cement of these interconnected objectives is an normatively-contingent rationality to be embedded by

shura-based ethical intercomplementarity among the actions of individual and organised political and economic actors.

4. What Makes Contemporary Muslim Nations' Economies Unsustainable?

This sub-section aims to examine the institutional stock of the high-income Gulf States. The Gulf states have been the *mecca* of an Islamic way of life due to not only its widespread everyday practice by the public but also its identificational impact, albeit manipulative, over the political authorities and the codification of law systems across the region since the dawn of Islam in the 7th and 8th centuries. In addition, these countries are the only high-income countries whose population consists overwhelmingly of Muslims, apart from Brunei, in the World Bank's classification, which is of significance in understanding the collective action of capital-rich Muslims during a period of path-dependent change.

Figure 3 illustrates the main institutional interactions among economy, politics, market, and society in the Gulf countries. In this sub-section, instead of delving into the context-specific nature of each institution shown in Figure 3, I concentrate on the overall systemic impact of their interactional implications. Table 1 documents the basic national and international macroeconomic and social indicators in these countries. Where data are scarce, I give the average of one or two decades under the headings of average 1980s and 1990s, 1990s or 2000s.

Despite munitias in the architecture of legislative and executive bodies in the Gulf states, the prevalent praxis is that the ruling Emir, Sultan or King governs the country with a consultative or advisory council or a council of ministers that he can appoint, suspend, dissolve, or change. In the case of national assemblies or bicameral legislatures, as in Bahrain, Kuwait, and Oman, the ruler is predisposed to contain the council, whose members are appointed by himself, and to manipulate the electoral law to prevent the oppositional groups from acquiring a majority in the selected councils. This situation is why turnout rates revolve around, in most cases, not more than fifty percent. The lack of vigorous judiciary or subversive civic movements to structurally constrain these autocratic discretions consolidates the systemic power of political monopolies (Delury & Kaple, 2006).

In fact, in the region, a noticeable number of civic associations exist, albeit with small membership, acting in the areas that concern, for example, charity and the promotion of individual religious consciousness (Niblock, 2006). However, they are inhibited from voicing political or human rights issues. Thus, under ordinary circumstances, the opposing ethnic, sectarian, civic or political groups, if any, are not the de facto alternative for the ruling

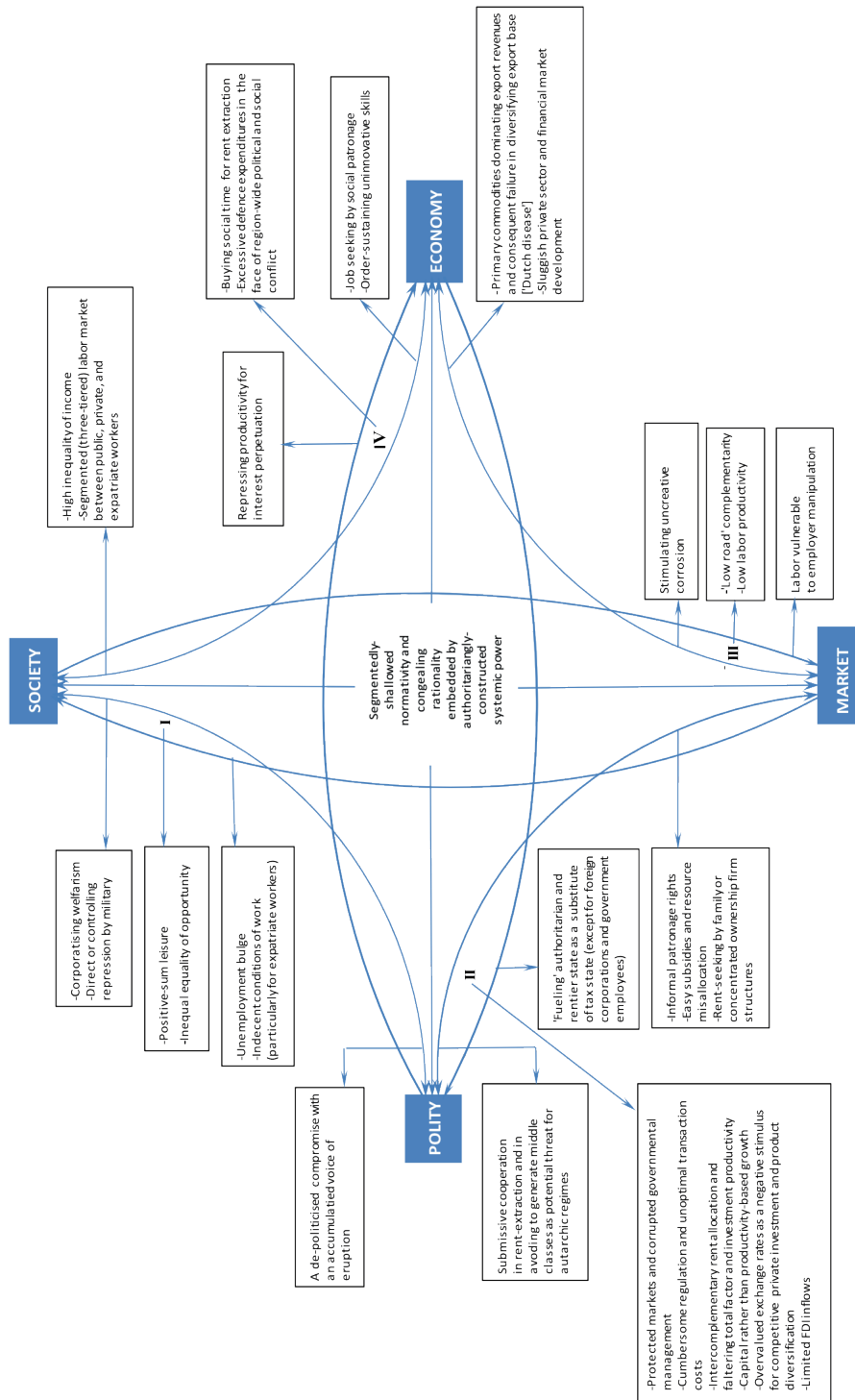


Figure 3. A Typology of Economics, Politics, Culture in the Gulf States

families but are spontaneous voicers of urgent socio-economic demands on sharing economic surplus, such as the Shia minority in Saudi Arabia or rival tribes in Qatar. An underlying factor is that these diverse civic or political groupings fall short of cultivating the power to shift the route of economic rents that the ruling political monopolies obtain from the oil and gas revenues to fuel and ossify their rule via the strategy of ‘corporatizing welfarism’, namely to change the systemic conduct of these countries’ political economy – PE, as shown in Figure 3. As a result, as the World Bank’s overall governance index in Table 1 demonstrates that in the period of 1996-2010, the Gulf states ranked far below not only the high-income countries but also the world average in terms of six criteria: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and the control of corruption. (The index ranges between minus and plus 2.5, from weak to strong.)

Table 1. Economic and social welfare indicators in the Gulf Countries

National Economic Aggregates																		
Country	Overall Govern. Index (Avrg)	Real GDP Growth (Annual change)			GDP Per Capita (Annual change)		Industry Value Added as of GDP		Service Sector Value Added as of GDP		Agriculture Value Added as of GDP		Central Government Debt as of GDP	General government balance	Consumer Price Index (Year avrg)	Real Interest Rates		
	96-10	80-99	00-10	80-99	00-10	Avg 80-99	2000s	80-99	2000s	Avg 80-99	2000s	90s	00-10*	00-10	80-99	2000s	80-99	00-10
Bahrain	0.1	3.6	6.0	0.5	-0.4	45.4	...	53.6	...	1.1	...	17.8	27.8	0.3	1.5	1.6	11.4	2.1
Kuwait	...	...	4.2	...	...	...	...	46.8	46.2	0.4	0.4	...	15.9	28.2	3.4	3.4	8.1	0.1
Oman	0.3	7.0	4.7	3.3	2.6	52.9	54.8	44.3	43.2	2.8	2.0	26.6	12.4	8.3	...	3.0	10.4	1.5
Qatar	0.4	...	13.4	...	0.9	...	...	...	...	...	...	...	31.7	9.0	3.3	5.0	...	-1.0
Saudi Arabia	-0.5	1.2	5.0	-2.4	2.3	49.2	57.9	46.1	38.5	4.7	3.7	...	46.4	10.8	0.7	2.4	...	...
UAE	0.5	3.5	5.4	-2.3	-4.9	52.2	52.8	46.5	45.7	1.3	1.5	...	9.5	6.0	...	4.9	9.2	4.6

International Economic Aggregates												
Country	Real Effective Exchange Rate	Current Account Balance /GDP	Tariff rate (average)		Exports of goods and services /GDP		Fuel exports in total export		FDI /GDP		R & D Expend. as of GDP	
	80-99	2000s	2000s	1990s	2000s	Avg 80-99	2000s	80-99	2000s	80-99	00-10	1995-10
Bahrain	147.6	105.3	7.1	7.9	5.1	95.3	87.9	...	66.9	4.3	6.1	...
Kuwait	...	...	31.1	...	4.0	51.1	58.6	68.6	94.5	0.1	0.1	0.1
Oman	...	...	8.5	6.0	5.0	48.6	55.3	85.9	83.6	1.1	2.6	...
Qatar	...	...	20.5	...	4.0	48.7	60.7	83.9	85.9	0.8	4.1	...
Saudi Arabia	160.4	106.2	16.0	11.1	5.8	38.6	50.7	91.8	89.6	1.1	3.1	0.1
UAE	147.3	105.1	7.5	...	4.3	...	65.9	23.8	74.7	0.1	3.3	0.3

Social Welfare Indicators																			
Country	Population Growth		Labor force participation rate		Unemployment		Youth Unemployment		Tax revenue of GDP		Indirect/ direct taxes		Subsidies and other transfers	Gini Index	Poverty headcount ratio	Human Poverty Index***	Poverty 2007	HDI Rank***	HDI Rank***
	80-99	00-10	90-99	00-10	2000s	2000s	90-99	00-10	90-99	00-10	90-99	00-10	90-10	2000s	2000s	97	2007	70-10	90-10
Bahrain	3.1	6.1	65.2	67.2	5.2	17.8	5.2	3.2	4.0	1.3	10.2	...	...	...	9.8	8	21	93
Kuwait	3.5	4.5	64.4	67.7	...	11.3	1.0	1.1	...	...	34.7	...	...	...	13.6	4.7	48	59
Oman	3.4	2.3	57.9	56.0	...	...	7.4	2.2	1.1	...	7.9	...	...	...	33.2	14.8	1	7
Qatar	5.1	10.2	79.1	80.5	1.2	1.4	...	19.7	...	...	17.2	41.1	...	...	14	5	73	104
Saudi Arabia	3.8	3.0	52.1	50.2	5.3	29.0	...	...	...	...	...	...	...	...	18.8	12	24	88
UAE	5.7	9.7	74.7	76.8	3.4	10.1	0.7	...	...	16.0	...	...	...	...	17.6	7.7	3	2

Sources: World Bank, World Development Indicators (2014); *T total government gross debt, IMF, ‘Regional Economic Outlook: Middle East and North Africa’ (Washington, DC, 2005). **Simple mean applied tariff is the unweighted average of effectively applied rates for all products subject to tariffs calculated for all t
***UNDP, Arap Development Report (Cairo, 2011).

The model of PE in the Gulf states, as observed in Figure 3, was structured upon congealing a potential social uprising through corporatist welfarism and through direct or controlling repression by military force. In these states, governmental salaries are high, crowding out the private sector's employment capacity. Corporatist welfarism refers to the provision of generous social benefits and subsidies including housing health, education, electricity, water, and fuel to the public to buy more 'submissive time', thereby perpetuating the vested structure of rentier states. Indiscriminate subsidies are also easily bestowed on productive industry and agriculture in the form of capital, electricity, water and fuel. Although the ratio of these subsidies is not high in international comparison, there are additional implicit subsidies, such as the free or below-cost provision of government services (utilities, transportation, sector-specific inputs) and low petroleum prices and subsidized long-term loans. The total amount of explicit and implicit subsidies makes up a high proportion, causing resource misallocation, particularly by distributing these subsidies through informal patronage channels (Askari, 2006: 130-2).

The mainstay of corporatizing welfarism is the extremely low rates of direct or indirect taxation in all of these countries, except Qatar, along with moderate inflation. However, such passive welfare provision does not yield a stable human development process. As shown in Table 1, the Human Development Index for the region decelerated during the period of 1990-2010 compared with 1970-2010. This performance is noticeably lower considering their high-income position. Thus, although the Human Poverty Index for the region declined in the 2000s compared with the 1990s, it is still higher than the average of other developing countries with similar levels of income per capita. Another facet of the unequal stability in the socio-economic policies of the political monopolies is the permanence of a tri-tiered labor market structure. Despite the existence of comparatively decent working conditions in the public sector, the lack of protective private sector employment law or its ineffective implementation results in labor abuse and bad compensation (Noland & Pack, 2007: 94-9). At the bottom fall foreign workers, who form an overwhelming majority of the qualified labor force stock in the region and have been in most cases omitted from the coverage of the labor law. As observed in Table 1, in this respect, while civil servants and private sector workers with regular contracts in small enterprises are covered under a social security regime, non-citizen workers are denied this right in all Gulf countries (no available information for Qatar and UAE).

The budget surpluses, which are in some cases phenomenal, and the comparatively moderate level of government indebtedness with low real interest rates are the basic macro components that empower the governments in the region to perpetuate corporatist welfarism. The consequence

is ‘positive-sum leisure’ or ‘interlocked interests’ among polity, market, and society through which the corrupted ruling strata buys submission and obliterates the risk of the formation of massive middle classes as potential catalysts for conflictual and interrogative action; private entrepreneurs enjoy the opportunity of non-risky investment and capital accumulation; and society, to a certain extent, utilizes generous social benefits. The positive-sum leisure inescapably introduces the evolutionary embedding of ‘low-road’ compromise under cumbersome regulation and transaction costs. The rising growth rates in the Gulf countries over the last decade fell back upon rising capital accumulation with a low gross average return out of oil revenues rather than increasing total factor productivity, which incurred significant declines in the 1980s and 1990s (Amin et al., 2012: 38-40). As the Arab Development Report notes, “in synthesis, oil revenues have supported a service-led pattern of economic development at the expense of the productive sectors, which renders the region the least industrialized among developing regions, including Sub-Saharan Africa” (UNDP, 2011: 33).

The share of fuel exports in export earnings is quite high for all countries in the region. Taken together with the ongoing high rate of subsidies, the patronage-based regulation of economic action stimulates an uncreative corrosion for private entrepreneurs to maintain the production of low value-added (petroleum related) primary products, such as rubber and plastic products, along with food and chemical goods, thereby discouraging them from venturing into diversifying the manufacturing export base, despite ad hoc initiatives by re-exports or developing energy-intensive industries and iron and steel products (Askari, 2006: 153). This mode of action is further consolidated for private entrepreneurs by the negative stimulus of overvalued exchange rates (the Dutch disease), the phenomenal current account and budgetary surpluses due to the incoming petrol or gas revenues that increase the price of non-tradeables such as housing and services compared with the price of tradeables because the latter cannot, in most cases, be imported (Askari, 2006: 17). In fact, the political monopolies are supportive of private sector development and international trade (to the extent that such development and trade would not threaten their rule). With this mindset, although quite high compared with high-income countries in the region, the tariff rates were noticeably reduced in the last decade (see the Table) and are now at moderate levels compared with the average of developing countries. Though contributing to the rise in the FDI inflows to the region at moderate levels, this liberalization has also been accompanied by generous incentives and ad hoc exemptions without efficiency-based discrimination. As an indicator of this dichotomous practice in the region, research and development expenditures are at marginal levels compared to the international averages.

In political terms, the basic pattern of path-making and the sustaining strategy of the Gulf monopolies has been theoretical pragmatism, in the sense of discursive emphasis but tantalizing abstention in implementing the basics of Islamic PE in the public sphere. With this functional segmentation, rather than being accepted as a model of PE, Islam has been employed by the ruling leisure classes in the case countries as a normative change-blocking cement among polity, economy and society to cool and suppress the accumulated social tension. It can in this respect be suggested that the political economy of the Gulf countries is now far from being identified with an Islamic regime. In addition to the lack of an ethics-based intercomplementarity among economic, political, social, and market institutions, the corporatizing welfarism and positive-sum leisure as a point of voluntary or involuntary compromise among the actors of these four units obliterated the emergence of an Islamic social optimum. The depolitization of civic, political, or economic associations rules out the effectuation of a governance (shura) regime among the state, market, and civic forces, thereby stabilizing the unquestionable rule of the political despots. With the embedding of rent-seeking action in a public sector-weighted economic structure, instead of operationalizing a creative construction around high-road complementarity, private actors perpetuate low-road complementarity both to capitalize easy subsidies, patronage rights, and market protection, and to avoid taking the risk of failure in competitive sectors. Instead of regulating a rights-based and redistributive social policy regime, the provision of compromise-buying subsidies incapacitates human resources, depresses labor productivity, and cunningly forecloses upward social mobility. With this background, the systemic gaps between the ‘ideals’ of Islamic PE and the praxis of the case countries originate in the aforementioned segmentedly shallow normativity and congealing rationale embedded in authoritarianly constructed political monopolies. In systemic terms, this gap is sufficient to eviscerate the core constituent of an Islamic PE, the intercomplementarity between formal and informal institutions as the basic cement of the ‘Islamic social contract’.

5. Conclusion: Theoretical Sustainability with or without Practical Sustainability?

The paper concludes that Islamic economics along with its political and socio-cultural dynamics has solid pillars that could well make it sustainable in both the short-run and long-run. The key point here is the fact that Islamic economics merges behavioral, micro-macro economic, financial, social welfare, and developmental institutions in a way to strike a sustainable trade-off between efficiency, equity, and technological advancement. However, the Muslim countries, as illustrated with reference to the Gulf countries, fail in functionalizing this trade-off but operationalize a positive-sum leisure instead, which has been a path-dependence over a couple of centuries.

In the modern world system, Muslims should be in the position to utilise Islamic theoretical axioms as a motivating source of eradicating the imperfections of their institutional stocks (Parvez, 2000: 229-54). Although they have the potential to do so at national and transnational levels under the unifying force of the principle of Tâwhid, they must first carve out the methods of countermanceuvring the vested institutions of transnational capitalism in the area of economic competition, political cohesion and human development. This is what they could not achieve over, at least, the last two centuries. In this sense, the co-existence of material and spiritual tenets of Islamic PE did not survive in the aftermath of the early Islamic history when this balance had been upheld by the rulers and the ruled (Chapra, 2000: 62-63). Particularly, in two areas, the Muslims' social organisation has not generated effective outcomes: the political governance and technical know-how.

In the first area, the later Muslim rulers belittled the mainstay of Islamic administration, the shura (consultation). In the second area, the Muslim communities, not necessarily Muslim scholars who contributed to the scientific stock notably, could not infuse into the distinction between normative and rational implications of science-making at the level of theory and praxis. The divinely ordained life-style of Islamic order and the worldly rational aspect of science-production led them to remain aloof, preferentially, from massively engaging in *pure* rationality. This is the case not only in technical innovation but in the conflation and co-evolution of Muslim economic, political, and cultural institutions with rational entrepreneurial creativity. This fact, for example, is the most essential reason why the Ottoman Empire, despite having a sustained political and cultural organisation, could not maintain its ascendancy in the face of the Western challenge (Safi, 2000: 35-39).

In this respect, as Bennabi (1976: 8-21) noted, during the post-World War II period, the Muslim world failed to come up with workable solutions to their idiosyncratic developmental challenges in light of the basic axioms of Islamic economics. Instead, Muslim scholars intend to intersperse liberal premises into Islamic economics, Muslim development planners choose to directly transpose the development models of the Western countries, and therefore, Muslim countries' economies drift under the pressure of capitalist hegemony. With the lack of an appropriate 'social equation', the necessary precondition of creating a workable mass culture of industrialisation, this theory-praxis mismatch makes it impossible for Muslim countries to initiate a structural take-off that would open up new horizons of a productively efficient and distributionally equal economic order (Bennabi, 1976: 123-31). As a result, as he (2003) concludes, the inability of Muslim countries to strike a trade-off between the spiritual and the material ideas not only freezes but also regresses their civilisational development in capitalist times.

The quintessence of this demerit in the praxis of Muslim societies is the assumption that Muslims' civilisation superiority arises essentially from its members' normative fidelity to Qur'anic principles, whereas non-Islamic societies are *jahili* (the unenlightened) because they do not believe in Islam. Unfortunately this false perception disables the Muslim nations to explore the fact that, in the theory of Islam, nonetheless, the same normative fidelity is expected to stimulate its actors not only to abide by the Islamic ecclesiastical principles but also to institutionalise rational means of technical progress in industry, science, innovation, education, and social reform. Furthermore, this is not a matter of choice but an inevitability (Safi, 2000: 52-3).

As a result, it can be suggested that what will mark the 21st century for Muslims is the dialectics between the theory of Islamic economics and the ability of Muslim nations to implement it in compliance with its theory. There are two preconditions for its thorough implementation. The first is the Muslims' success in merging spiritual ideals with worldly science-making, the unique way for them to get out of their subordinate position in the international division of labor. Without doing so, it would be simply impossible for them to establish and sustain an Islamic economic order on solid pillars. The second is to manage the development of contemporary institutions that could both mediate the adaptation of Islamic economic model without deranging its systemic coherence and pave the way for the dynamic renewal of its theoretical validity. The recent ascendance of Islamic economics can be sustainable only on these two bases in the long-run. Otherwise, the emphasis of its theoretical merits cannot be expected to eliminate the capitalist exploitation of the Muslims' resources.

References

- Ahmad, K. (1979). *Economic development in an Islamic framework*. Leicester, UK: The Islamic Foundation.
- Ahmad, Z. (1991). *Islam, poverty, and income distribution*. Leicester, UK: The Islamic Foundation.
- Al-Bukhari. (2009). *Sahih Bukhari*. Transl. by M. M. Khan. Available at: https://ia600804.us.archive.org/25/items/HadithShahiAlBukhariInEnglish/Sahih_Al-Bukhari.pdf, Accessed on 10 February 2015.
- Al-Jabri, M. A. (2009). *Democracy, Human Rights and Law in Islamic Thought*. New York: I.B.Tauris.
- Amin, M., Dervis, K., Dhillon, N. S., Desai, R. M., Baharna, N., & Assaad, R. (2012). *After the spring: Economic transitions in the Arab World*. Oxford, UK: Oxford University Press.
- Asad M. (1961). *The principles of state and government in Islam*. Berkeley, US: University of California Press.
- Askari, H. (2006). *Middle east oil exporters: What happened to economic development?*. Cheltenham, UK: Edward Elgar.
- Ayub, M. (2007). *Understanding Islamic Finance*. Sussex, UK: Wiley.
- Bakır, E., & Campbell, A. (2013). The financial rate of profit: What is it, and how has it behaved in the United States? *Review of Radical Political Economics*, 45(3), 295–304. <https://doi.org/10.1177/0486613413487161>

- Bennabi, M. (1976). *Ekonomi dünyasında müslüman [The Muslim in the economic world]* (M. Keskin Trans.). İstanbul, Turkey: Hicret.
- Chapra, M. U. (2006). Why has Islam prohibited interest: Rationale behind the prohibition of interest. In A. Thomas (Eds.), *Interest in Islamic economics: Understanding riba* (pp. 95-110). London, UK: Routledge.
- Chapra, M. U. (2000). *The future of economics: An Islamic perspective*. Leicester, UK: The Islamic Foundation.
- Chapra, M. U. (1993). *Islam and economic development*. Islamabad, Pakistan: The International Institute of Islamic Thought.
- Chapra, M. U. (1986). *Towards a just monetary system*. Leicester, UK: The Islamic Foundation.
- Choudry, M. A. (1992). *The principles of Islamic political economy*. New York, US: St. Martin's Press.
- Delury, G. E., & Kaple, D. A. (2006). *World encyclopedia of political systems and parties*. New York, US: Facts on File.
- Ebu S., M. (1988). Para, faiz ve mudarabe, *İslam iktisadi araştırmaları* (pp. 54-79), İstanbul, Turkey: Dergah.
- Enayat, H. (1986). *Modern Islamic political thought*. Hampshire, UK: McMillan.
- Esposito, J. (1991). *Islam and politics*. New York, US: Syracuse University Press.
- Federal Reserve (2020). Financial Accounts of the United States, Available at: <https://www.federalreserve.gov/releases/z1/>, Accessed on 10 January 2020.
- Haq, I. U. (1996). *Economic Doctrines of Islam: A Study in the Doctrines of Islam and Their Implications for Poverty, Employment and Economic Growth*. Virginia: The International Institute of Islamic Thought.
- Islahi, A. A. (2005). *Contributions of muslim scholars to economic thought and analysis*. Jeddah, Saudi Arabia: Scientific Publishing Centre of King Abdulaziz University.
- Iqbal, Z., & Lewis, M. (2009). *An Islamic perspective on governance*. Cheltenham, UK: Edward Elgar.
- Iqbal, J. J. (1986). *The concept of state in Islam: A Reassessment*, Available at: http://i-epistemology.net/attachments/318_V1N1%20Spring%2084%20-%20J%20Iqbal%20-%20The%20Concept%20of%20State%20in%20Islam.pdf, Accessed on 4 January 2015.
- IMF. (2005). *Regional economic outlook: Middle East and North Africa*. Washington, DC.
- Khaldun, İ. (1967). *The Muqaddimah: An introduction to history. Vol. I, (F. Rosenthal, Trans.)*. Princeton, US: Princeton University Press.
- Mannan, M. A. (1983). *Islamic economics: Theory and practice (Comparative Study)*. Lahore, Pakistan: Ashraf Printing Press.
- Maudidi, A. A. (1986). *The Islamic way of life, (K. Murad & K. Ahmad Trans)*, Riyadh, Saudi Arabia: International Islamic Publishing House.
- Maudidi, A. A. (1963). Economic and political teachings of the Qur'an. In Abu Hanifah & Abu Yusuf. M. M. Sharif (Eds.), *A history of Muslim philosophy* (pp. 178-98), Kempten, Germany: Allaguer Heimatverlag GmbH.
- Naqvi, S. N. H. (1981). *Ethics and economics: An Islamic synthesis*. Leicester, UK: The Islamic Foundation.
- Niblock, T. (2008). Civil society in the Middle East. In Youssef M. Coueiri (Eds.), *A Companion to the History of the Middle East* (pp. 487-503). Maiden, MA: Blackwell.
- Noland, M., & Pack, H. (2007). *The Arab economies in a changing world*. Washington, US: Peterson Institute for International Economics.
- Parvez, Z. (2000). *Building a new society: An Islamic approach to social change*. Leicester, UK: Revival Publications.

- Rahman, F. (1986). The Principle of Shura and the role of the Ummah in Islam. In M. Ahmad (Eds.). *State, Politics, and Islam* (pp. 87-96). Indianapolis, American Trust Publications.
- Roberts, J. R., & Westad, O. A. (2003). *The history of the world*. Oxford, UK: Oxford University Press.
- Safi, L. (2000). Developmental trends in contemporary Muslim experience. In Z. Kausar (Eds.), *Political development: An Islamic perspective* (pp. 25-56). Kuala Lumpur: The Other Press.
- Siddiqi, M. N. (1996). *Role of the state in the economy: An Islamic perspective*. Leicester, UK: The Islamic Foundation.
- Siddiqi, M. N. (1992). Principles of international economic relations in Islam. In M. A. Mannan, M. Kahf & A. Ahmad (Eds). *International economic relations from an Islamic perspective* (pp. 9-34). Jeddah, Saudi Arabia: Islamic Research and Training Institute.
- Stiglitz, J. (2013). *Re-writing the Rules of the American Economy*. New York, US: W.W. Norton & Company.
- Turabi, H. (1983). 'The Islamic State', J. Esposito (Eds), *Voices of Resurgent Islam* (241-52). Oxford, US: Oxford University Press.
- UNDP. (2011). *Arab development challenges report: Towards the developmental state in the Arab region*. New York: UNDP.
- World Bank. (2020). World Development Indicators, Available at: <https://databank.worldbank.org/source/world-development-indicators#>, Accessed on 8 January 2020.

CHAPTER 3

ISLAMIC APPROACHES TO SUSTAINABLE DEVELOPMENT

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Abstract

The myopic formulation of human development by neoclassical economics exclusively in terms of economic growth has resulted in a transformation through which self-interested greed-based consumption is idealized to the great detriment of both the planet and the inhabitants of this planet (not only of the current generation but also those of the future generations). The Islamic notion of human development, in contrast, emphasizes a harmonious coexistence of human beings and nature through the responsible utilization of natural resources, which are considered as God's gift to the whole of humanity (belonging to the present as well as the future generations). In this article, we articulate the failings of the modern conceptions of development and contrast that with the Islamic sustainable development vision. The Islamic conception of development is endogenously "sustainable" due to its emphasis on the responsible use of resources; moderate consumption and simple living; and empathy for the less privileged (e.g., through both optional and mandatory charity). After providing a broad framing of the Islamic sustainable development vision, we also describe briefly the tools, incentives, and guidelines that Islam offers regarding authentic sustainable development. We also describe how Islamic guidelines provide the keys for facilitating social inclusion, environmental sustainability, and inter-generational sustainability.

Keywords: Greed, sustainable development, Islamic Economics, Islamic sustainable development, transformative strategies of Islam

1. The Great Transformation

Great fires burning in the Amazon and the Arctic herald the looming climate catastrophe which threatens the existence of humanity on the planet. As Greta Thunberg has been pointing out, the question of what can be done to prevent this should keep world leaders and policy makers awake at nights¹. To understand what we need to do, we need to learn more about the forces of history which have shaped our thoughts and actions into creating and supporting policies which are destroying the planet. In this paper, we analyze this problem with focus on the role that the teachings of Islam can play in providing a solution.

At the root of the problems that we see is what Polanyi (1944) called ‘the Great Transformation’ from a traditional society to a market society. At the heart of this transformation is the creation of three artificial commodities: land, labor, and money. Money is what allows the storage of surplus value, great excesses of which are created by the massive over-production which is the characteristic of industrial societies. Without the possibility of storing up value for use later, there would be no point in excessive production for sale, and societies would only produce what they can consume or utilize directly. The conversion of human lives into commodities for sale creates the alienation that has become part of modern life. Polanyi writes that converting labor to a commodity means that “the system would, incidentally, dispose of the physical, psychological, and moral entity “man” attached to that tag. Robbed of the protective covering of cultural institutions, human beings would perish from the effects of social exposure; they would die as the victims of acute social dislocation through vice, perversion, crime, and starvation”. Similarly, treating our planet as just a commodity for sale would result in disaster: “Nature would be reduced to its elements, neighborhoods and landscapes defiled, rivers polluted, military safety jeopardized, the power to produce food and raw materials destroyed.”

The key elements of the transition from a traditional society to a market society which create major barriers to policies required for sustainable development can be enumerated as follows:

1: Commodification of Human Lives: Traditional societies are based on a collective vision of a community with shared values working together for a common goal. Social responsibility means that social needs over-ride personal preferences. In order to freely buy and sell human lives, market societies must replace these values by individualism and hedonism. Individualism detaches people from their communities, in order to create

1 “Our house is on fire.” 16-year-old Greta Thunberg wants action <https://www.weforum.org/agenda/2019/01/our-house-is-on-fire-16-year-old-greta-thunberg-speaks-truth-to-power/>

interchangeable parts for use in the labor market. Hedonism ensures that social values are subordinated to the individualist pursuit of wealth and pleasure, so that market incentives of wages and penalties of unemployment are sufficient to persuade people to exchange their precious lives for money.

2: *Commodification of Planetary Resources:* Traditional societies are based on a clear recognition of the symbiotic relationship between our environment and ourselves. All resources that we use for living are produced by the earth in generous quantities. The phrase “Mother Earth” reflects the realization that these gifts given freely to us generate a reciprocal responsibility to care for the planet, and to preserve these benefits for future generations. Commodification of everything for sale on the marketplace creates the illusion of replaceability and inter-changeability of planetary resources. Species of flora and fauna which took millions of years to evolve, and cannot be re-created at any cost, are casually destroyed in pursuit of profits. The market eye reduces the miraculous wonders of the Amazon forest to timber for making furniture.

3: *Massive Surplus Production:* The industrial revolution created the possibility, for the first time in human history, of production far beyond the needs and capacity of human beings to consume. The market society came into existence in response to the challenge of finding ways to use this excess production. One of the ways was the creation of a consumer society, driving levels of consumption far above the necessary, and creating a way of life marked by ostentatious and wasteful consumption. Another important element was the rising importance of money as a way to store value created by production today for use tomorrow. The rise of the “Lords of Finance” and the creation of the power to control planetary production processes was due to the increasing use of money, and its ability to shape the world around us.

With planetary resources running out rapidly, and looming threat of catastrophic climate change, some attention is now being given to “sustainable development”. This movement is still situated within the ambit of a market economy, and built around the same foundational concepts. The goal is *not* collective action based on shared sacrifice for preservation of mother earth, and to protect the interests of the future generations. Rather, the realization that collective exploitation of planetary resources has exceeded critical limits and will lead to collapse in the near future, leads to the reluctant effort to slow the pace to a level which will stave off collapse to a later date. In other words, “sustainable development” is still based firmly on short-sighted individualistic greed, and the major obstacles to making progress on the limited goals is created by the need for shared sacrifice. All formulas for sharing are blocked by parties who want to minimize suffering for themselves and make others pay the cost of adjustments.

The need for radical social change, which would reverse the Great Transformation, is not realized by many. At the root of the problem is a society which runs on massive surplus production and consumption. The only way to reverse this is to target clearly and explicitly for an economy which runs on low levels of consumption. We need to go for de-growth, and reductions in standards of living, and this precisely what an Islamic society aims for. The goal of this paper is to spell out the Islamic vision, and how it addresses these problems, in ways which are of direct benefit and importance for today.

2. Mainstream Approaches to Sustainable Development

Mainstream discourse on sustainable development is hopelessly inadequate because of fragmentation and specialization. Modern economic theory with a narrow focus on markets cannot hope to understand the complex range of factors which drive climate change, and must be considered together, to create a viable response. In response to this challenge, the field of social ecological economics has emerged. The Handbook of Ecological Economics (Martinez-Alier & Muradian, 2015) introduces a heterodox multi-disciplinary approach dealing with socio-political environment, biophysical realities, and a broad range of ethical concerns that must be integrated in any potential solution. In this brief essay, we confine our attention to a critique of the mainstream discourse, which is the main driver of policy paralysis today. We will also delineate an Islamic alternative, which shares some commonalities with heterodoxy, while adding its own unique perspectives on the problem.

2.1. Genesis of the Sustainable Human Development Movement

Historically speaking, the idea of ‘sustainability’ received serious attention as a result of the global concern around the effect of human actions on our environment and was given a fillip by the publication by The United Nations World Commission on Environment and Development of the report ‘Our Common Future,’ more commonly known as the Brundtland Commission Report (Brundtland et al. 1987). The report gave us the now-well-recognized definition of sustainable development as, “the development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” The International Union of Conservation of Nature (IUCN) gave a broader definition of sustainable development as, “improving the quality of life while living within the carrying capacity of supporting ecosystems.”

Modern sustainable development efforts are multifaceted but are broadly understood to be based on three main pillars:

- (1) ***inter-generational sustainability***: ensuring that the current generation's developmental efforts do not compromise the abilities of future generations to meet their own needs;
- (2) ***environmental/ecological sustainability***: preventing irreparable damage to the Earth and the natural resources by human actions;
- (3) ***sustainability through social inclusion***: the need for an equitable redistribution of the wealth of the society and the elimination of extreme poverty.

These pillars also feature prominently in the new global Sustainable Development Goals (SDGs) agenda "Transforming our world: the 2030 Agenda for Sustainable Development," adopted by the United Nations (UN) General Assembly in 2016.

2.2. Islamic Critique of the Three Pillars:

Heterodox critique suggest that mainstream approaches are mere eyewash which do not recognize the deep-rooted and complex nature of the problems and do the minimum necessary to create an impression of response while pursuing business as usual. We provide an Islamic critique of the three pillars in this section. In later sections, we consider the fundamentals of an Islamic solution to the problems raised by the climate change crisis.

The "three pillars" represent a wish-list of desirable outcomes but fail to provide a path to achieve these outcomes. The current undesirable outcomes are based on the selfish pursuit of profit without regard to social concerns. These motivations are created by the market economy, and this mindset prevents the possibility of collaboration on common concerns and socially responsible behavior. The collective actions required to achieve these outcomes cannot be undertaken when economic theories preach that rational behavior involves pursuit of self-interest and betray commitments and social responsibilities whenever they come in the way of selfish goals. Without examining the basis of behavior, and attempting to create a basis for collective action, collective agreements will not be reached. Even if they are reached, they will not be honored. This is exactly what we see in the negotiations for climate change, which fail to reach agreements and fail to abide by agreements which have been reached. Unless we go deeper to work on changing motivations and creating a basis for collective action, the pillars will remain pipe dreams. Some specific comments regarding each of the three are given below.

Inter-generational sustainability: How can we "ensure" that current efforts to maximize wealth do not adversely affect future generations when our MBA programs teach businessmen to maximize the bottom line without any concerns about social responsibility? Indeed, until recently, maximization of shareholder value has been taken as a sacred creed, the only moral

responsibility of corporations. Until we start teaching different kinds of lessons based on morality, effective change cannot be created. Even current courses on business ethics and corporate social responsibility are useless because they work on the wrong bases for morality. Ethics and responsibility are taught to improve the image of corporations as a means to improving the bottom line. This is radically in conflict with Islamic ideals.

Environmental Sustainability: To achieve these goals, we need to change our mindset with respect to our planet, the spaceship Earth. The powerful metaphor of the earth as a dead mechanical object needs to be replaced by the earlier concept of Mother Earth, or the modern notion of Gaia, the living planet. This is strongly supported by the Qur'ānic imagery of the rocks, rivers, trees, plants, and animals in collective submission to the orders of Allah. Again, without fundamental changes in attitude and creation of love and respect, merely stating a desirable outcome is unlikely to produce positive change. Real change in this dimension requires notions introduced in “doughnut economics.” That is, we have a closed and finite sphere of resources. We need to learn to live a self-sustaining lifestyle. The economic idealization of continuous growth is impossible in a finite planet. These ideas are in close harmony with Islamic ideals of simple lifestyles.

Social Inclusion: As discussed by Polanyi, poverty as a social problem is a creation of the market society. Acting in socially responsible ways seriously undermines the labor market required by capitalism. This is because it is only the extreme threat of hunger and homelessness that creates the desperation necessary to make selling our lives for dollars seem reasonable. To create a socially responsible society requires radical reconstruction of our societies. One experiment which failed was communism. On the other hand, intermediate socialistic economies, like Sweden, have proven highly successful at eliminating poverty. Islam provides us with a different approach, discussed briefly below and in greater detail in Qadir and Zaman (2019).

3. Keys to Social Inclusion

The revolution created by the advent of Islam fourteen centuries ago was grounded in a multi-dimensional approach to social transformation. One of these dimensions is to create internal change. Social inclusion cannot be legislated; it requires changing the hearts of men and women. The Qur'ān mentions that men have been created in the best of forms, and reduced to the lowest of the low. That is, there is enormous range of potential within human beings, who can rise to be higher than angels, and also stoop to be the lowest form of creation. All human beings are born as Muslims, with natural tendencies towards the good. However,

human beings are enormously flexible, and can be trained away from the natural *dīn*. The market society requires laborers, and the educational system of a market society is designed to turn out human resources instead of human beings.

The antidote to this poison is based on spiritual progress. Once we learn to control our desires for instant gratification, we will be able to see more clearly the sources of our own genuine happiness (Sachs, Layard, and Helliwell, 2018). The Qur'ān (45:23) talks about those who worship their desires, that this act makes them blind to their own welfare. To begin with, we must learn the crucial lesson that the gains of this world are an illusion (Qur'ān 47:36). Why is the race for more and more goods an illusion? After the discovery of Easterlin's paradox, that massive amounts of growth have not led to happiness in market economies, the field of "happiness studies" was created to learn the answer to this question. Two basic central principles emerged from this study. Human beings have two characteristics built into their nature. Neither of these two basics of human nature appear in economics textbooks, which would have to be re-written completely to take them into account.

Adaptation and Habituation: People can adapt and become accustomed to an extremely wide range of living conditions, from the simplest and most primitive, to the most luxurious and extravagant. Happiness arises from changes from the normal. Pursuit of high standards of living only gives short-run pleasure, but actually creates unhappiness in the long run. For example, people who live without air-conditioners do not feel deprived. Initial adoption of air-conditioning creates a jolt of happiness. But after this becomes the new "normal", people feel unhappy when exposed to heat. To maintain their new normal, they must provide additional labor to purchase the energy required to run the air conditioner. Thus, the initial jolt of happiness leads to two types of long run costs: the necessity to maintain higher standards as the new normal, and the necessity to provide additional labor, to purchase the requirements of the higher standards.

Envy and Comparison: The "normal" level does not depend only on what we are personally accustomed to. It is also defined by the average standard of living among our neighbors. We feel happy when we rise above this average. This creates an incredible rat race. Everyone strives all their lives to increase standards of living above average. As a result of these efforts, the average keeps rising, frustrating these desires. Everyone would be better off if no one engages in this struggle to keep up with the Joneses.

4. Keys to Environmental Sustainability

The Prophet (ﷺ) said, *“The world is beautiful and verdant, and verily God, the exalted, has made you His stewards in it, and He sees how you acquit yourselves”* (Muslim, Book 48, Chapter 26, Hadith 2742).

In Green Deen, Abdul-Matin (2010) explains how the core teachings of Islam teach us to respect, protect, and preserve the natural gifts of God. All of the creation belongs to God, originally and forever. Islamic teachings provide a strong sense of the sacred nature of these gifts from God. The Islamic theory of property is radically different from the capitalist theory currently dominant. The grant of temporary “ownership,” or command over resources, is based on use of these resources for beneficial purposes. As stewards, we must tread lightly on the land and not abuse these resources which have given to us temporarily as a test.

The trees, stones, rivers, and mountains, and all of nature, are living creation engaged in the worship and obedience of God. Conservation and preservation of natural resources is among the core teachings of Islam. The Prophet commanded us not to waste even a few drops of water even if we are next to a river. Armies were instructed not to burn trees or destroy agricultural land. Destruction of the natural habitat of animals and of flora or fauna is not allowed. There is emphasis on the planting of trees and flowers, and the sea retreated as acts of virtue. A ḥadīth says that if you are in process of planting a tree and Judgement Day arrives, keep on planting. Justice applies not just to humans but also to animals, and humans are prohibited from torturing animals or hunting them purely for pleasure. Animals used for service must be treated fairly and not hurt or punished severely.

Prophet Muhammad (ﷺ) said: *“All creatures are [like] a family of God: and He loves most those who are kindest to His family.”* (Al-Tabrizi, *Mishkāt al-Maṣābih*, Vol. 4, 4998 & 4999). Today, we are witness to massive abuse of this stewardship as we destroy habitats of animal species, leading to extinction at rates never seen before. Ecologists are talking about the “Sixth Extinction” (Kolbert, 2014) and calling this era the “Anthropocene” in recognition of the devastating changes being created by human activities. The Prophet was concerned about the pain felt by birds and other animals and warned of the sins of causing needless suffering to any living species. Today, great fires in the Amazon and Arctic clearly show how corruption is appearing on the land and seas due to the evil deeds that men have done.

5. Keys to Inter-Generational Sustainability

The market society we all live in is built on certain assumptions which are both self-contradictory and conflict with empirical realities. Unless these contradictions are exposed, examined, and resolved, there is little hope of finding a sound theoretical basis on which a suitable response to climate change can be built. Capitalism requires a labor market, which requires commodification of human lives. This creates the necessity of breaking down communities and strengthening individualism. In order to get people to sell their lives for money, it is necessary to re-engineer social norms in order to make wealth the highest symbol of social status. Islamic societies are built around cooperation and generosity while capitalism can only function on the basis of competition and greed, expositing as fundamental principles in modern textbooks of economic theory.

The contradiction at the heart of capitalism is that a ‘good society’ cannot be built on competition and greed, because human beings are inherently social. This contradiction is resolved in mainstream economics textbook by creating ideological blinders of the “Invisible Hand”. For instance, Mankiw’s popular economics textbook (Mankiw, 2014) argues that ‘market economies work well, not because of love and kindness, but because the invisible hand guides selfish agents towards socially beneficial outcomes.’ In Amir-ud-din & Zaman (2016), the authors show that the invisible hand enriches the wealthy at the expense of the poor, while creating a cover story that this is for the benefit of all. Mainstream approaches to sustainable development are based on maintaining a system based on competition and greed, and work on mitigating the disastrous outcomes to society. The fundamental Islamic insight is that outcomes are based on intentions. One cannot arrive at a good result, when all agents act with bad intentions to enrich themselves at the cost of society. If everyone selfishly maximizes their own pleasures – and this is the definition of ‘rational behavior’ in current economic textbooks – then it is impossible to find a solution to problems of climate change in general, and inter-generational equity in particular. Islamic solutions, to be discussed in next section, work on transforming human behavior towards social responsibility and justice, based on compassion and sympathy.

The current working definition of sustainable development reflects inherent ambiguities, which make it non-functional. When we talk about “needs” of the present generation, there is a huge amount of variation – which group, which time horizon, and the grey areas between needs, comforts, and luxuries. Because of the built-in ambiguity, the current definition can be manipulated to favor the politically powerful and stymie efforts for genuine change. Islamic theories provide crisp and unambiguous alternatives.

The earth's bounty and natural resources are 'gifts from God' (*ni'mah*). Islam's theory of ownership maintains that the human owner of land is a mere manager and beneficiary thereof; real ownership rests with God, the Creator of this planet. All the natural resources – land, water, air, fire (energy), forests, oceans, fish and wildlife – are gifts of God for all of humanity, and all of the creation. Every community and generation must utilize the earth responsibly for their benefit, use it with modesty and consideration for the wellbeing of its other inhabitants, and pass it on to future generations in a better condition than that in which it was received. The primary driver of climate change today is the privatization of energy resources, which has led to massive profits for the seven sisters (oil companies) at the expense of planetary collapse. The Islamic theory of property, which holds that these deposits are gifts of God for the entire humanity, and must be used for public welfare, would be enough to prevent climate change.

Justice to those not born requires the conservation of natural resources and their utilization in a way that is fair to all. For example, the Prophet commanded us not to waste even a few drops of water, even if we are next to a river. Armies were instructed not to burn trees or destroy agricultural land. Destruction of the natural habitat of animals, and of flora or fauna, is not allowed. There is emphasis on planting of trees and flowers, and these are treated as acts of virtue. A ḥadīth says that if you are in process of planting a tree and Judgement Day arrives, keep on planting (Musnad Aḥmad 12491). Justice applies not just to humans but also to animals, and humans are prohibited from torturing animals or hunting them purely for pleasure. Wanton destruction of entire species, routinely occurring today, would be directly in violation of Islamic principles.

6. Transformative Strategies of Islam

Dominant approaches to Sustainable Development assume that we can keep the current capitalism system based on competition and greed, and find ways to mitigate the resulting damage to communities, environment, and future generations. The fundamental Islamic insight is that this cannot be done. To reverse the Great Transformation to a market society requires work on multiple dimensions. We must work transforming the hearts of men, and also on social, political, and economic institutions. Under-estimating the effort required is a recipe for failure. Islamic teachings offer us guidance in all of these dimensions, as we discuss below.

6.1. Transforming Lives of Individuals

In course of the changes created by the Great Transformation, Europeans intellectuals lost faith in God. This momentous transition was described by Nietzsche as the "Death of God" (Nietzsche, 1989). This eventually led to a misconception of man as a being without a

heart and a soul, a picture which is central to economics, and widely shared throughout Western social sciences. Removing the heart and soul leads to “homo economicus”, which is basis for modern economic theory. The basis for personal transformation is spiritual progress, a concept which is meaningless in modern Western social sciences, because the soul has been excluded from human beings. This also means that the keys to spiritual transformation have been lost in that intellectual tradition.

The Qur’ān teaches us that man has diverse motivations, and an enormous range of capabilities. He can be the lowest of the low (*Asfala-Safilīn*) and also the best of the creation (*Aḥsan-e-Taqwīm*). Spiritual growth is required to move from the bottom to top. A detailed treatment and explanations are given in Zaman (2019) “Islam’s Gift: An Economy of Spiritual Development”. Here we provide a brief summary. There are three stages of spiritual progress labeled *nafs-ammarah*, *nafs-e-lawwamah*, and *nafs-mutma’innah*. The lowest and most primitive stage is one in which man is commanded by his desires. This slavery to desires is strongly condemned in the Qur’ān in a variety of ways. While the Qur’ān encourages fulfillment of legitimate needs and comforts, going beyond the limits is called *Isrāfand Tabzīr* (wasteful and excessive spending), and is prohibited and discouraged. Modern economic theory poisons our souls because it is precisely and exactly the theory of the *nafs-e-ammarah*, the most primitive level of spiritual development, which turns man into the worst of creation. The ‘homo economicus’ of economic theory obeys all of his desires to maximize his pleasure (utility) without any social concerns, sympathy or compassion. This is precisely the theory currently taught in business schools which leads corporations to make profits even if it kills babies, wipes out species of flora and faunae, and inflicts lasting and irreversible damage on the environment and on human communities. Economic theory is a description of human behavior as characterized by the “lowest of the low” or *Asfala Safilīn* in Qur’ānic terminology.

Spiritual progress occurs when we deny our impulses for instant gratification, and follow the stirrings of our soul, which inform us about the right thing to do, even though it goes against our personal desires. All human achievement occurs when we sacrifice our short run pleasures in pursuit of larger visions and long run goals. At the second stage of spiritual progress, we sometimes succeed and sometimes fail in taking the high road. When we succumb to our base desires, we feel guilty, while when we succeed in acting in the right way despite temptations, we feel virtuous. As we repeatedly succeed in denying our desires and obeying the higher dictates of our soul, we make spiritual progress. This process can take us to the highest stage, where our desires becomes aligned with morality. This stage, sometimes called ‘*homo Islamicus*’ is the opposite extreme from ‘*homo economicus*’. Our personal

desires now serve the greater goals of achieving excellence in conduct, enabling us to achieve the status of the “best of the creation” or “*Aḥsan-e-Taqwīm*”.

Spiritual progress impacts heavily on sustainable development. Islam differentiates strongly between needs and wants, strongly encouraging fulfilment of needs, and just as strongly prohibiting the fulfilment of idle desires. Economic theory makes no distinction between the two, because all desires are compelling for homo economicus. As explained in greater detail in “Scarcity: East and West” (Zaman, 2010), scarcity is caused by the failure to differentiate. There is enough for everyone’s need, but never enough for everyone’s greed. Leading rich spiritual lives creates contentment of the heart with minimal levels of material comforts. Spiritual progress allows us to differentiate between needs and wants, and to give preference to the fulfilment of needs of others over our own idle desires. This is what creates the possibility of following simple standards of living, and creating equity and social inclusion.

Spiritual progress also creates a sense of unity and harmony with all the creation of God, which leads us to respect our home and the other species living on the planet. Environmental protection is strongly built into the ethos and culture of Islam, and is driven by this spirit, which was extinguished by the industrial revolution. Finally, treading lightly on the earth, feeling unity and harmony with it, and preserving it, automatically leads to promotion of intergenerational justice.

6.2. Transforming Communities

A market society is inimical to communities, as noted by many. To convert an individual into a commodity for use in a labor market, it is necessary to standardize and anonymize (it), which means stripping it of social identities which make the person a unique member of a network. Many authors, have discussed the breakdown of communities due to capitalism. Schluter (2009) writes that “*The effects of family breakdown are often devastating and well documented. They include child abuse (especially in step families), domestic violence, ill-health, poorer education and employment outcomes, and greater likelihood of criminal offences and taking drugs. Other consequences include difficulty in sustaining long-term marriages for those whose parents divorced, greater likelihood of loneliness in old age, and mental illness, including depression. Lack of stability in relationships threatens many people’s sense of identity, leading to profound restlessness and unhappiness. It impacts, too, on their capacity for intimacy... to protect families is to ensure there continues to be rich cultural and linguistic diversity among peoples which contributes so much to human creativity and wellbeing.*”

While there is universal agreement about the breakdown of communities, and its negative social effects, there is some discussion of the negative aspects of community related to the insider-outsider distinctions, exclusivity, and parochialism, that can characterize communities. This is sometimes referred to as ‘bonding’ social capital, which is distinct from the ‘bridging’ social capital which can create bridges between diverse communities. In Zaman & Qadir (this volume), we have given an extensive discussion of Islamic methods of building social relationship via an expanding circle of communities based on family, neighborhood, community, Ummah and all of humanity. This method avoids the negative effects noted by some authors, and promotes the use of community bonds to create universal bonds of brotherhood in all of humanity.

Creation of communities, prescribed by Islamic teachings, is essential to achieving the three pillars of sustainable development. Islamic societies are based on norms of cooperation, generosity, and social responsibility, which can only be learned within a community environment, where these norms are demonstrated and taught. Islam teaches us to share with our neighbors, and to conceal any consumption beyond their capabilities, so as to not cause them envy. Communities create the basis for *Social inclusion*, which is one of the pillars of sustainable development. The Islamic approach to inequality and poverty is complex and sophisticated. This is discussed in detail in Zaman (2019). Very briefly, Islam uses these phenomena to create cooperation and harmony, by encouraging the rich to spend excess wealth on the poor. This leads to the recommended circulation of wealth, and promotes equity.

Environmental Sustainability is created when communities adopt and encourage simple lifestyles, discouraging luxury, ostentation, and conspicuous consumption. Furthermore, the Qur’ān refers to the Muslims as the trustee global community (*ummah wasaʿat*) whose conduct is justly balanced and moderate and who are responsible for ensuring the welfare for all the creations of God. The Prophet (ṢA‘AWS) said, “*The best of people are those that bring most benefit (anf‘a uhum) for mankind.*” (Tabarāni, *Al-Mu‘jam Al-Awsat*). Going further, Prophet Muhammad (ṢA‘AWS) instructed for mercy and compassion to be directed to all of God’s creation (all animate and inanimate creations of God) since each species is a divinely commissioned community (*Ummah*) purposefully created by God. Islam commands human beings to respect all life forms and communities

“*There is not an animal on earth nor a flying creature with wings which do not form communities [Ummah] analogous to you.*” (Qur’ān 6:38)

All communities (*Ummah*) including plants, animals, microorganisms live together in a symbiotic fashion enabling service to each other. Islam teaches humans to respect all *Ummah* and to maintain the essential diversity of all forms of life in the Biosphere and uphold the natural ecological balance (*Mizān*) (Al-Jayyousi, 2016) since any human-induced extinction of a species is thus not only an ecological catastrophe but also a spiritual sacrilege for Muslims.

Living lightly on our living planet, and treating it as a sacred trust from God is already a major step towards inter-generational sustainability. Communities also help by creating a long run perspective, with traditions inherited from the past, and a future which spans generation. As opposed to this, the individualism fostered by market economies leads to a short-sighted perspective confined to the individual, with no concern for the past and future.

6.3. Transforming Politics

Among the changes which accompanied the Great Transformation, the secularization of political theory was the most momentous. Traditional conceptions of society, going back to Aristotle, conceive of society as ‘one body’ working together for common goals. Constant warfare among different factions, Protestants and Christian, led European intellectuals to search for alternative to religion as a basis to organize society; see Zaman, 2013 for more details. Since their historical experience showed them the impossibility of a common vision, modern politics was created as a set of rules for people with diverse goals to live together without conflict. In particular, democracy is an “adversarial” system, where parties with opposing interests agree to play fair, and accept a common set of rules.

The fundamental weakness of the system is that this agreement is external – an agreement to play by rules. It is not based on any internalized ethics, and there are no absolute standards of conduct which all must follow, regardless of rules. As shown in “Modernity and the Holocaust” (Bauman, 2000), if the majority agrees to exterminate the minority by burning them in ovens, this is perfectly in line with the logic of democracy. The far-sighted philosopher Nietzsche (Nietzsche, 1989) saw that abandonment of God, would lead to the need to invent radically different ways of living, going “Beyond Good and Evil”. Discussing the extremes of ruthlessness and violence seen in the 20th Century, Glover writes that there is no solution to the challenge of Nietzsche. In this battle of all-against-all that characterizes modernity, there is no way to deal adequately with social, environmental, and inter-generational responsibilities.

Islamic teachings provide us with a radically different framework for the conduct of politics, both within a nation, and on the international level. Islam appeals to the brotherhood of all human beings, built into the hearts of men, as a basis for creating a harmonious society.

The over-arching framework is one of justice for all, and the Qur’ān asks us to be just even to our enemies, and even when justice requires testifying against our own selves or our own kinfolks and parties. All members of society are bound by these common standards of justice, whether majority or minority. Unlike democracies, majorities cannot vote to imprison and kill minorities. Any such action can be challenged on ground of the Shari’ah law, which overrides any consensus or majority vote. Minority religious groups are given maximal freedom to follow their own religious beliefs, and even have their own laws and regulations, to the extent possible. This permits all to work together and live harmoniously, as exemplified in the “Ornament of the World” (Menocal, 2009).

6.4. Transforming Economics Institutions

Syed Abul Hassan Ali Nadvi (1986) writes that the idea of collective responsibility for the needs of the entire world is one of the gifts of Islam to the civilizations of the world. The Qur’ān assigns to the community of Muslims the task of enjoining the good and prohibiting the evil for all of humanity. This gives us broad responsibility to ensure the provision of education, training, employment, and equal access to economic opportunities. In particular, economic justice involves provision of basic needs to all members of the society. Detailed references and discussions are available in (Zaman, 2010, Section 5.4). Provision of economic security will protect life, create goodwill and harmony in society, provide equality of opportunity, and rectify many injustices. Economic security will also free individuals to turn to higher spiritual and social pursuits.

Polanyi remarks perceptively that collective social will is translated into reality by institutions. Capitalism is characterized by the goal of accumulation of wealth, and the corresponding institution which enable this accumulation, is the bank. The spirit of Islam is generosity, and the corresponding institution is the *Waqf*. A large number of verses of the Qur’ān exhort people to be generous, and to spend on others. Similarly, the Prophet Mohammad (peace be upon him) said, “*The generous man is near Allah, near Paradise, near men and far from Hell, but the miserly man is far from Allah, far from Paradise, far from men and near Hell. Indeed, an ignorant man who is generous is dearer to Allah than a worshipper who is miserly.*” (Al-Tirmidhī, 1961)

WAQF: The spirit of generosity is embodied in the form of the institution of the Waqf, which has played a central role in Islamic history. Hoexter (1998) “a broad spectrum of what we now designate as public or municipal services, e.g., welfare, education, religious services, construction and maintenance of the water system, hospitals, etc. were set up, financed, and

maintained almost exclusively by endowments. Sait & Lim (2006) write that the system of *awqāf* “succeeded for centuries in Islamic lands in redistributing wealth,” leading to equitable outcomes and the circulation of wealth in accordance with Qur’ānic injunctions.

HISBAH: It is easy to see the conflict between market mechanisms for exchange and natural social mechanisms. People who will willingly donate blood as a social service, will refuse to do so in exchange for money. This is why a Hadith mentions that mosques (*masājid*), which promote community and cooperation are the best of places, while markets are the worst of places. The institution of *hisbah* was created from the time of the Prophet to regulate against the evils that markets have a natural tendency to create. The central difference between Islamic markets and capitalist markets lies in regulation, which is operationalized by the institution of *hisbah*. Market societies have a natural tendency towards de-regulation, because wealth created and concentrated by markets also creates the power to change the rules to favor the wealthy. Islamic teachings provide strong checks and regulation against the adverse effects of this tendency. The institution of *hisbah* has a vast range of functions to protect the interests of those who are harmed by markets. The *hisbah*, or the mechanism for accountability, can ensure that firms do not damage the environment, harm the public interest, or cause harm to animals, or to future generations. *Hisbah* protects the public interest in cases where there is no immediate aggrieved party that can take the case to court. In the realm of the marketplace, the *hisbah* ensured that weights and measures were of official standard; provided stamps of quality; ensured that goods being sold were of standard quality by various means; acted against false advertising, hoarding to increase prices, collusion and monopolistic actions; and generally protected the public interest. Issues like pollution of rivers or the environment also fall under the jurisdiction of the *hisbah*. An examination of these different roles and their implementation in different periods of Islamic history is given in Chapter 5 of Naz (1999)

HIMA & HARAM: To protect land, forests, wildlife, and natural resources (such as water), Islam institutionalizes inviolable sanctuaries known as *himā* and *haram*—in which resources are not to be touched. Islam teaches that water, fuel (fire), and pasture are common goods that must be shared by all based on a *ḥadīth*: “*People are partners in three resources: water, pasture, and fire.*” (Sunan Ibn Mājah, Vol. 3, Book 16, Ḥadīth 2472). The Islamic institution of *natural reserves* (*himā*) is used to protect forests and wildlife through which an area of land can be designed by the state as a protected area (*himā*) in which grazing or deforestation is not allowed. While water resources, as well as communal pastures and woodlands, are protected through the religious institution of zoning and land planning

(*haram*). In general, the principle of living lightly on the Earth, as trustees and stewards, and passing it on to the next generation in a better condition from the one in which we received it, is the key to both inter-generational justice, as well and environmental justice.

7. Summary

The massive surplus production made possible by the industrial revolution led to the creation of market societies which create and encourage massive amounts of luxurious and wasteful consumption. This has had disastrous consequences for human communities, as well as the planet. The human-induced ecological crises and the massive inequalities both within countries and across the world are endangering the present and the future of humanity. We argue that the real crisis underlying the environmental crisis is spiritual, and thus, the solution to the environmental crisis can only come through an inner human transformation. In this article, we present Islamic views of sustainable development and argue that the Islamic vision can facilitate the spiritual renewal necessary for mankind through which humans beings can recognize their responsibility as God's trustee on earth to responsibly use natural resources (which are God's gift to the whole of humanity comprising the current as well as future generations) and constructively develop the earth without adversely affecting other human beings, other communities, or the environment. In this regard, Islamic law provides concrete spiritual incentives to individuals as well as the legal instruments to the state that can aid in the implementation and accountability of sustainability projects and pave the way for peaceful intra- and inter-generational human coexistence and the development of a sustainable developed human society.

References

- Abdul-Matin, I. (2010). *Green Deen: What Islam teaches about Protecting the Planet*. California, US: Berrett-Koehler Publishers
- Al-Jayyousi, O. R. (2016). *Islam and sustainable development: New worldviews*. London, UK: Routledge.
- Amir-ud-Din, R., & Zaman, A. (2016). Failures of the "Invisible Hand". In *Forum for Social Economics* (Vol. 45, No. 1, pp. 41-60). Routledge.
- Bauman, Z. (2000). *Modernity and the Holocaust*. Ithaca, NY: Cornell University Press.
- Brundtland, G. H., Khalid, M., Agnelli, S., Al-Athel, S., & Chidzero, B. (1987). *Our common future*. New York, US: Oxford University Press.
- Hoexter, M. (1998). Waqf studies in the twentieth century: The state of the art. *Journal of the Economic and Social History of the Orient*, 41, 474-495.
- Kolbert, E. (2014). *The sixth extinction: An unnatural history*. London, US: A&C Black.
- Mankiw, N. G. (2014). *Principles of economics*. Cengage Learning.
- Martinez-Alier, J., & Muradian, R. eds. (2015). *Handbook of ecological economics*. Cheltenham, UK: Edward Elgar Publishing.

- Menocal, M. R. (2009). *The ornament of the world: How Muslims, Jews, and Christians created a culture of tolerance in medieval Spain*. New York, NY: Back Bay Books.
- Nadvi, Syed Abul Hassan Ali. (1986). *Tahzeeb aur Tamaddun par Islam kay Ihsanat aur Asarat. [The Gifts and Effects of Islam on World Culture and Civilization]*, Karachi: Majlis-e-Nashriyat-e- Islam.
- Naz, M. S. (1999). *Islami Riyasat main Muhtasib ka Kirdar [The Role of the Muhtasib in an Islamic State]* Islamabad, Pakistan: International Islamic University of Islamabad, Islamic Research Institute.
- Nietzsche, F. W. (1989). *Beyond good and evil: Prelude to a philosophy of the future*. New York, US: Vintage Books Edition
- Polanyi, K. (1944). *The great transformation: the political and economic origins of our time*. New York, US: Rinehart.
- Qadir, J., & Zaman, A. (2019) . Sustainable development viewed from the lens of Islam. *International Journal of Pluralism and Economics Education*, 10(1), 46–60.
- Sachs, J. D., Layard, R., & Helliwell, J. F. (2018). *World Happiness Report 2018* (No. id: 12761).
- Sait, S., & Lim, H. (2006). *Land, law and Islam: property and human rights in the Muslim world* (Vol. 1). Zed Books.
- Schluter, M. (Sept. 2009). *Is Capitalism morally bankrupt? Five moral flaws and their social consequences*. Cambridge Papers: vol 18 n 3 ISSN 1361-7710.
- Zaman, A. (2010). Islamic economics: A survey of the literature. *Islamic Studies*, 49(1), 37–63.
- Zaman, A. (2010). Scarcity: East and West. *Journal of Islamic Economics, Banking and Finance*, 6(1), 87–104.
- Zaman, A. (2013). *European Transition to Secular Thought: Lessons for Muslims. Insights, Da`wah Academy, IIUI, Islamabad*. Download from: <https://sites.google.com/site/azcurrentresearch/home/general-topics/transition>.
- Zaman, A. (2019). Islam’s Gift: An Economy of Spiritual Development. *American Journal of Economics and Sociology*, 78(2), 443–491.

CHAPTER 4

PROGRESS ON SUSTAINABLE DEVELOPMENT GOALS IN MUSLIM MAJORITY COUNTRIES

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Abstract

In the theoretical literature, the term ‘economic development’ has been interpreted differently in different time periods. In the post-World War II period, both the terms ‘economic growth’ and ‘economic development’ were used interchangeably. It was thought that economic wellbeing in material sense by virtue of increased overall production and income is enough to exhibit human well-being. The concept of income and wealth inequality was either overlooked or undermined. Then, the rising income inequality shifted the focus towards inclusive economic growth. In addition to that, the accelerated use of environmental resources to support economic growth raised concerns about environmental sustainability. Now, the term ‘sustainable and inclusive economic development’ encompasses the concept of inclusivity as well as environmental sustainability. This chapter explains that the aims of sustainable development are harmonious with the philosophy and institutions of Islamic finance. This chapter has two aims. First, it measures the performance of Muslim majority countries on sustainable development parameters. Second, it discusses how Islamic finance principles, institutions and instruments can assist in making progress towards meeting the goals of sustainable development. To achieve the first objective, this study establishes a novel index to measure the progress of Muslim majority countries on the 17 Sustainable Development Goals (SDGs). To achieve the second objective, this study outlines the Islamic approach to sustainable development through the Islamic value framework along with Islamic commercial finance and Islamic social finance institutions.

Keywords: Economic Development, poverty, income inequality, sustainable development, SDGs, Islamic finance

1. Evolution of the Concept of Development

The early development economics literature emphasized on capital accumulation to achieve economic development in the sense of industrialization and transition from traditional economies to modern, urban and industrial ones. Haq (1963) coined the term ‘functional inequality’ to support rationale for tolerating initial inequalities if they come with industrial development as long as the benefits of economic growth trickle down. But, trickle-down was an expectation that did not materialize the way it was naturally expected. Based on appreciation of Harrod (1939)-Domer (1946) and Solow (1956) growth models, Haq (1963) contented:

“There exists, therefore, a functional justification for inequality of income if this raises production for all and not consumption for a few. The road to eventual equalities may inevitably lie through initial inequalities.”

The concept of functional inequality was based on the social utility of greed. The promised trickle-down effect did not materialize (Zaidi, 2005). Later on, even Haq (1995) himself conceded that human beings are ‘means’ and also the ‘ends’ of process of development. Therefore, it was learnt that it is erroneous to regard economic growth as sufficient to achieve economic development. When it comes to human well-being, non-economic aspects also matter in terms of strong institutions, rule of law, social freedoms, freedom of expression, democratic rights and fair political representation, to name a few. Stieglitz (2012) argues that unequal growth powered by crony capitalism threatens the democratic fabric of society.

The conceptualization of humans as utility-maximizing species or machine-like inputs in the production process needs to be replaced with the treatment of humans as morally conscious beings who require both physical as well as spiritual well-being to foster sustainable co-existence. In the subsequent literature and discourse, the concept of economic development was broadened to include non-economic aspects of well-being. The concept of sustainable development now encompasses environmental concerns together with a human-centered vision of development. In light of this need, this study proposes a novel index that measures performance on each of the Sustainable Development Goals (SDGs) for the Muslim majority countries. Then, the study identifies the set of Islamic finance instruments and institutions that can provide an effective basis of funding and intervention to achieve progress in each of the SDGs.

2. Contemporary Environmental Sustainability Challenges

We face enormous environmental challenges in post-industrial society. In the human age of existence in the ecosystem, the post-industrial era has challenged the planetary boundaries and

has caused unprecedented loss of biodiversity. Paul Crutzen introduced the term ‘Anthropocene’ in the mid-1970s and the term is used in the context of pollution emissions that are produced as a result of human activities. Individual self-interested behaviour, money based usurious financial intermediation and detachment of moral values in the post-industrial human relation with ecosystem and environment are the contributing forces to this state of affairs.

We have pushed planetary boundaries through the unprecedented burning of fossil fuels, rapid deforestation, contamination of seas and which has caused a rise in temperature, frequent heat waves, floods, melting of glaciers and enormous loss of marine and tropical forest species. It is estimated that continued use of fossil energy will lead to an increase in the average global temperature by 1.0–3.5 degrees Celsius in the coming 50–100 years. (Dagobert, 2000). Cook et al. (2013) reveal that 97.1% of the scientists endorsed the consensus position that humans are causing global warming.

In addition to the above anthropogenic disruptions, the global sea levels have risen by about 8 inches since 1870, according to the World Research Institute. As the ice caps melt and sea levels rise, the potential for floods increases. Sea levels are predicted to rise by 20 to 80 inches by 2100, according to a report by Surging Seas. Ironically, we have a garbage island of the size of India, Europe and Mexico combined floating in our oceans. The oceans absorb as much as 25% of all human carbon dioxide emissions. On the other hand, we also waste almost half of the food that we produce (Lundqvist, 2008).

Forests cover 30% of the planet’s land and provide vital protection from sandstorms and flooding as well as essential natural habitat for wildlife. Yet, every single year we lose an area equal to the size of Panama. Humans have already chopped down about 50% of the rainforests that once existed on the planet in the last half-century alone. Deforestation simply means clearing of green cover. Over the last 250 years, the surface acidity of the ocean has increased by an estimated 30%. The acidity is expected to increase by 150% by 2100. According to a research study published in *Nature*, by 2050, rising temperatures could lead to the extinction of more than a million species.

According to the World Health Organization, air pollution is now the world’s largest single environmental health risk. Air pollution is responsible for approximately 3.7 million deaths a year. Going forward, cities will generate approximately 2.2 billion tonnes of solid waste per year by 2025 which could poison soil and waterways, kill plants, and harm humans and animals.

According to the United Nations Environment Program (2016), natural capital has declined in 116 out of 140 countries. Greenhouse gas emissions add energy to the Earth’s

system at a rate equivalent to the detonation of four nuclear bombs every second. On average, 26.4 million people have been displaced from their homes by natural disasters every year since 2008. Quite alarmingly, one-third of the world's arable land is jeopardized by land degradation, triggering economic losses of \$6.3 to \$10.6 trillion per year. Khan (2019) argues that the linear economy paradigm is still influential. In the economics of exploiting natural resources, the ecological environment is not recognized as a resource (Hotelling, 1931).

Hassan and Shaikh (2019) examine the state of OIC countries in sustainable development goals. Bashir and Hassan (2005) examine the financial development and economic growth in the OIC Muslim countries. BinMahfouz and Hassan (2013) shows empirically how Islamic investing contributes to sustainable and socially responsible investing. Ashraf and Hassan (2012) show how Islamic social finance contribute to poverty alleviation by developing an integrated mode combining zakat, Awqaf and microfinance.

All these alarming facts emphasize the need for pre-emptive action to help change the way we produce, consume and live. It requires a structural transformation of our business processes, food production and technological capacities. We need a reflective change in our value system to have a more caring relationship with the eco-system.

3. Sustainable Development Goals and the Muslim World

Millennium Development Goals have been succeeded by SDGs which target sustainable development in a broader sense by emphasizing directly on poverty, hunger, quality education, health, inclusivity and environmental sustainability. These SDGs revolve around human and societal well-being.

Muslim countries represent a quarter of the global population, but host almost half of all the poor in the world. The major concentration of the Muslim population is in Asia and Africa. Most of the Muslim majority countries in Africa are also classified under Highly Indebted Poor Countries (HIPC) by World Bank, such as Benin, Burkina Faso, Chad, Comoros, Cote D'ivoire, Gambia, Guinea-Bissau, Mali, Mauritania, Niger, Senegal, Sierra Leone, Somalia, Sudan, Togo and Uganda. Barring relatively developed countries like Brunei, Malaysia, Turkey, Kazakhstan and natural resource-rich countries in GCC like Qatar, Kuwait, UAE, Saudi Arabia, Bahrain and Oman which have annual per capita income above \$8,000, other countries have less than impressive standing. The relatively rich countries are smaller in population, while populous countries like Indonesia, Pakistan, Bangladesh and Nigeria have a significant number of poor people. In most of the OIC member countries in Africa and Asia, financial markets are relatively less developed and governments have weak capacity and governance.

Making progress towards achieving SDGs first requires measuring the current status of sustainable development in different countries and regions. This can assist both the multi-lateral development agencies as well as the local governments to have targeted interventions in key areas of concern in particular regions for effective outcomes. Measuring performance on sustainable development can assist in identifying priority areas and projects requiring attention in funding and assistance. It can help in ensuring informed policymaking. In measuring performance, the advantage of using indices is that they summarize complex realities and allow attention towards particular pain points which require attention in policymaking and allocations. They also provide a useful framework for comparison among different countries at a particular point in time and also over a period of time. Therefore, this chapter aims to fulfil this need for providing an analytical framework as well as analysis to aid informed policymaking. Secondly, it also outlines how Islamic commercial and social finance institutions can play the role of catalyst in making progress towards achieving SDGs.

4. Methodology of Developing Sustainable Development Index

For constructing this index, the data had been taken from the World Development Indicators (WDI) for 40 OIC member countries. The sample selection is based on the availability of data on each indicator used in the study so that the results are reliable and comparable. For each country, the value of each variable is taken for the most recent year available. For some countries, where data is missing, the data is taken from CIA Factbook.

Table 1 reports the indicators used for measuring progress on each of the sustainable development goals. The weights are also given to each indicator in each category. To avoid bias, we use equal weights for each indicator as per the standard practice. Within each category, the sum of the weights equals unity. In equation (i), we present the formula for measuring the values for Sustainable Development Index (SDI):

$$SDI = \frac{1}{17} \sum_{i=1}^n SDG_i \quad \text{--- (i)}$$

Since the units for indicators differ from each other, we use the following procedure in line with the Human Development Index to normalize the index value:

$$Indicator\ Index\ Value = \frac{Actual\ Value - Minimum\ Value}{Maximum\ Value - Minimum\ Value} \quad \text{--- (ii)}$$

Normalization helps in obtaining standardized values within [0, 1] bound irrespective of the units in which indicators are measured. For some indicators, the higher value has a negative interpretation, for instance, unemployment rate, Gini coefficient, CO₂ emissions and poverty

rate. The index value for such indicators is taken with a negative sign in the SDI value computation. Higher SDG value within a category represents greater progress. Lower SDI value represents lower progress on sustainable development. SDG value is measured for each SDG separately. Overall SDI value measures the sum of SDG values across all 17 SDGs.

Table 1. Indicators for Sustainable Development Index

SDG	Indicator Name	SDG	Indicator Name
SDG1	Poverty Headcount Ratio	SDG9	FDI Inflows (Net)
SDG2	Food Deficit Depth	SDG9	Gross Fixed Capital Formation
SDG3	Expectancy of Life	SDG9	Access to Electricity
SDG3	Per Person Health Expenditure	SDG10	Gini Coefficient Index
SDG3	Mortality Rate for Infants	SDG11	Productivity of Water
SDG4	Enrolment Rate (Net) in Primary	SDG11	Access to Cooking Fuel
SDG4	Out of School Children	SDG11	Per Capita Renewable Fresh Water
SDG4	Rate of Literacy	SDG12	Carbon Emissions Per GDP
SDG5	Gender Non-Discrimination Laws	SDG12	Carbon Emissions Per Person
SDG5	Unpaid Maternity Leave Legislation	SDG13	Renewable Electricity Product
SDG5	Ban on Child Marriage Legislation	SDG13	Renewable Electricity Output
SDG6	Water Scarcity and Stress Level	SDG13	Renewable Energy Consumption
SDG6	Population with Drinking Water	SDG14	Protected Areas (Marine)
SDG6	Population with Adequate Sanitation	SDG15	Performance Index for Logistics
SDG7	Hydel Based Electricity Production	SDG15	Ill Health Conditions Causing Death
SDG7	Nuclear Based Electricity Production	SDG15	Terrestrial Protected Areas
SDG7	Oil & Gas Based Electricity Production	SDG16	Index of Strength of Legal Rights
SDG8	Ratio of Employment in Population	SDG17	Ease of Doing Business
SDG8	Per Capita GDP	SDG17	Net ODA Received Percent of GNI
SDG8	Rate of Unemployment	SDG17	Net ODA Received Percent of GCF

5. Results and Findings

This section summarizes the results and findings from the data analysis. In Table 2, overall results are provided by summing the scores on sub-indices of 17 SDGs.

Results reveal that high-income Muslim majority countries like Turkey and Malaysia feature relatively at the top in SDI. On the other hand, the bottom ranks are mostly filled by poor developing Muslim majority countries in Africa. Interestingly, it is found that in the presence of weak institutions and bad governance, natural resources abundance does not make up for the weakness of prior conditions of sustainable growth, i.e. strong social infrastructure and institutions. Countries like Nigeria and Iraq perform less impressively in

SDI. But, there are some success stories as well. Countries in Central Asia which got independence after the fall of USSR show remarkable recovery post transition. Albania and Bosnia which were once affected by genocide and war crimes have also turned the corner and do much better than many other countries.

These success stories may well be attributed to the regional features as well. To begin with, Central Asian and European countries did not have to deal with same level of under development, which has been the unfortunate fate of African countries after a long period of colonization. Regionally, South East Asian, Central Asian and European countries show much better performance on SDI as compared to countries in South Asia, Africa and some conflict-hit Middle Eastern countries.

Among the African regions, all is not bleak as countries like Morocco, Algeria and Gabon perform relatively better. In the Middle-Eastern region, besides the oil-rich countries, Lebanon and Jordan also show reasonable performance on SDI.

Country	SDG-Index Value	SDG Index Rank	Country	SDG-Index Value	SDG Index Rank
Albania	0.25818866	1	Togo	0.078534272	21
Kazakhstan	0.223486621	2	Uganda	0.075609858	22
Kyrgyz Rep	0.221600296	3	Bangladesh	0.074597535	23
Bosnia	0.193495703	4	Sudan	0.073030672	24
Azerbaijan	0.192088057	5	Cote d'Ivoire	0.069674121	25
Malaysia	0.17971293	6	Cameroon	0.067433558	26
Jordan	0.176398053	7	Iraq	0.061908237	27
Maldives	0.174142963	8	Senegal	0.05649823	28
Turkey	0.168383517	9	Niger	0.05198618	29
Tajikistan	0.158671948	10	Mali	0.04547533	30
Indonesia	0.149894875	11	Nigeria	0.037649151	31
Gabon	0.140975849	12	Djibouti	0.033645438	32
Morocco	0.133001249	13	Benin	0.023017141	33
Algeria	0.124211772	14	Mozambique	0.018856207	34
Lebanon	0.122283311	15	Sierra Leone	0.015876447	35
Guinea	0.120467276	16	Burkina Faso	0.01407851	36
Egypt	0.112250122	17	Guinea-Bissau	0.007673941	37
Iran	0.092798559	18	Comoros	-0.000453615	38
Pakistan	0.084964222	19	Yemen	-0.007891107	39
Mauritania	0.082706443	20	Chad	-0.042502504	40

Next, we present the ranking of countries on individual SDG sub-indies for each of the 17 SDGs. Tables 3A and 3B present the results. Since countries have a different rank on different indicators, the results are presented for countries in alphabetical order. The results highlight that Muslim majority countries with relatively high per capita income generally have lower rates of poverty, for instance, the East Asian and Central Asian countries. Most of the Muslim majority countries with high rates of poverty include African and South Asian countries. On Hunger (SDG 2), a similar tendency is revealed. Nonetheless, some of the vulnerable countries on the depth of food deficit include countries that have per capita income in excess of \$1,500, such as Sudan and Pakistan. On health indicators (SDG 3), the ranking of countries is quite resonant with their level of per capita income. Bosnia, Iran, Albania and Algeria have better standing on SDG 3. High-income countries are able to spend more on health partly through better-funded governments and partly because people with relatively better per-capita incomes are able to afford basic health needs themselves privately.

In educational indicators (SDG 4), Central Asian countries overtake East Asian countries, such as Malaysia and Indonesia. In the Middle Eastern bloc, Jordan, Lebanon and Iran rank relatively better. In African regions, Gabon, Algeria and Egypt are stand-out performers. Interestingly, Bangladesh despite comparable or lower per capita income ranks higher than Pakistan, Sudan and Nigeria. It goes on to show that progress on health and education is partly a function of income, but also of policy and effectiveness of institutions. On gender equality indicators (SDG 5), African countries are not as much behind as some of the conservative cultures in South Asia and Middle East. It could partly be a function of income. In countries where the households have enough income even with single bread-earner in the family, women labour force participation is generally lower.

On clean water and sanitation (SDG 6), Malaysia and Turkey tops the charts. Unsurprisingly, African countries with high water scarcity rank lower on SDG 6. On affordable and clean energy (SDG 7), it is interesting to note that low-income African and Asian countries like Mozambique, Pakistan and Uganda rank higher than the high-income Middle Eastern countries like Jordan and Yemen.

On decent work and economic growth (SDG 8), some of the African countries rank higher due to the lower unemployment rate and high employment to population ratio despite lower GDP per capita. In the absence of sufficient public social safety nets and unemployment benefits and insurance, the poor people have no choice, but to engage in laborious work even if gainful employment itself does not put them fully out of poverty.

On industrialization and infrastructure (SDG 9), high-income countries rank above low-income countries. The pattern also has geographical significance. East Asian, Central Asian and European countries rank higher as compared to African and South Asian countries.

On inequality, some countries are on one or the other side of the Lorenz curve. High-income countries like Malaysia and Turkey have high income inequalities as well. It suggests that they are still not able to achieve long-term consistent growth to experience downward shift in inequality. But, some African countries are not even making a trade-off and are having a loss-loss scenario with lower economic growth and higher income inequality, such as Benin, Guinea-Bissau and Mozambique. On sustainable cities indicators (SDG 11), countries with high urban population ratio and populous metropolitan cities rank higher. On the other hand, countries in Africa with high rural-urban population ratio along with absence of large metropolis rank lower on this indicator. Among the populous countries, Pakistan and Bangladesh rank lower than Indonesia.

On responsible consumption (SDG 12), it turns out that habits do not form just because of high incomes. Some African countries rank relatively better as compared to high-income countries. Among the populous countries, Pakistan and Indonesia rank lower than Bangladesh. On climate action (SDG 13), African countries rank better than Middle Eastern countries like Iraq, Lebanon, Jordan and Yemen partly because of external intervention by aid agencies and also because they have shortfall of available for use energy resources to begin with. High-income countries like Turkey and Malaysia also rank lower. It goes on to show that the 'sleep mode' has to be avoided by Muslim majority countries as well since high-income alone cannot make-up for severity in environmental crises and resources.

On life below water (SDG 14), Bangladesh ranks better than Indonesia, Malaysia and Maldives. Simple life-styles and fondness for water-related food may have improved treatment of marine life as it is a vital source of food in the region. Nonetheless, countries in Africa with water scarcity are unable to live responsibly and congenially with marine life as much as is expected. On life above land (SDG 15), Malaysia and Turkey rank higher. But, low-income countries rank lower except for Morocco, Egypt and Iran.

Table 3A. Ranking of Countries on SDI Sub-Indices (SDG 1 to SDG 9)

Country	SDG 1	SDG 2	SDG 3	SDG 4	SDG 5	SDG 6	SDG 7	SDG 8	SDG 9
Albania	10	30	6	7	5	7	1	30	6
Algeria	9	9	8	15	17	12	33	29	3
Azerbaijan	1	2	11	2	2	13	27	8	4
Bangladesh	22	26	17	17	32	18	31	15	23
Benin	35	18	34	36	9	33	36	5	30
Bosnia	5	6	3	12	6	4	12	40	17
Burkina Faso	32	31	30	34	38	35	15	16	36
Cameroon	27	22	31	18	33	28	9	21	27
Chad	31	39	39	39	40	40	40	12	38
Comoros	24	40	25	28	23	23	29	25	25
Cote d'Ivoire	28	24	37	30	8	27	17	10	28
Djibouti	26	27	27	21	7	21	37	26	20
Egypt	11	3	13	16	31	6	25	33	19
Gabon	20	7	19	14	30	20	13	37	10
Guinea	21	25	33	38	10	31	11	14	24
Guinea-Bissau	40	28	35	23	20	30	39	13	40
Indonesia	18	19	16	9	15	17	24	7	14
Iran	6	13	5	13	29	10	18	34	9
Iraq	13	37	15	31	25	14	28	28	18
Jordan	4	4	10	6	13	5	34	36	13
Kazakhstan	2	8	9	1	1	8	26	4	2
Kyrgyz Rep	12	16	14	3	12	11	3	20	1
Lebanon	3	11	2	11	28	9	32	24	11
Malaysia	8	5	4	10	16	1	22	3	12
Maldives	19	14	1	4	3	3	30	9	7
Mali	36	10	36	35	27	26	14	19	37
Mauritania	16	15	24	29	24	25	16	31	21
Morocco	14	12	12	20	18	15	23	27	8
Mozambique	39	35	32	27	22	37	4	35	5
Niger	33	20	29	40	11	38	35	1	32
Nigeria	38	17	38	26	21	29	20	11	31
Pakistan	17	33	26	24	35	19	6	18	22
Senegal	30	21	20	32	26	22	21	23	26
Sierra Leone	37	29	40	37	39	36	10	17	39
Sudan	23	34	22	25	36	32	8	39	33
Tajikistan	15	38	18	5	4	16	2	32	16
Togo	34	23	28	22	19	34	5	2	29
Turkey	7	1	7	8	14	2	19	22	15
Uganda	29	32	23	19	34	39	7	6	34
Yemen	25	36	21	33	37	24	38	38	35

Country	SDG 10	SDG 11	SDG 12	SDG 13	SDG 14	SDG 15	SDG 16	SDG 17
Albania	5	16	18	8	10	5	4	12
Algeria	4	12	33	40	27	13	31	39
Azerbaijan	1	13	29	33	23	11	30	15
Bangladesh	10	29	15	28	5	19	21	40
Benin	38	28	28	26	39	20	8	26
Bosnia	12	17	37	21	4	12	5	17
Burkina Faso	19	31	7	17	37	28	14	18
Cameroon	37	23	4	4	8	38	20	36
Chad	33	38	1	16	36	35	18	29
Comoros	35	27	8	27	30	29	15	21
Cote d'Ivoire	28	26	13	15	28	23	11	30
Djibouti	34	25	20	32	18	37	37	19
Egypt	9	10	32	30	6	3	27	31
Gabon	30	2	14	11	15	27	13	1
Guinea	15	33	11	10	20	24	12	23
Guinea-Bissau	39	37	10	18	3	33	17	2
Indonesia	24	19	21	22	9	6	6	20
Iran	23	7	38	35	16	7	28	32
Iraq	6	9	36	36	40	25	39	37
Jordan	14	4	34	38	1	10	38	10
Kazakhstan	3	11	40	34	14	9	24	9
Kyrgyz Rep	2	14	39	13	35	17	2	5
Lebanon	8	6	27	37	24	8	29	27
Malaysia	36	3	35	31	12	1	3	7
Maldives	22	1	19	29	29	16	33	33
Mali	13	40	2	12	34	36	19	14
Mauritania	11	20	17	9	7	40	34	25
Morocco	26	8	23	24	22	2	26	11
Mozambique	40	35	24	3	11	26	36	6
Niger	18	39	9	19	38	32	16	8
Nigeria	31	32	6	14	31	34	1	35
Pakistan	7	21	31	20	17	14	32	34
Senegal	25	24	22	23	13	22	10	24
Sierra Leone	17	34	12	5	19	39	22	3
Sudan	20	22	5	6	2	31	25	38
Tajikistan	16	15	26	7	33	15	35	22
Togo	32	30	25	2	25	18	7	28
Turkey	29	5	16	25	26	4	23	16
Uganda	27	36	3	1	32	21	9	13
Yemen	21	18	30	39	21	30	40	4

On strength of legal rights (SDG 16), Pakistan despite having relatively better per capita income than some other poorer countries ranks lower. African countries like Uganda, Benin and Togo despite lower per-capita income rank in the top 10 list. On strengthening global partnerships, Muslim majority countries do not trade much among themselves. The flow of aid is also received mostly from the developed countries partly because some of the African countries find their neighbourhoods equally eager in need of assistance. Africa receives more official development assistance. However, there is need for more inter-group mobilization of resources among the Muslim majority countries rather than relying on Western aid alone which often also comes with certain political and trade bonds.

6. Islamic Value Framework and Sustainable Development

As discussed before, the world is still facing serious food insecurity, hunger, poverty, inequities, climate change, loss of biodiversity, waste and existential threat to life on this planet for future generations due to the damage caused by humans through waste, pollution and showing inaction for corrective measures.

According to the World Health Organization, over 820 million people are suffering from hunger in 2019 despite a consistent rise in per capita food production ever since the 1970s. As per Oxfam, 26 people together own the same amount of wealth as the combined wealth of 3.8 billion people who make up the poorest half of humanity. The redistribution of resources through taxation is ineffective. According to Oxfam, only 4 cents in a dollar of tax revenue come from wealth tax. Even progressive income taxation has not been able to check rising inequities both in the developed and developing countries. The rich people and countries having enough economic muscle to invest in green technology and infrastructure are doing very little. Oxfam reports that around 50% of all carbon emissions are emitted by the richest 10% of the world's population.

Tied aid and debt servicing on money debt result in more money flowing out of poor countries in the form of debt servicing and imports as compared to the aid that comes in. Ending poverty and hunger does not require insurmountable financial resources. But, the lack of political will and greed leaves much of the population in South Asia and Africa to face poverty despite a consistent rise in the overall value of Gross World Product. It is estimated that \$600 million daily is needed to feed every poor person, yet about \$2.75 billion value of food is wasted every day, according to the Food and Agricultural Organization. The ecological imbalance also stems from the lifestyle where there is tacit approval on overspending, indebtedness, and ethical neutrality towards responsible use of resources without waste.

On the other hand, interest-based financial intermediation provides risk-less means of earning for the wealthy and rich to continue wealth accumulation and avoid wealth taxes through various means of parking wealth in different parts of the world in various forms. According to Oxfam, 26 wealthiest people own \$1.4 trillion. Interestingly, 10% interest on it can give them a risk-free increase in wealth of \$140 billion, just enough to feed all the poor people for eight months of the year alone.

While reflecting on these facts, one can comprehend that a value system which idealizes and gives absolute liberty for pursuing self-interest is unable to help create social change by looking beyond one's interest and affairs in life. Also, in a society with high income and wealth inequality, policymaking under democracy struggles to reflect the will of the people and to work for the common good of all.

Looking at the current financial system, banks lend money on interest to those who have collateral. Poor are targeted to save with banks but are excluded when it comes to obtaining finance. Money flows mainly from a large number of small savers to a small number of big corporations and upper-class people. This can cause a rise in inequities in society. Hence, there is a need for an economic framework that brings moderation, responsibility, conservation, dignity of life, empathy, sharing, equitable distribution and justice in society.

In the Islamic social policy framework, the policy objectives which underpin the policies, institutions and their functioning are known as *Maqasid-e-Shari'ah* (higher objectives of Islamic teachings). Table 4 outlines *Maqasid-e-Shari'ah* and illustrates the implications of the higher objectives of Islamic teachings in social policy. It can be seen that the policy framework in the Islamic paradigm is very much harmonious with SDGs.

Table 4. Maqasid-e-Shari'ah and their Implications in Policy Design and Approach	
Maqasid-e-Shari'ah	Implications in Policy Design and Approach
Spirituality <i>(Hifdh al-Deen)</i>	Belief and value system emphasizes moderation, responsibility and justice.
Physiology <i>(Hifdh al-Nafs)</i>	Emphasis on hunger, malnourishment, stunting, cleanliness and sanitation.
Intellect <i>(Hifdh al-Aqal)</i>	Emphasis on human capital including education and innovation.
Sustainability <i>(Hifdh al-Nasl)</i>	Emphasis on resource conservation, biodiversity and ecosystem.
Economy <i>(Hifdh al-Maal)</i>	Emphasis on employment, need fulfilment, economic opportunities and equitable distribution.

7. Role of Islamic Commercial Finance in Sustainable Development

Achieving sustainable development rests on the availability of funds, infrastructure, inclusive growth, creation of jobs, 'environment-friendly' technological advancements and business processes re-engineering. All of this is not going to be possible without the availability of funds. At the global level, investment in infrastructure is estimated to be \$100 trillion over the next two decades (Ahmed et al., 2015).

In the Middle East, there is potential to use solar energy given the climate conditions in the region. In the Arab World, per capita renewable water resources have gone down from an average of 2,925 cubic metres a year in 1962 to an alarming level of 743.5 in 2011 below the poverty line level of 1,000 cubic metres a year and far below the world average of 7,240 cubic metres a year (UNDP, 2013). Lack of financing is one of the major obstacles for the minimal use of renewable energy in developing countries. Financial sectors of developing countries are often underdeveloped and are unable to efficiently channel credit to produce renewable energy.

Governments in developing countries have much more distance to travel in achieving the SDG targets and yet they generally have a weak tax base to work with. Because of the transformative and sustainable nature of the new development agenda, all possible resources must be mobilized if the world is to succeed in meeting its targets (Ahmed et al., 2005). The financial crisis of 2007-09 and subsequent contagion effects have not helped in improving the commitment to provide 0.7% of Gross National Income as Official Development Assistance (ODA) by the developed countries to the underdeveloped ones.

For Muslim majority countries in particular, Islamic finance has tremendous potential and variety of instruments and institutions to contribute in mobilizing funds development finance. For instance, Sukuk can be used to finance infrastructure. Diminishing Musharakah can be used to finance real estate infrastructure. Islamic microfinance and *Takaful* can be used to provide access to finance to poor Muslims and bridge the market gap between loan sharks and formal Islamic commercial banks. Empirical studies have found a positive link between Islamic finance development and Environmental, Social and Corporate Governance (ESG) scores (Paltrinieri et al., 2020).

Global Shari'ah-compliant assets totalled \$2.6 trillion at the end of 2018, according to the Global Islamic Finance Report 2019. With resilient growth, effective risk mitigation and participative modes of financial products, Islamic finance promises to play a significant role, especially in the Muslim world. Islamic finance has some distinct advantages over the usurious interest-based financial intermediation. In the US, the share of total corporate profits generated

in the financial sector grew from 10% in the early 1980s to 40% in 2006. These earnings are transaction costs for the productive sector. Financial institutions that were just supposed to be playing a supportive role in the productive economy got much bigger and unregulated through shadow banking practices. Islamic finance as a form of financial intermediation offers tremendous potential in reinforcing links between finance and the real economy.

The permissibility of earning interest on money lent creates distributive inequity in the financial flows as well as delinks the financial flows with the real economy. Tremendous financial investments in exotic financial derivatives and money markets ensure a return to the financial capitalist on fiat money without having any commitment to give back to society any tangible real benefit. If the liquidity in the financial system is used to earn money on money lent without any contribution to the real economy, then the availability of funds will be scarce and the cost of funds will be higher for achieving the ends of sustainable development. The global financial architecture is designed to protect and preserve the linear economic paradigm rather than promote the circular economy (Khan, 2019).

A real economy based productive enterprise in Islamic finance has positive implications for the ecosystem. In Islamic equity-based modes of finance, risk-sharing shifts the emphasis from the credit-worthiness of the borrower to the value creation and economic viability of investments that can create new wealth. On the other hand, high levels of debt in the conventional interest-based financial architecture are one of the prime causes of financial crises (Buiter & Rahbari, 2015; Mian & Sufi, 2015).

As per Islamic Development Bank (2015), innovative Islamic financial instruments, especially for infrastructure development such as *Sukuk*, can be used to mobilize resources to finance water and sanitation projects (SDG-6), sustainable and affordable energy (SDG-7), and building resilient infrastructure (SDG-9) and shelter (SDG-11). As part of its commitment to the SDGs, the Islamic Development Bank has announced that it will increase its funding of SDG related activities through its ten-year strategy framework, from \$80 billion recorded during the MDGs, to \$150 billion over the next 15 years (2016-2030).

Islamic banks generally have greater liquidity due to limited money market instruments available to them. Hence, the liquidity in the Islamic financial system can be utilized for issuing Green *Sukuk*. Secondly, a lot of Muslim majority countries have high financial exclusion. Islamic finance can cater to the financially excluded population which avoids banking due to religious reasons. Once the funds and savings of the non-banked population come in financial institutions, these funds can be used for increased financing of green

infrastructure. In addition to that, it will allow mobilization of financial resources indigenously as much as is possible without resorting to external financing.

Global development institutions like the Islamic Development Banks, Asian Development Bank and the World Bank can also use Islamic instruments to finance the green infrastructure and projects in the Muslim majority countries (Alam et al., 2016). Furthermore, the use of Islamic finance instruments in capital markets can allow wider investor participation from those investors who are looking for Shari’ah compliant, ethical and impact investments. Islamic finance investments in infrastructure projects are not only Shari’ah compliant, but also have an ethical and impact value proposition. Hence, they can be attractive to a wider and global investor base.

8. Role of Islamic Social Finance in Sustainable Development

Since the gap to fill in underdevelopment is huge in the case of most of the Muslim majority countries, institutions that have a social and non-commercial nature can also be employed in creating synergistic efforts towards achieving the development objectives. It has become even more important since the COVID-19 outbreak has reversed some vital progress on SDGs.

Low growth, high expenditure on relief and high fiscal deficit has left fewer resources for investment in environmental projects. Projects relying on private crowdfunding face constraints as corporations and labour force see decline in incomes. Table 5 gives a list of worrisome developments following COVID-19 which have dampened progress on some vital SDGs.

Worrisome Indicators	Progress on SDG Affected
Increased poverty	SDG 1
Rise in hunger	SDG 2
5.2 million deaths, but air pollution kills 7 million a year	SDG 3
No schooling for many children for over a year	SDG 4
Increased unemployment	SDG 8
Decline in industrial growth	SDG 9
Large corporations survived, but retail sector suffered	SDG 10
More use of packing material, more nuclear travel	SDG 11
Law and order deterioration	SDG 16

8.1. Role of *Zakāt* in Humanitarian Assistance

Redistributive function in Islamic framework revolves around involuntary charity in the form of *Zakāt* including *Ushr* and voluntary charity in the form of *Sadqat*. The institution of

Zakāt and *Ushr* constitute involuntary charity through which resources flow from the richer segments of the economy and society to the poorer segments of the society. It is a social protection tool for the welfare of the poor, underprivileged and vulnerable members of Muslim society. It provides the basis of the concept of welfare society through solving problems such as poverty, indebtedness and inequitable income distribution.

Through the exemption limit, known as *Nisāb*, the institution of *Zakāt* achieves effective targeting (Metwally (1983). Since *Zakāt* redistributes both wealth as well as income, it is not dependent on economic growth. In this respect, it acts as an automatic stabilizer. Unlike progressive taxes which have not been able to check income inequality as much as was expected (Hartman, 2002), the wider base in *Zakāt* can achieve income and wealth redistribution more effectively.

The first two SDGS, i.e. ending poverty and hunger require mobilization and allocation of funds without the constraints of commercial viability of the socially vital poverty and hunger alleviation projects. In this respect, *Zakāt* can help in mobilizing resources for poverty alleviation and reducing food deficit. It can also be used to provide employment to masses by funding micro-enterprises. Educational scholarships and health related subsidised and free services can also be provided through mobilization and disbursement through the institution of *Zakāt*.

8.2. Role of *Waqf* in Mobilizing and Institutionalizing Philanthropy

In Islamic finance, *Waqf* is a vital social finance institution. Under *Waqf*, a person owning an asset or property parts away with ownership and dedicates it for the beneficial use by other members of society at large. *Waqf* can enable the provision of dedicated public social safety nets which provide beneficial services to the public at large on permanent basis.

In Cash *Waqf*, the pool of social savings can be used to establish public welfare institutions, for instance, schools, hospitals, and orphanages (Sadeq, 2002). There is possibility of wider participation of public at large in Cash *Waqf* as not everyone would be having real estate or property in ownership to dedicate in personal capacity (Aziz et al., 2013).

One big advantage with *Waqf* is that the funds can be utilized more flexibly in terms of the purpose for which allocations are made as well as the timing and mode of allocation. The condition of *Tamleek* (ownership transfer to a living Muslim) and restriction on heads of allocation is not there in *Waqf* as compared to *Zakāt*. Some scholars had suggested that *Waqf* can be used to build social-impact banks (Mohammad, 2011) as well as *Waqf*-based Islamic microfinance institutions (Habib, 2007). Finally, the institution of *Waqf* can also be used to provide non-economic support

in the form of training and vocational institutes as well as establishing and running health centers and clinics (Obaidullah, 2008). Skills based education and adequate health and sanitation has been found to be important precursors for enhanced productivity (Haneef *et al.*, 2014). Such needs can be met effectively through leveraging the institution of *Waqf*.

9. Mapping of SDGs with Islamic Institutional and Value Framework

This section maps how each of the SDGs can be targeted through a set of Islamic principles, institutions and instruments. Table 6 outlines the 17 goals which are part of the sustainable development agenda. It also illustrates how Islamic values, institutions and instruments can help in contributing towards achieving each of these SDGs.

Table 6. Use of Islamic Finance in Sustainable Development Goals (SDGs)	
Sustainable Development Goals (SDGs)	Methods of Intervention in Islamic Economic Framework
GOAL 1: No Poverty	<i>Zakāt, Waqf, Qard-e-Hasan, Mudarabah, Salam</i>
GOAL 2: Zero Hunger	<i>Zakāt, Waqf, Qard-e-Hasan</i>
GOAL 3: Good Health and Well-being	<i>Waqf, Takaful, Qard-e-Hasan</i>
GOAL 4: Quality Education	<i>Waqf, Takaful, Qard-e-Hasan</i>
GOAL 5: Gender Equality	Islamic socio-ethical values providing property rights to women, financial sustenance in a marital relationship and freedom to engage in any <i>Halal</i> business or financing contract.
GOAL 6: Clean Water and Sanitation	<i>Ijarah Sukuk, Istisna Sukuk, Waqf</i>
GOAL 7: Affordable and Clean Energy	<i>Ijarah Sukuk, Istisna Sukuk</i>
GOAL 8: Decent Work and Economic Growth	Islamic trade (<i>Murabaha, Salam, Istisna</i>), lease (<i>Ijarah, Musharakah Mutanaqisa</i>) and participation based modes of financing (<i>Mudarabah, Musharakah</i>).
GOAL 9: Industry, Innovation and Infrastructure	
GOAL 10: Reduced Inequality	<i>Zakāt, Waqf, Qard-e-Hasan, Mudarabah, Musharakah</i>
GOAL 11: Sustainable Cities and Communities	<i>Takaful</i> and using Islamic trade (<i>Murabaha, Salam, Istisna</i>), lease (<i>Ijarah, Musharakah Mutanaqisa</i>) and participation based modes of financing (<i>Mudarabah, Musharakah</i>).
GOAL 12: Responsible Consumption and Production	Islamic socio-ethical values encouraging moderation, conservation and avoiding wastefulness.
GOAL 13: Climate Action	Islamic socio-ethical values. Financing through markets via <i>Sukuk</i> or intermediaries by using Islamic trade and lease-based modes of financing.
GOAL 14: Life Below Water	Islamic socio-ethical values encouraging cleanliness and discouraging wastefulness.
GOAL 15: Life on Land	Islamic socio-ethical values encouraging conservation, moderation and avoiding wastefulness and harm to other living beings in the eco-system.
GOAL 16: Peace and Justice Strong Institutions	Islamic socio-ethical values prioritizing justice, rule of law, banning harm to other's property, life and honour and penalizing offenses.
GOAL 17: Partnerships to Achieve the Goal	<i>Ta'awwun Al-al Birr</i> (cooperation in goodness) and promote <i>Maslaha</i> (welfare).

Islamic values would play a role in shaping preferences and attitudes towards avoiding waste and ensuring recycling and responsible use of resources (Hassan, 2016). Islamic finance could allow investments in technology that can foster efficiency in the use of finite resources and allowing the use of renewable resources in the production processes (Obaidullah, 2018). Simultaneously, the ban on interest and selling of debt on the premium would allow the liquidity in the financial system to be utilized in the real economy. Finally, Islamic social finance through *Qard-e-Hasan*, *Zakāt* and *Waqf* would ensure that the resources flow even to those who are not able to earn incomes for meeting their needs from the resource markets due to lack of skills and inadequate health and education.

10. Conclusion

This study strived to assist in building a comprehensive index that covers important elements for ensuring sustainable development. Overall, the results indicate that Muslim countries are far behind in meeting the goals of sustainable development. Countries in Africa and the Middle East suffer from lower economic growth, political instability, and lack of funding and weaker institutions. On the other hand, the industrializing countries like Malaysia and Turkey along with Central Asian countries that have restructured their economies towards market economy principles perform relatively better on the Sustainable Development Index (SDI).

In light of these findings, it is evident that the poor developing Muslim majority countries in Africa and South Asia require substantial financial support preferably at a subsidized cost of finance, which is below the market-based cost of finance. Some development projects related to alleviating poverty, hunger, malnourishment and improving sanitation would require aid. Islamic social finance institutions can be revitalized to provide indigenous and deep mobilization and allocation in far flung areas besides the urban cities. For improving their economic sustainability, these countries would also require support in tariffs and favourable access to global markets and value chains. The rankings in this study on different indicators can be used by multilateral development institutions in their decisions regarding fund allocation and identifying priority segments and regions.

Concerning the intervention strategies to make progress towards achieving SDGs, this chapter also discussed that the role of Islamic finance. It would allow investments in technology that can foster efficiency in the use of finite resources and allowing the use of renewable resources in the production processes. To allow Islamic finance to grow, governments shall provide tax neutrality to Islamic finance transactions, give priority to

Islamic finance instruments in meeting sovereign funding requirements and provide incentives for the conventional financial institutions to operate Islamic banking windows in Muslim majority countries to expedite the transformation in the financial system. On the other hand, institutions like *Zakāt* and *Waqf* in Islamic social finance are also important in mobilizing funds for allocation in socially important projects where the private sector may not engage in due to low commercial viability in such projects and endeavours. In countries where there is lack of trust on government, public-private partnerships are important which can also help in efficient administration, monitoring and investment management. Tax incentives, transparency in reporting and administration, flexibility and efficiency in mobilizing social funds and careful monitoring of disbursements in priority segments can help in improving the social impact of pro-social spending.

References

- Ahmed, H., Mohieldin, M., Verbeek, J., & Aboulmagd, F. W. (2015). "On the Sustainable Development Goals and the Role of Islamic Finance". Policy Research Working Paper, World Bank, No. WPS7266.
- Alam, N., Duygun, M., & Ariss, R. T. (2016). *Green Sukuk: An Innovation in Islamic Capital Markets*. In: Dorsman A., Arslan-Ayaydin Ö., Karan M. (Eds.). Energy and Finance (pp. 167–185). Springer, Cham.
- Ashraf, A., & Hassan, M. K. (2012). "An Integrated Islamic Poverty Alleviation Model" Chapter 14 in *Contemporary Islamic Finance: Applications, Innovations and Best Practices*, edited by Karen Hunt-Ahmed, John Wiley and Sons, 2012.
- Aziz, M. R. A., Johari, F., & Yusof, M. A. (2013). Cash *Waqf* Models for Financing in Education. *Proceedings of the 5th Islamic Economic System Conference (iECONS2013)*.
- Bashir, A. H., & Hassan, M. K. (2005). "Financial Development and Economic Growth in Some Muslim Countries," Chapter 6 in *Islamic Perspectives on Sustainable Development*, Edited by Munawar Iqbal, Published by Palgrave-MacMillan, New York.
- BinMahfouz, S., & Hassan, M. K. (August 2013). Sustainable and Socially Responsible Investing: Does Islamic Investing Make a Difference? *Humanomics*, 29(3), 164–186.
- Buiter, W. H., & Rahbari, E. (2015). Why Economists (and Economies) Should Love Islamic Finance. *Journal of King Abdulaziz University: Islamic Economics*, 28(1), 139–162.
- Cook, J., Nuccitelli, D., Green, S. A., Richardson, M., Winkler, B., Painting, R., Way, R., Jacobs, P., & Skuce, A. (2013). Quantifying the Consensus on Anthropogenic Global Warming in the Scientific Literature. *Environmental Research Letters*, 8(2), 1–7.
- Dagobert, G. K. (2000). Global Warming - Facts, Assessment, Countermeasures. *Journal of Petroleum Science and Engineering*, 26(1–4), 157–168.
- Domar, E. (1946). Capital Expansion, Rate of Growth, and Employment. *Econometrica*, 14(2), 137–147.
- Habib, A. (2007). "Waqf-based Microfinance: Realizing the Social Role of Islamic Finance". *Paper presented at the International Seminar on Integrating Awqaf in the Islamic Financial Sector*, Singapore, 6–7 March.
- Haneef, M. A., Muhammad, A. D., Pramanik, A. H., & Mohammed, M. O. (2014). Integrated *Waqf* based Islamic Microfinance Model (IWIMM) for Poverty Alleviation in OIC Member Countries. *Middle-East Journal of Scientific Research*, 19(2), 286–298.

- Haq, M. (1963). *The Strategy of Economic Planning: A Case Study of Pakistan*. Oxford University Press: Karachi.
- Haq, M. (1995). *Reflections on Human Development*. Oxford University Press: New York.
- Harrod, R. F. (1939). An Essay in Dynamic Theory. *The Economic Journal*, 49(193), 14–33.
- Hartman, D. A. (2002). Does Progressive Taxation Redistribute Income. *The Road Map to Tax Reform Series*, Policy Report 162.
- Hassan, Mohammad Kabir and Salman Ahmed Shaikh, “Where Do Muslim Countries Stand in Sustainable Development Goals,” in Kenan Bağcı and Erhan Türbedar Editors, *Financing for Development: Alternative Perspectives on Challenges and Opportunities of Financing Development* Published by Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESERIC), Ankara, Turkey, May 2019.
- Hassan, A. (2016). Islamic Ethical Responsibilities for Business and Sustainable Development. *Humanomics*, 32(1), 80–94.
- Hottelling, H. (1931). The Economics of Exhaustible Resources. *Journal of political Economy*, 39(2), 137–175.
- Islamic Development Bank (2015). *The Role of Islamic Finance in Achieving Sustainable Development Goals*. Published by Islamic Development Bank.
- Khan, T. (2019). Reforming Islamic Finance for Achieving Sustainable Development Goals, *Journal of King Abdulaziz University: Islamic Economics*, 32(1), 3–21.
- Lundqvist, Jan; de Fraiture, C., & Molden, D. (2008). *Saving Water: From Field to Fork – Curbing Losses and Wastage in the Food Chain*. SIWI Policy Brief. Stockholm International Water Institute.
- Metwally, M. M. (1983). *Fiscal Policy & Resource Allocation in Islam*. Islamabad: Institute of Policy Studies.
- Mian, A., & Sufi, A. (2015). *House of Debt: How they (and you) Caused the Great Recession, and How We Can Prevent it from Happening Again*. University of Chicago Press.
- Mohammad, M. T. S. H. (2011). Towards an Islamic Social (*Waqf*) Bank. *International Journal of Trade, Economics and Finance*, 2(5), 381.
- Obaidullah, M. (2018). Managing Climate Change: Role of Islamic Finance. *Islamic Economics Studies*, 26(1), 31–62.
- Obaidullah, M. (2008). *Role of Microfinance in Poverty Alleviation: Lessons from Experiences in Selected IDB Member Countries*. Islamic Development Bank.
- Paltrinieri, A., Dreassi, A., Migliavacca, M., & Piserà, S. (2020). Islamic Finance Development and Banking ESG Scores: Evidence from a Cross-country Analysis. *Research in International Business and Finance*, 51, 1–13.
- Sadiq, S., & Mushtaq, A. (2015). The Role of Islamic Finance in Sustainable Development. *Journal of Islamic Thought and Civilization*, 5(1), 46–65.
- Solow, R. M. (1956). A Contribution to the Theory of Economic Growth. *Quarterly Journal of Economics*, 70(1), 65–94.
- Stiglitz, J. E. (2012). *The Price of Inequality: How Today's Divided Society Endangers Our Future*. New York: WW Norton & Company.
- United Nations Development Program. (2013). “Water Governance in the Arab Region”. United Nations Development Program, Regional Bureau of Arab States.
- United National Environment Program (2016). “Moving from Momentum to Transformation in a Time of Turmoil”. Inquiry: Design of a Sustainable Financial System.
- Zaidi, A. (2005). *Issues in Pakistan's Economy*. Karachi: Oxford University Press.

CHAPTER 5

PROMOTING SDGS AND SHARED PROSPERITY: THE POTENTIAL ROLE OF ISLAMIC ECONOMICS AND FINANCE

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Abstract

Islamic Economics and Finance (IEF) system can play an important role in promoting SDGs because IEF system is inherently positioned to address some of the main global challenges that are also highlighted by SDGs: high rates of poverty and inequality, frequent and severe banking and financial crises, and economic growth that is environmentally unsustainable and excludes the poor. A detailed theoretical discussion regarding the potential role of IEF in promoting SDGs is presented in the first part of this chapter. Given that financial inclusion is an important factor in achieving SDGs, the second part of this chapter employs World Bank's 2017 round of Findex data alongside cross-country regression analysis to examine the role of Islamic finance in enhancing financial inclusion among Muslim communities. The findings of this chapter identify some of the most important links between an IEF system and SDGs. Furthermore, it establishes the fact that increasing access to Islamic financial services can increase financial inclusion in Muslim majority countries which in turn can help reduce poverty, inequality, instability, and economic exclusion in these countries. The logical outcome and policy implication of the theoretical arguments and empirical findings highlighted above is that enhancing access to Islamic financial services can play an important role in promoting SDGs.

Keywords: SDGs, Islamic economics, Islamic finance, financial inclusion, sustainability

1. SDGs, Shared Prosperity, and Global Economic and Financial Challenges: An Islamic Perspective

Many financial and economic problems threaten the long-term wellbeing of global economy and hinder the realization of SDGs. One can point to increasing levels of economic & financial volatilities, rising poverty and inequality, and environmentally unsustainable economic paradigm as some of the main challenges facing the global community. The interconnected nature of these challenges calls for a holistic paradigm that could address them in simultaneous manner through one comprehensive approach.

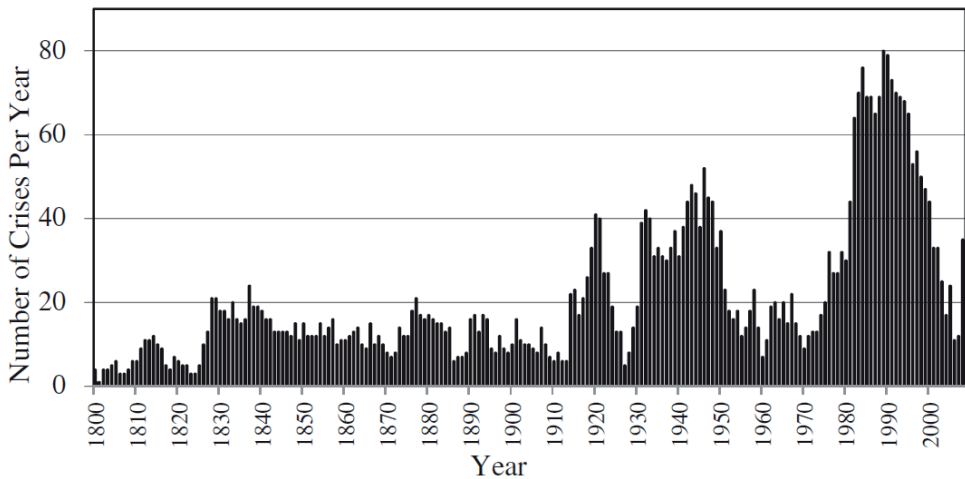
1.1. Economic and Financial Instabilities and Volatilities

The available data suggest that the global economy and financial industry has become more and more unstable and volatile over the past century. “Over the past three decades, financial crises have become a more frequent phenomenon. According to data compiled by Reinhart and Rogoff (2008) [a summary of which is presented in Figure 1] a total of 1,611 financial crises occurred during 1905–75, where financial crises are defined as periods of significant distress in currency markets, the banking sector, domestic debt, external debt, and/or inflation. In contrast, for the period 1976–2008 alone, this count stands at 1,618” (Mohseni-Cheraghlou 2016, 88). In other words, financial crises have become 2.3 times more frequent in the period 1976-2008 when compared to the highly tumultuous period of 1905-1975. While World Wars I and II were the main reasons for the higher incidence of financial crises in the periods 1915-1925 and then throughout 1940s, conflicts at such scales have been absent in the past four decades.

Many reasons have been cited for the increasing economic and financial volatilities. The removal of the global monetary system off the gold standard, increasing interconnectedness of the global banking and financial centers and hence the increasing likelihood of contagion, back-to-back oil shocks of the 1970s, and the Reagan and Thatcher deregulation of the 1980s in the U.S. and the U.K. are some of the often mentioned factors. Mohseni-Cheraghlou (2016) provides ample empirical evidence spanning three decades ending in the great recession of 2007-2009 that shows low- and middle-income countries are often hit the hardest during episodes of financial crises, increasing multidimensional poverty and inequality at the global level.

1.2. High Levels of Poverty and Inequality

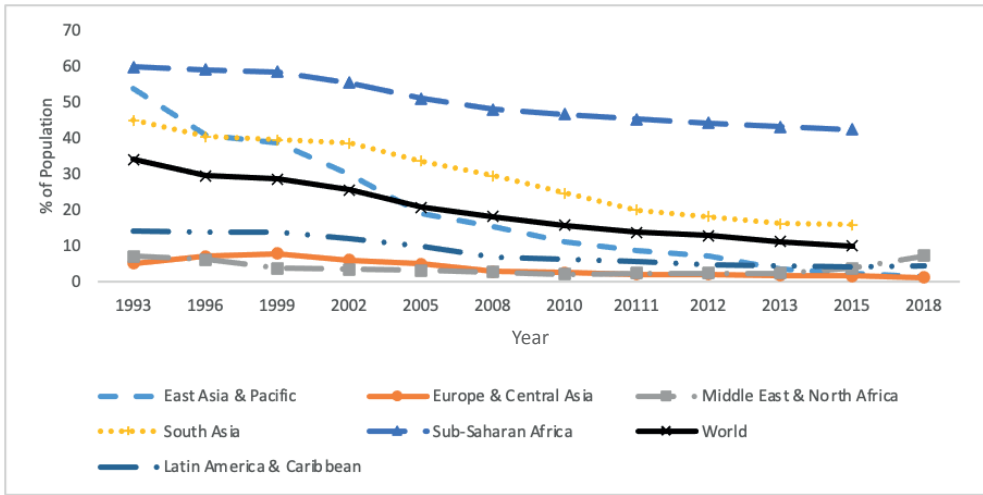
According to the World Bank estimates around 800 million people around the world are under the extreme poverty line of \$1.90 PPP a day. While poverty figure is substantially down from about 1,900 million people in 1990, most of this progress is due to the successes of East Asia and Pacific (Figure 2) in countries such as China and more recently Malaysia, Indonesia, Thailand, and Vietnam. Between 1981 and 2015, China alone has been able to reduce extreme poverty headcount by about 600 million people or almost, a whopping decline of 95%.



Source: Mohseni-Cheraghloo (2016, 89).

Figure 1. Frequency of Financial Crises in the World (1800-2008)

In other words, more than half of the reduction in world's extreme poverty headcount is due to China. However, the picture is not as rosy in other parts of the world. Hosting more than half of world's extremely poor (or about 400 million people), more than four out of ten residents of Sub-Saharan Africa still live in extreme poverty. Such high levels of poverty are also exacerbated by the fact that about 620 and 700 million residents of Africa (or more than half of the population of this resourceful continent) do not have access to electricity and basic sanitation, respectively. Furthermore, 320 million people in Africa (or a quarter of Africans) live without access to clean and reliable drinking water sources. Hence, in addition to income poverty, Africa is suffering from severe forms of multidimensional poverty (Alkire et al. 2017) such as poverty in access to water, electricity, and sanitation which by extension will contribute to poverties in education, health, and security.



Source: World Development Indicator (2019). Author's Calculation.

Figure 2. Poverty headcount ratio at \$1.90 a day (2011 PPP) (% of population), 1993-2018

As a related issue to multidimensional poverty, increasing levels of within and between country multidimensional inequalities is also at the forefront of global issues. As we saw earlier, while poverty headcount is experiencing rapid declines in some countries and parts of the world, other countries and regions are seeing little progress and even reversals in poverty headcounts. Clearly, such trends are an indication of increasing levels of inequalities between different countries and regions. Nonetheless, since 1990, global inequality —the inequality among all citizens worldwide, regardless of their country of residence— has decreased. Like the reduction of global extreme poverty headcount, the recent decline in global inequality is mainly driven by rapid growth rates in developing countries with large populations, namely China and India. Even though global inequality has been on the decline in the past 25 years, the share of income of the top one percent has increased and within country inequalities are higher today than they were 25 years ago, especially in poorer and developing economies. “Inequality remains unacceptably high in many countries around the world. Developing countries tend to exhibit higher levels of inequality than developed countries. Latin America and the Caribbean, along with Sub-Saharan Africa, stand out as historically high-inequality regions” (World Bank 2016, 88).

1.3. Environmental Degradation, Depletion of Natural Resources, and Pro-Rich Growth Bias

According to the data and reports by the World Bank, World Health Organization (WHO), and other international organizations, the global economy is on an environmentally unsustainable path and runs the long-run risk of total collapse if meaningful steps are not taken to reverse the current course. Below are a few disturbing facts about the state of the environment:

- Air pollution is the fourth leading cause of premature deaths imposing a hefty annual welfare loss of around \$5 trillion on global economy and it is the cause of 1 in 10 of all deaths worldwide. (World Bank & IHME, 2016)
- About one-tenth of the world's population or around 700 million people don't have access to clean drinking water. (Caballero, 2015)
- About 70% of the world's ecosystems are facing threats of vanishing as they are degrading faster than they can recover. (World Bank, 2020) Moreover, more than 3,200 species of mammals, 6,900 of fish, 3,600 of birds, and 13,600 species of higher plants currently threatened with extinction. (Caballero, 2015) The environmental impacts of such extinction are currently not fully understood.
- At current levels of consumption patterns and keeping the projected economic growth and new oil discoveries in mind, the world has enough oil to last for 25 years.
- The depletion of global water resources is more severe than the current oil depletion. This is because while there are substitutes for oil as a source of energy, there is no substitute for drinking water, the single most ingredient of life in the blue planet.
- Half of the world's forest has been cleared, contributing to about 15% of global greenhouse gas emissions every year. Additionally, about 7.2 million hectares of forests are destroyed each year.
- Each year more than 1.2 billion tons of waste is dumped into the earth and it is to be tripled by 2100. (World Bank, 2013)

While the above are threatening the overall wellbeing of the global community, the vulnerable and the poor are impacted the most. For example, air pollution is mainly affecting the poorer people and countries as 86% of the residents in low- and middle-income countries are exposed to air pollution levels (measured in term of PM 2.5) that are larger than the WHO guidelines. Also, while one-third of the population in low-income countries suffer from a lack of access to clean drinking water, only less than one percent of the population in high-income countries do. (Caballero, 2015) Moreover, solid and liquid wastes are often dumped

in areas far away from the urban centers, therefore disproportionately impacting the population in slumps and rural areas. Furthermore, richest countries consume 10 times as much as natural resources as the poorest countries do.¹ Finally, 78% of the world's extremely poor live in rural areas and their livelihoods directly depend on forests, lakes, rivers and oceans, all of which are degrading continuously because of the unsustainable economic activities and conspicuous consumption patterns of mainly the non-poor. (Olinto et al.,2013)

1.4. SDGs and Enhancing Shared Prosperity: A Holistic Islamic Perspective

Accomplishing SDGs and enhancing shared prosperity will require a holistic approach that is capable of addressing the challenges outlined above. For example, long-run equitable and inclusive growth will not be truly possible without paying attention to multidimensional poverty and inequality. Stability cannot be materialized if long-run sustainable and inclusive growth is not in place, while poverty and inequality will not be effectively addressed without economic and financial stability. Any framework or approach that heeds to one or some of these dimension(s) more than other(s) will fail to enhance shared prosperity. For example, an economic and financial system primarily concerned about economic growth will take poverty, inequality, and sustainability into consideration only in the face of political and social pressure or when growth is threatened. Clearly, this has been the case for the capitalist economic framework where poverty, inequality, and environmental issues were only heeded to after they posed serious threats to the survival and existence of the system itself in the long run. In other words, SDGs and shared prosperity and their various elements are NOT inherent to a capitalist economic order and are therefore ignored until they start undermining the system's existence and functionality. Clearly, such a framework inherently lacks the ability to enhance SDGs and shared prosperity because these are not integral to its set of objectives and are only temporary add-on features. Once the capitalism system figures out how to continue its operation and ensure its survival without heeding to SDGs and shared prosperity, these concepts will get ignored, just like they were for much of the 20th century.

Unlike capitalism, the dominant economic paradigm of our time, an IEF framework considers SDGs and shared prosperity, as necessary, inherent, and inseparable components of its existence. In other words, the abundance of Quranic verses, prophetic narrations (*Hadith*),

1 See <https://www.ecowatch.com/humans-consumption-of-earths-natural-resources-tripled-in-40-years-1943126747.html>. For example, "Europe and North America, which had annual per capita material footprints of 20 and 25 tons in 2010, are at the top of the table. China's footprint was 14 tons and Brazil's 13. The annual per-capita material footprint for Asia-Pacific, Latin America and the Caribbean and West Asia was 9-10 tons, and Africa's was below 3 tons" (Kirby 2016, 1).

and cases from the Islamic history² make it clear that an economic and financial system can only be referred to as genuinely Islamic when SDGs and shared prosperity are heeded to and actively pursued while also none of the goals is sacrificed for the sake of others. In this framework, there is no “tradeoff” between economic justice and environmental sustainability versus economic efficiency and growth because these concepts are not defined separately from each other and are in fact strongly intertwined and dependent on each other. As a result, an IEF framework is equipped with the necessary philosophical and practical apparatus to have the potential of offering a holistic framework within which these global challenges could be identified and effectively addressed.

1.5. IEF and Economic and Financial Stability

Global financial crises of 2007-2009 reinforced the importance of the stability in the financial industry for academicians and the policymaking community. As a result, a new strand of articles, books, and reports started analyzing various issues related to the stability of a financial system. Among these were a new line of research focusing on the stability of an IEF system. The common finding of this line of research, both theoretical and empirical, has been that Islamic financial institutions are inherently more stable when compared to their conventional counterparts. This is mainly because, by the decree of Islamic legal system, speculation and excessive risk taking is prohibited in an IEF system. Moreover, financial activities in this system must be linked to the real sector of the economy. In other words, in an IEF system, debt-based financing that is not backed by real assets is non-existing and is replaced with equity-based or asset-backed financing. In case of equity-based financing (such as *Mudaraba* and *Musharaka* contracts) the financiers (i.e. the banks) are in fact partners and investors in the projects and endeavors for which they are providing finances. In the case of asset-backed debt financing (such as *Murabaha* contract) the bank is the owner of the asset which is being sold in installments to the client (i.e. the borrower). In both cases, Islamic financial institutions are sharing the risk with their clients and are not simply providing finances and collecting a fixed rate on them.

Clearly, the prohibition of speculation, excessive risk taking, and debt-based financing lead to financing and investments that are less risky. Such investments are also more strongly linked to the real economy and is therefore associated with real economic output, which in turn, promote more stability in the economic and financial system. The 2007-2009 global financial crises and the likes before it in various countries are apparent showcases of the

2 In another paper, I have complied the many verses, *Ahadith*, and historical narratives providing strong evidence that SDGs in general and shared prosperity in particular are inherent to an IEF system.

kinds of instabilities a financial system would be exposed to when speculation, excessive risk taking, and debt-based financing are at the core of the operation of financial institutions and their incentive structures. Such risks and instabilities tend to grow with the size of these institutions as they become “too large to fail” and moral hazard kicks in. At that point, the managers of such institutions have all the incentives to take more risk as they have a sense, that extreme losses will most likely be covered by the government and tax-payers’ money in forms of bail-outs. This will increase the risk and the instability in a financial system, imposing immense costs on the larger economy and society. By prohibiting speculation, excessive risk taking, and debt-based financing that is not backed by real assets, an IEF system would avoid such risky and immoral behaviors and their eventual harmful outcomes for the economy.

The current banking system is not able to accommodate an IEF system. From the banking perspective, an IEF system would require a two-tier banking model. First tier would be banks that only take deposits and make payments. Such banks “would accept deposits for safekeeping without accruing any return and must maintain one hundred percent reserves. This protects the payment system of the economy, while concurrently limiting the credit-creating ability of the banking system” (Askari et. al. 2012, 5). The 100% reserve banking mentioned here was also suggested by Irving Fisher in the “Chicago Plan” after the Great Depression which was also endorsed by Milton Friedman. It limits the power of creating money to the central bank, therefore limiting credit bubbles and the subsequent busts which contribute to the stability of a financial system.³

The second tier in such a model would be an investment component which “would function as a financial intermediary, channeling savings into investment projects. Deposits in these investment banks would be considered equity investments with no guarantees for their face value at maturity, and are subject to profit-and-loss sharing. Depositors would be investors in the pool of assets maintained by the investment bank on the asset side of its balance sheet” (Ibid, 5). Such a profit-and-loss sharing (PLS) framework will also contribute to the stability of a financial system as depositors will be more prudent and selective about the banks in which they will be depositing their funds as investors. Moreover, this will in turn encourage banks to only get involved in projects that are less risky and more profitable. As a result, riskier and questionable projects will have a lower likelihood to attract financing from an investment bank operating based on *Shari’ah* guidelines.

3 Another suggestion in similar line was put forth more recently by King (2016). He suggested the idea of “narrow banking”, where all deposits are backed by safe and liquid assets.

There are several widely known contractual frameworks through which the above-mentioned equity-based financing can take place in an IEF system a summary of which is provided in Table 1 below. It is important to note that while all these contractual frameworks are appropriate for addressing the financing needs of SMEs as well as large enterprises, for various reasons, *Murabaha* is currently the most commonly used form of financing in today's IEF system.

Financing Scheme	Brief Description	Most Appropriate Target Population
Mudaraba	The supplier of capital (the lender) contracts with a working partner (the borrower) based on sharing the resulting profits. Losses, if any, are considered loss of capital and borne by the owner of capital. The working partner, in that case, goes unrewarded for its efforts. This is the 'loss' borne by the working partner, a feature of Mudaraba which has led some to characterize it as 'profit and loss sharing' (PLS). The Mudaraba contract when applied to farming is called Muzara'ah or sharecropping.	Poor or non-poor who lack capital but have skills to carry out or manage a specific business operation.
Musharaka	Two or more parties supply capital as well as work/effort. They share the resulting profits according to agreed proportions, but losses are to be borne in proportion to the respective capitals.	Non-poor.
Murabaha	A sale agreement under which a seller purchases goods desired by a buyer and sells it to him/her at an agreed marked up price, but with a deferral of payment as agreed in the contract.	Poor or non-poor who can pay for an item they need (either for small business or household use) in installments.
Muzara'ah	Mudaraba applied to agriculture sector. An agreement between two parties in which one agrees to allow a portion of his land to be used by the other in return for a part of the produce of the land.	Poor or non-poor who lack capital but have skills to carry out agricultural operations.
Salam	Payment is made now for agricultural products to be delivered at a specified time in future with the price being agreed now.	Poor or Non-poor
Istisna	Salam applied to manufactured goods, with the possibility of payment in installments as the goods are delivered.	Poor or Non-poor
Ijara	The leasing of a property, capital good, or any other good.	Poor or Non-poor
Sukuk	Bonds that are in compliance with Shari'ah, which are based on partial ownership of asset, investment, or business. The issuer of a Sukuk sells an investor the certificate, who then rents it back to the issuer for a predetermined rental fee. The issuer also makes a contractual promise to buy back the bonds at a future date at face value. Issuer could be private or sovereign entities.	Non-poor

1.6. IEF and Reducing Multidimensional Poverty and Inequality

An IEF framework emphasizes poverty prevention, alleviation and reduction of the gap between the haves and have nots. These objectives are accomplished through imposing obligatory charity tax (*Zakat*) or encouraging voluntary charity (*Sadaqah*) or charitable interest-free loans (*Qard Hassan*) all of which can prevent and reduce global poverty and inequality. Islamic legal system requires all Muslims to pay a portion of their surplus income as *Zakat* which can best be described as a mandatory tax levied by the *Shari'ah* on a Muslim's surplus income which is then allocated to the needy and the poor in the society. An empirical study conducted by Mohieldin et. al. (2012) suggests that, if systematically collected and distributed, *Zakat* has the potential to eradicate extreme poverty in most Muslim majority countries and reduce poverty rate significantly for others. Moreover, such a mandatory religious tax on surplus income, will reduce the rate at which wealth could be accumulated in societies governed by the Islamic law, reducing inequality rates.

In addition to *Zakat*, Islamic code of ethics highly encourages *Sadaqa* and *Qard Hassan* (Table 2) which are voluntary mechanism of addressing the financial needs of the poor and the vulnerable in the society. While such practices are “voluntary” from the *Shari'ah* perspective, when poverty is present in a society, Islamic code of ethics requires the non-poor and wealthy Muslims to do all in their power to prevent and alleviate poverty in order for them to truly adhere to the spirit of Islam. As a result, through the combination of legally mandatory charities (*Zakat*) and morally mandatory charities (*Sadaqa* and *Qard Hassan*), an IEF system possesses the necessary mechanism to do away with absolute poverty and reduce relative poverty and inequality. For instance, Shirazi (1996) noted that *Zakat* and *Ushr* transfers in Pakistan improved the disposable income of people in the lowest income brackets by nearly 40%.

In addition to the redistribution mechanism embedded in this economic and financial system, in an IEF framework, capital has no advantage to labor and the fruits of each factor of production must be distributed with fairness and according to their actual contribution and importance in the production process or their real marginal product. As a result, through the combination of its distribution mechanism according to the real marginal product of each factor of production and then its mandatory and voluntary redistribution mechanisms, an IEF system has the potential of reducing poverty and inequality globally. This is especially crucial when one considers the fact that more than 800 and 400 million of world's poor and extremely poor –defined as earning less than \$4 and \$1.90 PPP a day respectively– reside in Muslim majority countries.

Financing Scheme	Brief Description	Most Appropriate Target Population
Qard Hassan	It is a charitable type of loan which, in addition to being a <i>Qard</i> (interest free loan), it also contains elements of goodwill, benevolence, and generosity whereby the lender, depending on circumstance, would be willing to relax some or all terms of the loan contract including the repayment schedule.	Poor and Non-poor who are at risk of poverty if not financially supported.
Zakat	Mandatory transfer of small percentage of one's surplus income or capital to the poor.	Poor
Sadaqa	Voluntary transfer of money or any form of capital to the poor.	Poor

1.7. IEF and Environmental Sustainability

Islamic teachings consider mankind as the trustee of the earth and in fact the whole creation. As a trustee, mankind is obligated to take the outmost care not to pollute the planet and deplete its resource beyond the point of replacement. In other words, any economic activity that is not environmentally sustainable in the long-run and depletes and pollutes the natural resources beyond the point of replenishment is forbidden in an IEF system. (Javadi, 2008) Environmental stewardship is taken so seriously in Islam that no excuse, including as severe as nearing of the dooms day cannot relieve mankind from this duty. In a famous prophetic narration, the prophet of Islam is reported to have said that “When doomsday comes, if someone has a palm shoot in his hand, he should plant it”. Moreover, in a letter to one of his governors, the fourth caliph of the Muslims, Ali Ibn Abitalib, orders the governor to take care of the earth and the resources he is governing over and writes “Partake of it gladly so long as you are the benefactor, not a despoiler; a cultivator, not a destroyer. All human beings as well as animals and wildlife enjoy the right to share Earth’s resources. Man’s abuse of any resource is prohibited and be mindful that anything that leads to what is prohibited is itself prohibited, too.” (Kamali, 2010; Kula, 2003; Nasr, 1992) These statements and many such more, show that Islam prohibits any economic activity that leads to the destruction of earth and its resources beyond the point of replenishment.

To conclude this part of the chapter, one can strongly argue that the above discussion can be strongly linked to the SDGs. More specifically, many of the SDGs are similar to the objectives outlined for a genuine IEF system; ensuring stable economic development, enhancing shared prosperity and inclusive growth, reducing multidimensional poverty and inequality, and promoting environmental sustainability and stewardship are among the common goals shared by the SDGs and an IEF system. As a result, implementation of an IEF system can be tantamount to the promotion of SDGs. Furthermore, a wide range of financial

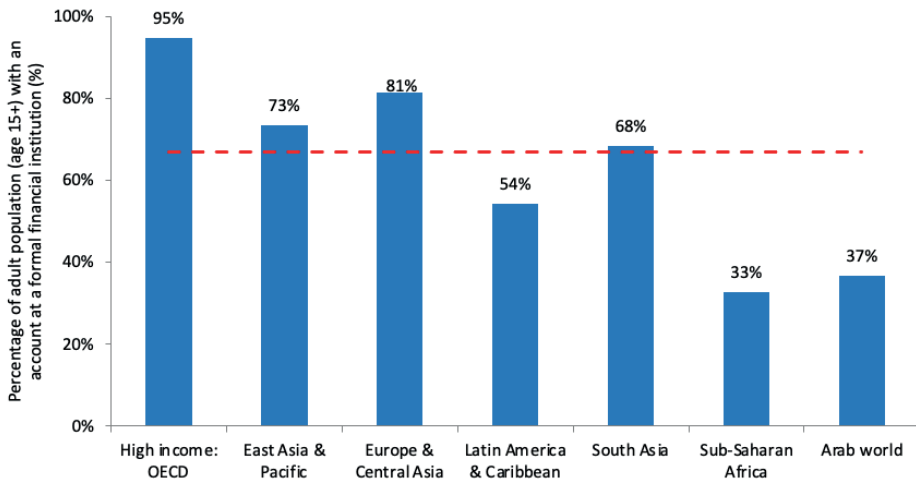
instruments available in an IEF system, some of which were mentioned earlier, have the potential to provide the financing needs of achieving SDGs. In a 2015 World Bank Working Paper, Ahmed and his colleagues provide a detailed discussion on the role of “Islamic financial institutions, capital markets, and the social sector in promoting strong growth, enhanced financial inclusion, and intermediation, reducing risks and vulnerability of the poor and more broadly contributing to financial stability and development” (Ahmed et. al. 2015, 1).

The recent global emergence and rapid growth of Islamic finance and banking industry around the world (now with assets estimated at \$2.5 trillion) can contribute considerably to the stability of the global financial industry. (Askari, Iqbal and Mirakhor, 2009) The growth of Islamic finance can also increase environmental stewardship because genuine Islamic banks and financial institutions are dictated by the letter and spirit of *Shari’ah* not to finance projects that are environmentally destructive and unsustainable. Furthermore, the growth of this industry can also help reduce poverty and inequality through increasing financial inclusion which will in turn make inclusive, stable, and sustained growth more feasible and probable. Moreover, financial inclusion will make it more probable for the poorer segment of the society to gain access to the kinds of financial services that could help boost their productivity and reduce their financial vulnerabilities. Considering the importance of financial inclusion in promoting inclusive growth and reducing multidimensional poverty and inequality. (Beck, Demirgüç-Kunt, and Levine, 2004; Beck and Demirgüç-Kunt ,2008; Levine, 2005; World Bank, 2007b). The second part of this chapter will provide some initial empirical evidence on the potential role of Islamic finance in enhancing financial inclusion.

2. Financial Inclusion: The Role of Islamic Finance

It is estimated that more than 33 percent of the world’s adult population or 1.7 billion adults don’t have access to formal financial services and the majority of them reside in an emerging market and developing economies (EMDEs) (Demirguc-Kunt et al., 2018). The picture is substantially grimmer for Organization of Islamic Conference (OIC) member countries. According to Global Findex Database, more than two-third of the OIC member countries represented in this database have formal account penetration rates⁴ that are less than the world average of 67 percent. The median account penetration rate among the OIC member countries is only about 30 percent, a figure that is significantly lower than the global average. Also, in comparison to other regions, the Arab world has the second lowest formal account penetration rate of 37 percent (Figure 3).

4 Account penetration rate is measured as the percentage of adults age 15 and above with account(s) in formal financial institutions.



Source: Global Financial Inclusion (Global Findex) Database.

Figure 3. Formal account penetration rates by regions, 2017

Furthermore, according to Global Findex, 65 percent of adults among self-identified Muslims don't have an account in a formal financial institution. In other words, about two in every five adults without a formal account around the world are Muslims. This may be one reason as to why efforts for reducing poverty or enhancing shared prosperity in many of the MENA economies and other Muslim majority countries have not been as successful as one would have wished for them to be.⁵

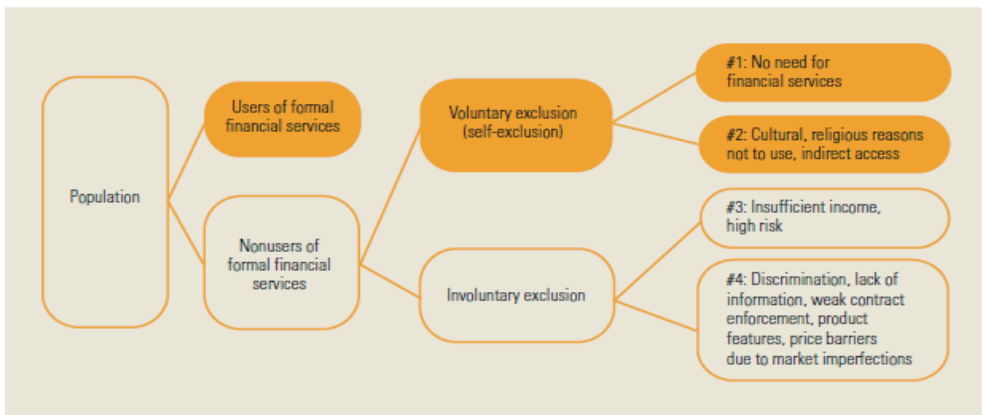
2.1. Reasons for Financial Exclusion

The reasons for financial exclusion, defined here as not having an account at a formal financial institution or being unbanked, are rooted in a complex set of economic, legal, social, political, cultural, and personal factors but can be classified into two main categories: voluntary and involuntary reasons. A 2011 survey, the Global Findex Database, is the first international database that makes it possible to get a first glimpse at the various aspects of financial exclusion at the individual level. In addition to many other questions, this survey asks the unbanked respondents (i.e. adults lacking a formal account) about the reason(s) as to why they do not have an account at a bank, credit union or other formal financial institution.

⁵ It is important to note here that while lacking an account at a formal financial institution is not always tantamount to lacking access to financial services, it is nevertheless a good proxy for measuring access to financial services. This is because most if not all forms of formal financial services are often linked to accounts in formal financial institutions. Therefore, individuals or firms without a formal account are often forced to address their financial needs through informal financial markets, which are often associated with higher costs and risks and little to no legal protection against frauds or breaches in the contract.

The respondents could choose one or more of the following reasons:

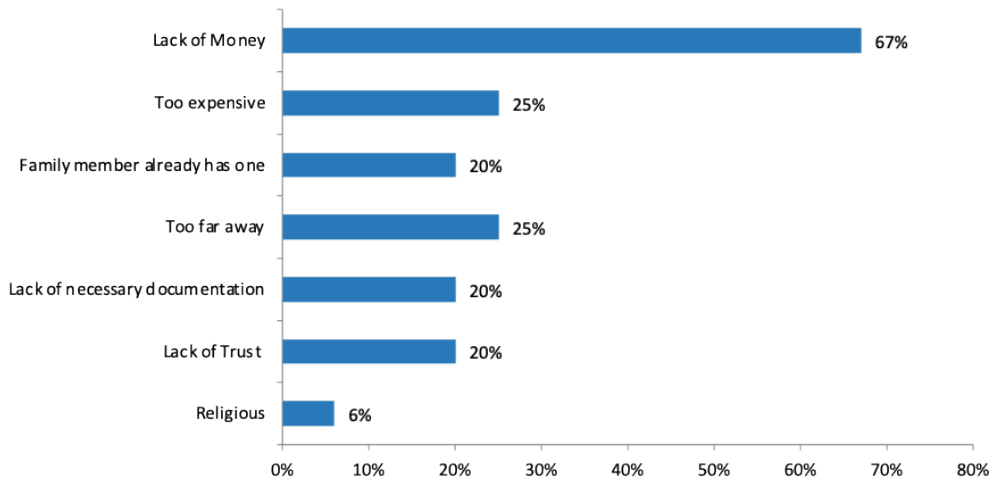
- a. They are too far away.
- b. They are too expensive.
- c. You don't have the necessary documentation (ID, wage slip).
- d. You don't trust them.
- e. You don't have enough money to use them.
- f. Because of religious reasons.
- g. Because someone else in the family already has an account.



Source: Global Financial Development Report 2011.

Figure 4. Reasons for financial exclusion

This question provides a valuable entry point for analyzing the reasons for which 1.7 billion adults around the globe have remained unbanked. According to this survey, not having enough money is the most cited reason for being unbanked, followed by the cost and distance (Figure 5), while being unbanked for religious considerations is the least cited reason.



Source: Global Financial Inclusion (Global Findex) Database. Author's Calculation.

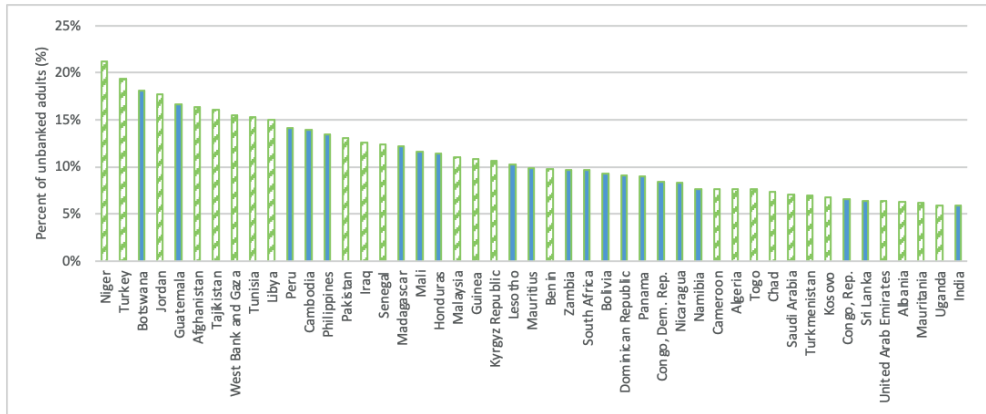
Note: Respondents could choose more than one reason.

Figure 5. Reasons for financial exclusion, 2017

2.2. Financially Excluded for Religious Reasons: Who and Where?

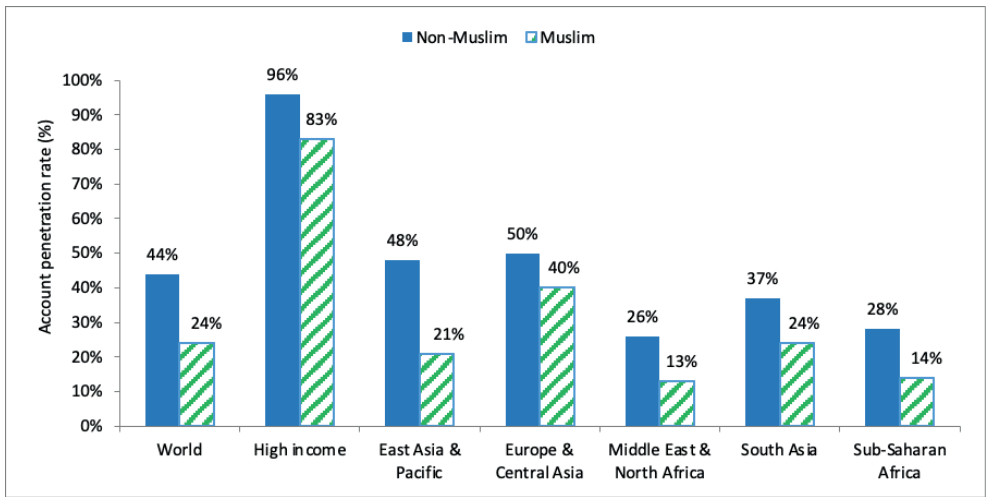
About six percent (or 102 million) of the unbanked adults around the world reported religious reasons for not having an account. But who are these adults, which religion they adhere to, and in which region and countries they reside in? A review of data shows that compared to other countries, the unbanked adults in Muslim majority countries tend to have higher likelihood of citing religious reasons for not having an account. This information is summarized in Figure 6. As evident from this figure, 28 out of 53 countries where religious reasons were cited by at least six percent of the unbanked adults are Muslim majority countries (highlighted in green patterned bars). It is important here to realize that while only six percent of adults worldwide cited religious reasons for not having an account, financial exclusion rates because of religious reasons are above 15 percent for eight OIC member countries. Furthermore, 15 OIC member countries have financial exclusion rates because of religious reasons at 10 percent or more. Overall, based on Global Findex, about 12 percent of unbanked individuals in the Arab MENA (or 17 million) and seven percent of the unbanked in OIC member countries (or 47 million) reported not having an account because of religious reasons.⁶ Furthermore, Figure 7 confirms that globally, self-identified Muslims are about twice less likely to have an account in comparison to their non-Muslim counterparts (24 percent vs. 44 percent) and this gap is about 13 percentage points in the MENA region.

⁶ The 17 million estimate is on the conservative side as it does not include countries such as Algeria, Bahrain, Iran, Qatar, Somalia, and the United Arab Emirates, which are home to about 140 million Muslim (about 10 percent of the global Muslim population). These countries were not represented in the Global Findex Database.



Source: Global Financial Inclusion (Global Findex) Database. Author's Calculation.
 Note: Green patterned bars represent OIC member countries.

Figure 6. Financially Excluded Due to Religious Reasons, 2017



Source: Demircuc-Kunt, Klaper, and Randall (2013).
 Note: The difference between Muslims and non-Muslim is statistically significant at 1% level. Analysis is based on 64 countries. Countries with less than 1% and more than 99% Muslim population are excluded from the analysis.

Figure 7. Differences in financial inclusion between Muslims and non-Muslims, 2011.

2.3. Islamic Finance and Financial Inclusion

Cross-country regressions also support the ideas presented in tables and figures above. Regression results in Table 3⁷ and a close look at changes in R-squared values between different models and the size and significance of coefficients suggests that being in the

7 All models include GDP and GDP per capita to control for different levels development in economic, legal, social, and governance fronts. This is because legal, social, and political developments are often strongly correlated with levels of economic development and the size of an economy.

MENA region followed by share of Muslim population in a given country are the most important determining factors in citing religious reasons for being unbanked.

Table 3. Determinant of financial exclusion due to religious reasons, 2017

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
GDP (2005 Billion \$)	0.000069	0.000311	0.000087	0.00032*	0.00038*	0.00139	0.00042*	0.00039***	0.00045*
GDP per Capita, PPP (2005 international thousand \$)	-0.0712*	-0.0123	0.0161	0.0342	-0.0405	-0.0903	-0.0264	-0.131	-0.0598
Muslim Population (% total population)		0.0942***		0.0897***	0.0815***	0.0502***	0.0792***	0.0598***	0.0746***
Religiosity (% adults)			0.0705***	0.0231	-0.0210	-0.00780	-0.0201	-0.0219	-0.0184
East Asia and Pacific Dummy					-1.650	-2.907	-1.920	-1.596	-2.12
Europe and Central Asia Dummy					-1.754	-0.453	-1.945	-1.967	-1.847
Latin America & the Caribbean Dummy					1.439	0.879	1.011	0.853	0.584
Middle East and North Africa Dummy					6.563*	7.342**	6.204*	10.325**	8.374**
South Asia Dummy					3.298	-3.746	2.983	3.235	2.063
Sub-Saharan Africa Dummy					-0.733	-2.423	-2.867	-1.201	-1.953
Literacy Rate (% people 15+)						-0.1012			
Life Expectancy at Birth							-0.1320		
Commercial Bank Branches per 100,000 Adults								-0.00547	
Commercial Bank Branches per 1000 km ²									-0.01001***
Observations	142	142	108	108	108	85	100	91	91
R-Squared	0.019	0.398	0.054	0.342	0.399	0.578	0.432	0.501	0.576

Note: OLS regressions with robust standard errors. * p<0.10, ** p<0.05, *** p<0.01. Dependent variable is the percentage of adults reporting religious reasons for not having an account, which is taken from Global Findex Database. GDP and GDP per capita are included in all models as proxies for the quality of institutions.

Therefore, it could be argued that enhancing the size of and access to *Shari'ah* compliant financial products can reduce voluntary financial exclusion because of religious reasons. In other words, if the earlier findings are true, one should expect to see a negative relationship between the density of *Shari'ah* compliant financial services and the percentage of adults that are unbanked due to religious reasons. Table 4 provides some evidence supporting this hypothesis. The negative and statistically significant coefficients for two different measures of density of *Shari'ah* compliant assets show that after controlling for other relevant factors, the percentages of people who report religious reasons for not having an account in formal financial institutions are lower in countries where Islamic finance has stronger presence. Put differently, one could expect that as the density of *Shari'ah* compliant assets increases, the

share of unbanked people because of religious reasons would decline. This suggests that increasing the presence of and access to formal *Shari'ah* compliant financial services in countries with considerable Muslim population could reduce the level of voluntary exclusion from formal financial institutions because of religious considerations.

	Model 1	Model 2
GDP (2005 Billion \$)	0.000653***	0.000398***
GDP per Capita, PPP (2005 international thousand \$)	-0.0701*	-0.0395
Religiosity (% adults)	0.00629	0.0202
Muslim Population (% total)	0.0821***	0.0547**
Middle East and North Africa Dummy	13.07***	12.76***
Commercial Bank Branches per 1000 km ²	-0.00898**	-0.00764*
Ratio of <i>Shari'ah</i> Compliant Assets to Total Assets (%)	-0.301***	
<i>Shari'ah</i> Compliant Assets per Adult (1000s \$)		-0.612***
Observations	89	92
R-Squared	0.631	0.586

Note: OLS regression with robust standard errors. * p<0.10, ** p<0.05, *** p<0.01. Dependent variable is the percentage of adults reporting religious reason for not having an account, which is taken from the Global Findex Database. Only those variables that were significant in at least one of the models in Table 3 were included in these regressions. *Shari'ah* compliant (Islamic) assets and total assets are from BankScope.

Furthermore, Table 5 provides some anecdotal evidence that increasing the share of *Shari'ah* compliant assets vis-à-vis total banking assets in a country can help reduce the percentage of small firms who cite access to finance as a major obstacle for their operations. This is in line with the fact that small firms are often managed and operated by members of a family, where religious considerations are more likely to surface in their financing decisions than larger firms, which are often managed by professional executives, therefore having less or no interest for *Shari'ah* compliant financing.

Table 5. Density of *Shari'ah* Compliant Assets and Financial Obstacles of Firms, 2017

	All Firms	Small Firms	Medium Firms	Large Firms
GDP (2005 Billion \$)	0.00643	0.00209	0.00535	0.0142
GDP per Capita, PPP (2005 international thousand \$)	-0.712*	-0.703**	-0.658	-0.509
Religiosity (% adults)	0.0453	0.0812	-0.0465	0.0154
Muslim Population (% total)	-0.0137	-0.0484	0.00345	0.00874
East Asia and Pacific Dummy	-7.276	-5.731	-0.602	-15.732
Europe and Central Asia Dummy	7.131	9.543	6.783	4.736
Latin America & the Caribbean Dummy	2.463	3.601	5.434	-6.092
Middle East and North Africa Dummy	13.64	23.40***	23.021	37.631
South Asia Dummy	-3.875	-2.844	3.984	-8.647
Sub-Saharan Africa Dummy	17.981*	22.874**	19.872*	0.295
Commercial Bank Branches per 1000 km ²	-0.0486	-0.283	-0.0348	-0.375
Ratio of <i>Shari'ah</i> Compliant Assets to Total Assets (%)	-0.0824	-0.201***	-0.412	-0.728
Observations	72	68	68	68
R-Squared	0.431	0.532	0.401	0.363

Note: OLS regression with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Dependent variable is the percentage of firms reporting access to finance as a major obstacle in their operations, which is from World Bank Enterprise Survey. Only those variables that were significant in at least one of the models in Table 3 were included in these regressions. *Shari'ah* compliant (Islamic) assets and total assets are from BankScope.

3. Concluding Remarks

An IEF system advocates for the reduction of poverty and inequality and promotes an economic model with equitable and sustainable growth that ensures economic justice within and across generations, with environmental sustainability and stewardship being at its heart. (Mirakhor and Askari, 2010) Moreover, through the prohibition of *Gharar*, *Riba*, and *Maysir*, and emphasis on the real economy and PLS contracts, an IEF system is capable of promoting economic and financial stability, enhancing more equitable relationship between owners of capital and the owners labor, and focusing on sustained long-run growth and employment (Figure 10).

An important channel through which shared prosperity can be materialized is financial inclusion. According to the 2017 Global Findex Database, more than 102 million adults around the world avoid interactions with formal financial institutions because of religious reasons. Using Findex 2017 survey data, this chapter shows that Muslims are more likely to be financially excluded for religious reasons. Furthermore, Demirguc-Kunt, Klapper, and

Randall (2013), which is based on 2011 round of Findex survey, find similar results. Therefore, there is a potential role for Islamic finance in enhancing financial inclusion. In turn financial inclusion can help reduce poverty, inequality, and promote SDGs and shared prosperity among Muslim communities around the world and especially in some of the OIC member countries.

The policy implications of these finding are profound for banking officials and policymakers in OIC member countries. One important message of this chapter is for the supply side which is increasing access to Islamic financial instruments must be high on the agenda as it can help reduce voluntary financial exclusion. However, from the demand side, there is no research that identifies the characteristics of those who cite religious reasons for being unbanked. More specifically, the literature is silent on whether gender, education, age, and/or residing in urban/rural areas have any link to citing religious reasons for being unbanked. Such information can help policymakers to effectively target specific demographics in their efforts to extend Islamic financial services with the final objective of increasing financial inclusion.

Increasing awareness is an important factor in increasing demand for Islamic financial services. Examining limited sample of countries (Algeria, Egypt, Morocco, Tunisia, and Yemen), Demirguc-Kunt, Klapper, and Randall (2013) find that only “48 percent of adults say that they have heard of Islamic banks in their country that offer services to people like them” (Demirguc-Kunt, Klapper, and Randall 2013, 31). The authors also concluded that “income and access to information are strongly and positively associated with awareness and use of Sharia-compliant banking products” (Demirguc-Kunt, Klapper, and Randall 2013, 31). It is therefore crucial that supply-side policies and efforts in increasing access to Islamic financial services are complemented with demand-side strategies such as public awareness, information, and education campaigns on Islamic finance.

Serious doubts remain among the academics, policymakers, and practitioners on the role of Islamic finance in promoting financial inclusion, SDGs and shared prosperity. However, the growths and successes of *Akhuwat* in Pakistan and *Resalat Qard Hassan* Bank in Iran which are operating in accordance with Islamic social finance model of *Qard Hassan*, provide strong hope that Islamic finance can in fact help with some of the challenges facing the global community. (Mohseni-Cheraghrou, 2017) In particular, detailed case studies of *Akhuwat* and *Resalat Qard Hassan* reveal that, if implemented in ways that are in accordance with its spirit of economic justice, Islamic social finance can achieve much in the way of reducing/preventing poverty and enhancing shared prosperity while also promoting social/financial inclusion.

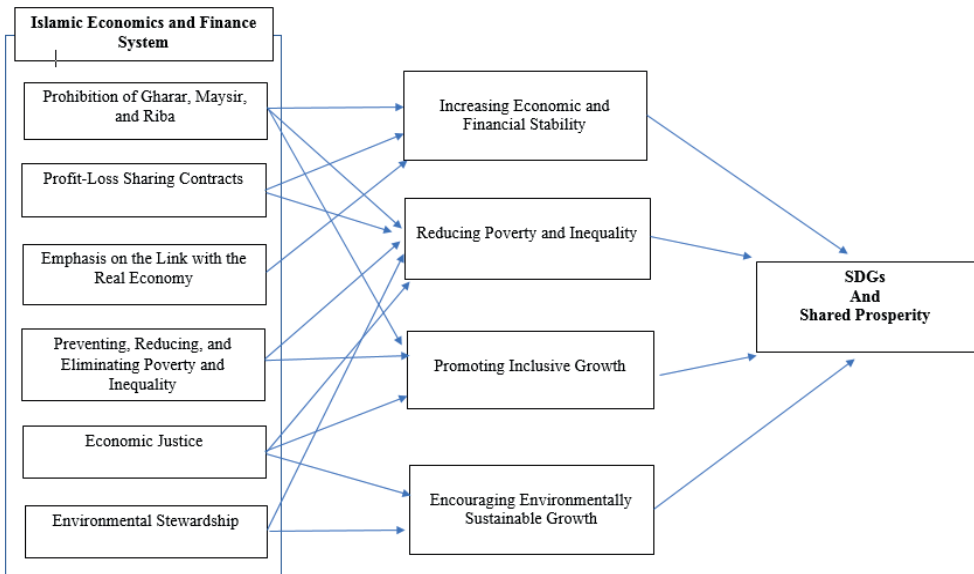


Figure 10. IEF, SDGs, and shared prosperity

References

- Ahmed, M. (2013). *Keynote Speech: 5th Annual Arab Policy Forum on Financial Inclusion*. Washington, DC: International Monetary Fund.
- Alkire, S., Jindra, C., Aguilar, G. R., & Vaz, A., (2017). Multidimensional Poverty Reduction Among Countries in Sub-Saharan Africa. *Forum for Social Economics*, 2017.
- Beck, T., Demirguc-Kunt, A. (2008). Access to Finance: An Unfinished Agenda. *World Bank Economic Review*, 22(3), 383–396.
- Beck, T., Demirguc-Kunt, A., Levine, R. (2004). Finance, Inequality, and Poverty: Cross-Country Evidence. *Policy Research Working Paper Series 3338*, Washington, DC: World Bank.
- Demirguc-Kunt, A., Klapper, L., Randall, D. (2013). Islamic Finance and Financial Inclusion: Measuring Use of and Demand for Formal Financial Services among Muslim Adults. *Policy Research Working Paper 6642*, Washington, DC: The World Bank.
- Demirgüç-Kunt, A., L. Klapper, and D. Singer. (2017). Financial inclusion and inclusive growth: A review of recent empirical evidence. *Policy Research Working Paper 8040*, World Bank, Washington, DC.
- Environment. (2020, Apr 16). *World Bank*. Retrieved From <http://www.worldbank.org/en/topic/environment/overview>.
- GIFR. (2012). Global Islamic Microfinance Landscape. Global Islamic Finance Report.
- Global Waste on Pace to Triple by 2100. (2013, October 30). *World Bank*. Retrieved From <http://www.worldbank.org/en/news/feature/2013/10/30/global-waste-on-pace-to-triple>.
- Kamali, M. H. (2010). *Environmental Care in Islam: A Qur'anic Perspective*. Paper presented at the 15th General Conference of The Royal Aal al-Bayt Institute for Islamic Thought (27-29 September 2010), Amman.
- King, M. (2016). *The End of Alchemy: Money, Banking and the Future of the Global Economy*. New York: Little, Brown.

- Kirby, A. (2016). Human Consumption of Earth's Natural Resources Has Tripled in 40 Years. <https://www.ecowatch.com/humans-consumption-of-earths-natural-resources-tripled-in-40-years-1943126747.html>.
- Kula, E. (2003). Islam and utilization policies for environmental resources. *The Journal of Interdisciplinary Economics*, Vol. 14.
- Levine, R. (2005). Finance and Growth: Theory and Evidence. In *Handbook of Economic Growth, Vol. 1*, (eds.) Philippe Aghion and Steven Durlauf, 865–934. Amsterdam: North-Holland Elsevier.
- Mirakhor, A., & Hossein A. (2010). *Islam and the path to human and economic development*. New York: Palgrave Macmillan.
- Mohieldin, M., Iqbal, Z., Rostom, A., & Fu, X. (2012). The role of Islamic finance in enhancing financial inclusion in organization of Islamic cooperation countries. *Policy Research Working Paper* No. 4435, Washington, DC: World Bank.
- Mohseni-Cheraghloou, A. (2016). The aftermath of financial crises: A look on human and social wellbeing. *World Development*, 87, 88–106.
- Mohseni-Cheraghloou, A. (2016). Financial Inclusion and Poverty Alleviation in Muslim-majority Countries: The Role of Islamic Finance and Qard Hassan. in Muhamed Zulkhibri and Abdul Ghafar Ismail, eds., *Financial Inclusion and Poverty Alleviation: Perspectives from Islamic Institutions and Instruments*, Palgrave Macmillan, 2017, pp. 141–197.
- Nasr, S. H. (1992). Islam and the Environmental Crisis. In *Spirit and Nature: Why the Earth is a Religious Issue*. pp. 83-108. Steven C. Rockefeller and John C. Elder, eds. Boston: Beacon Press.
- Olinto, P., Kathleen B., Sobrado, C., & Hiroki U. (2013). The State of the Poor: Where Are the Poor, Where Is Extreme Poverty Harder to End, and What Is the Current Profile of the World's Poor? Washington, D.C.: World Bank.
- Shirazi, N. S. (1996). Targeting, coverage and contribution to household income: the case of Pakistan. *Journal of Economic Cooperation Among Islamic Countries*, 17(3-4), 165–186.
- World Bank. (2015). *Climate Change Complicates Efforts to End Poverty*. Washington D.C.: World Bank.
- World Bank & IHME. (2016). *The Cost of Air Pollution: Strengthening the Economic Case for Action*. Washington, D.C.: World Bank.

CHAPTER 6

DIGITAL FINANCIAL INCLUSION, ISLAMIC BANKING STABILITY AND SUSTAINABLE ECONOMIC GROWTH

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Abstract

In the current 4th industrial revolution, digital finance is at the forefront of banking infrastructure and sustainable economic growth. It is becoming the baseline in conventional and Islamic banks alike. However, both the negative and positive effects of financial inclusion bring the question of whether digital finance can be the solution. This study intends to examine the role of digital financial inclusion (DFI) in promoting sustainable economic growth through Islamic banking stability using the unbalanced panel data by deploying panel corrected standard errors and two-stage least square-instrument variable techniques. The study also aims to focus on the impact, prospect, and the challenges of DFI and how the proper application of DFI can bring sustainable financial growth to achieve the SDGs. Our results suggest that DFI endorsement may ensure sustainable economic growth and stability within banks, specifically Islamic banks, which is a step towards SDGs achievement.

Keywords: Islamic banks, digitization, Fin-Tech, sustainable economic growth, banking stability, sustainable development goals

1. Introduction

Digital financial inclusion (DFI) is not far different from the notion of financial inclusion (FI), rather it is the extension phase of FI where advanced technology is being entertained. Technology changes the conventional behaviour of the financial sector by providing easy access to various financial services in profound ways. Over the years, all countries in the world have been trying to find a proper way to implement the latest technology in the financial sector. In this regard, in recent years, DFI is seen as a changing agent that can bring a revolutionary development in the overall financial sector of the world (Ozili, 2018). Indicating the world financial analysts, Jamie Caruana, the General Manager of the Bank for International Settlements, states, “(they) have the opportunity - and indeed the responsibility - to prepare the standard-setting world for both the risks and the rewards of the digitization of financial services” (CGAP, 2015). Besides, the recent Covid-19 pandemic has put forward the implementation of digital financial services (DFS) to accelerate and enhance FI, amid social distancing and containment measures. DFI, basically, refers to those financial services that can be enjoyed through electronic devices in a cashless manner without much pain by which both the service providers and receivers can be benefitted (Klapper, 2017).

Reckoning the undeniable impact and importance of DFI, the prominent Islamic banking sector, one of the well-known dominating sectors of the world economy (Ahmed et al., 2015), is also on its way to a fully fledged implementation of DFS (e.g. Fintech, E-wallet and other cashless transactions) in a full fledge. Many Islamic banks globally have launched a minimum range of digital finance services and other banks are paving the way towards the same experience since wider inclusion of easily accessible financial services can help banks to attain stability (Ahamed & Mallick, 2019), push for financial advancement (Demirguc-Kunt et al., 2015), and advance the global financial sector (Iqbal & Llewellyn, 2002). DFS are more efficient, productive, faster and cheaper than any other conventional methods of financial services. Therefore, Islamic banking sector is considering the inclusion of DFS as it ensures banking stability which conveys the message of the economic stability of any country and consequently works towards reaching the sustainable development goals (SDGs) by 2030 (Banna et al., 2020). Furthermore, one of the prime focused areas of the SDGs is to have sustainable economic growth that can be attained through the banking sector. Attainment of the SDGs becomes impossible without filling a huge investment gap. There is a \$2.5 trillion investment gap to close in order to achieve the SDGs by 2030 (Wilson, 2016, July) which can be reduced by the banking sector along with other financial institutions (Niculescu, 2017).

To meet this huge investment gap to attain the SDGs, scholars, including Islamic financial scholars, foresee the prospects of DFI through a wider lens as DFI is the extension of FI that was successful after the 2007-09 global financial crisis (GFC) which caused 15 trillion USD loss from the global financial sector (Ahmed et al., 2015). In this current situation of the pandemic, the implementation of DFI is seen more timely since the unexpected Covid-19 pandemic has created an unexplainable burden on the global financial market as most of the countries have announced stimulus packages to boost their economy which will ultimately put pressure on the banking sector. Hence, it is expected that DFI will play a crucial role during the crisis period to retain banking stability (Ahamed & Mallick, 2019), particularly the stability of the Islamic banking sector (Ahmed et al., 2015) that has been proven to be more stable as compared to their counterpart during and after the crisis. Studies show that FI have already played a significant positive role in promoting banking stability (e.g., Ahamed & Mallick, 2019) by keeping the economy alive (such as, helping people and business to do their daily financial transactions in a cashless and contactless manner, providing aid to the poor people specially the unbanked people by using mobile money services) in spite of lockdowns, quarantines, travel restrictions, and other social distancing measures due to Covid-19 crisis. However, DFI, in turn, may also affect financial stability distressingly with excessive financial innovations (Mani, 2016), for instance, because the rapid increase of DFS by both bank and non-bank financial institutions will disrupt the regulatory and supervisory activities by the regulatory authority, confidential data may be leaked in cyberattacks, money laundering and financing in terrorism may increase. However, both the negative and positive effects of FI and DFI bring the question of whether the proper implementation of digital finance in the Islamic banking sector can be a solution for attaining inclusive economic growth or not. Hence, this paper intends to, in the context of the Islamic banking industry, investigate how DFI promotes sustainable economic growth through ensuring banking stability.

Despite realising the unavoidable importance of the implementation of DFI, studies are very rarely found except a few like Ahamed and Mallick (2019) who show the impact of FI (not DFI) on bank stability in general, Ozili (2018) and Koh et al. (2018) who draw the prospects and the challenges of DFI, and Arner et al. (2018) who sketch a framework for digital financial transformation. Besides, Chuen and Deng (2017b) in their volume 1, show the importance of mobile technology in the banking sector through the advancement of cryptocurrency, FinTech, and InsurTech. They emphasize on drawing a new business model for the banking industry focusing on both digital banking and engineering theories and

developments that encourage innovation. Also, in their volume 2, Chuen and Deng (2017a) show the developments of future finance by analysing the recent innovations in the financial sector and providing feasible solutions for banks and start-ups to grow. Therefore, very few studies have attempted to investigate the link between digital financial inclusion and bank stability which are mostly theoretical in nature mainly focusing on the conventional rather than Islamic banking sector. However, our study aims to empirically investigate the impact of DFI on Islamic banking stability that consequently leads to achieving inclusive economic growth. Hence, this empirical study is expected to contribute to the existing literature by showing how the proper application of DFI ensures Islamic banking stability, especially in the post-Covid-19 pandemic since during and after the pandemic, physical transactions or other banking functions are hindered due to lockdown and social distancing measures, which is a means that leads to sustainable economic growth and subsequently helps attain the SDGs. Moreover, this study also adds value to the literature by explicating the impact, prospect, and the challenges of DFI by suggesting policies to surmount those challenges.

In this regard, the study has used the data of 183 banks of 22 countries from the year 2011 to 2018 from Orbis bank-focus, Global Findex and financial access survey (FAS) databases by deploying panel corrected standard errors and two-stage least square-instrument variable techniques. The results suggest that DFI leads to inclusive economic growth and an integrated inclusion of digital finance by Islamic banks is not only a phenomenon for attaining the SDGs, rather it brings the financial stability of the bank itself. The findings also show that the interaction effect of DFI with GDP which denotes the robustness of the above results and suggest that accelerating digital finance in the sample countries through Islamic banks is considered as one of the significant means for the banking sector stability that subsequently leads to sustainable economic growth.

The organisation of the remaining portion of the paper goes in the following order. Section two displays an account of the literature review while methodology is drawn in Section three. Section four and Section five respectively illustrates the analysis and conclusion with policy recommendations.

2. Literature review

This section gives an account of the comparison of DFI and FI and their relation to bank stability and inclusive economic growth. In this regard, the study of Siddik and Kabiraj (2020) shows the impact of digital finance on FI and how the proper implementation of DFI can spur inclusive economic growth by eradicating poverty. DFI has brought a revolutionary

change in the financial sector as people of all economic classes can be included in the formal financial services by its proper execution as Ozili (2018) illustrates that the key aim of DFI is to provide formal financial services to the poor, rural, and unprivileged people. This proves that DFS delivered by any device connected to the internet has a long run impact on banking performance that helps banks to be financially stable and consequently gives benefits to the government through generating higher tax revenue (Manyika et al., 2016).

According to Gomber et al. (2017), DFS includes innovative financial products, finance related software and a great way of interaction and communication with the customers and such services are provided by FinTech and other finance related service providers. It can transform people from cash-based to cashless transactions where they need a mobile phone which is owned by almost 50% of people in the developing countries (World Bank Group, 2013). Most of the countries of the world are turning to this service. According to Pénicaud and Katakam (2019), more than 80 countries in the world are launching DFS through mobile phones as it brings welfare to the people (CGAP., 2015).

The proper application of DFI increases the profitability of the banks that brings financial growth and stability (Ozili, 2018). To see the impact of SWIFT (an initial form of the digital revolution) on the stability of banking sector, Scott et al. (2017) conducted an empirical study examining 6848 banks of 29 American and European countries over a period from 1998 to 2005 and found a long-term positive impact on the profitability of the banking sector. Moreover, García and José (2016) also say that FI and financial stability goes in a parallel line.

As it is an ongoing research topic, studies scarcely show the impact of DFI from the empirical viewpoint. The recent study of Klapper et al. (2019) shows that through the means of DFS, informal business institutions can be registered as formal business institutions and help the government to collect taxes more easily by enforcing laws since in databases all the records are available and there is no way to escape. More tax collection contributes to the national revenue sector eventually makes the country's economic growth stable. Before launching the DFI in full pledge, the prime focus should be given to financial literacy. Financial literacy is an inseparable part of DFI that enables persons to enhance financial resilience. As a matter of fact, throughout the world only 33% adults have financial knowledge—that is they understand at least 3 out of the 4 main financial literacies: interest rates, interest compounding, inflation, and risk diversification (Klapper & Lusardi, 2019).

Furthermore, inclusive finance brings banking stability and financial sustainability. Taking a sample of 31 Asian countries from 2004 to 2016, the empirical study of Li et al.

(2019) finds that FI has an enormous positive influence on financial sustainability. Other empirical studies like Neaime and Gaysset (2018) on MENA countries, Beck et al. (2014) on African countries and Ahamed and Mallick (2019) on 86 countries also show a very significant impact of FI on bank stability as well as financial sustainability. In some cases, FI seems to be incomplete without the implementation of DFI that plays a role in accelerating financial inclusion. The empirical study of Senou et al. (2019) in the context of West Africa shows that the affordability, accessibility and availability of DFI should be taken into account to accelerate FI in that region. Moreover, DFI strengthens the functions of FI as stated the nexus between FI and DFI in the context of the Islamic banking sector is very strong and DFI fills the gap of FI by implementing the latest technological innovation (Moufakkir & Mohammed, 2020). Another very recent study of Banna et al. (2020) shows that FI after the GFC has played a very significant role in promoting the Islamic banking efficiency where they eventually suggested to implement DFI in the Islamic banking sector to keep up with the demand of time that will help augment banking stability and spur inclusive economic growth.

Realising the impact of DFI found through previous studies, Islamic banks have endorsed DFI significantly. Although there are a number of empirical studies pertaining to the role of FI, DFI and banking stability in terms of conventional banking and economic growth, we are unique in investigating the impact of DFI on Islamic banking stability eventually leading to sustainable economic growth. Since it is evident from the existing literature that the integration of digitization in the FI is a noble mechanism to reach out to the people with more convenient financial support through the utilization of technologies, the current study endeavours to dig deep into the opportunities and impacts of DFI to achieve sustainable economic growth through Islamic banking stability. Thus, the proposed study is expected to add value to the prompt implementation of inclusive digital finance in the Islamic banking sector which will ultimately facilitate the achievement of sustainable operation of financial institutions and contribute to sustainable economic growth.

3. Methodology

We designed our analysis into two folds. First, we examined the impact of DFI and their interaction effect with GDP on Islamic banking stability to see how DFI helps to achieve sustainable economic growth through Islamic banks. Second, this study sheds light on the impact, challenges, and the way forward of the DFI that can bring sustainable economic growth to achieve the SDGs. The following data and methods have been used to analyse the former one. Previous literature and various reports were used to analyse the latter one.

3.1. Data

Though a good number of financial companies along with the banking sector are rendering finance-related services, this study, however, merely considers the data of the banking sector, more specifically, the Islamic banking sector. Initially, the study has considered the annual data of 223 Islamic banks from all countries offering Islamic banking services. After that, due to the data unavailability and missing values, some banks have been excluded from the sample. Finally, the unbalanced panel data of 183 banks in 22 countries (in Appendix A1) from 2011 to 2018 have been considered as we intend to see the after-GFC effect. We take multiple countries into account as we assume that the nature of operational activities of Islamic banks is similar (Banna et al., 2020). The data is from various sources: i) Orbis Bank-Focus database for bank-specific data; ii) IMF-Financial Access Survey (FAS) and Global Findex for DFI data; and iii) World Bank-WDI database and previous literature for macroeconomic and instrumental variables.

3.2. Methods

Bank stability

Following Kim et al. (2020), this study uses two financial stability measures: a) Z-score and b) volatility of ROAA. Z-score has gained a wider acceptance in the banking and finance literature as an unbiased parameter of bank riskiness (Fang et al., 2014). Z-score is measured as:

$$Z - score_{it} = \frac{ROAA_{it} + EQT_{it}}{\sigma(ROAA)_{it}} \quad (1)$$

Where $ROAA_{it}$, EQT_{it} and $\sigma(ROAA)_{it}$ are the return on average assets, the equity to assets ratio, and the 2-year rolling standard deviation of ROAA of bank i in year t , respectively. The score can be interpreted in the way that if the mean is higher than the number of standard deviations, the returns would have to fall before all equity in the bank becomes depleted (Ahamed & Mallick, 2019). The natural logarithm of Z-score has been used in this study to minimise the skewness. Besides, the natural logarithm of the volatility of ROAA [$\ln(\text{sd}(\text{ROAA}))$] has also been considered as banking stability for this study. We interpret that, a bank with less volatility of ROAA has displayed more stability.

Digital financial inclusion proxies

As the purpose of this study is to test the role of DFI in the stability of Islamic banks to promote sustainable economic growth, digital financial inclusion proxies have been measured

using the data of FAS database from 2011 to 2018. In this regard, both the digital financial outreach (supply side) and usage (demand side) penetrations have been considered for DFI based on the previous studies (e.g., Ahamed & Mallick, 2019; Banna & Alam, 2020; Banna et al., 2020). Previous literature considered financial inclusion accounting for the number of ATMs, bank branches, and bank accounts as proxies; whereas, this study considers digital financial inclusion taking the number of mobile money agent outlets, mobile money accounts, and mobile and internet banking transactions (Siddik & Kabiraj, 2020) as proxies. Since this study deals with digital financial inclusion, we, therefore, choose the variables related to those financial services that can be enjoyed through electronic devices in a cashless manner. As a part of geographic and demographic outreach penetrations, mobile money agent outlets per 100,000 adults, as well as per 1,000 km² have been considered, while the number of mobile money accounts per 1,000 adults, as well as mobile money and internet banking transactions per 1,000 adults, have been considered as a part of the usage of digital financial service penetration. We endorse mobile money, a digitised technology, which allows people to retrieve, save, and spend money using a mobile device (Subramaniam, 2020). The rapid pace of mobile money (digital financial inclusion) broadens the room and spectrum of financial services to reach the poorest and most remote parts of the society which were the biggest obstacles for financial inclusion since these poor and rural people are away from formal banking facilities, and they have a shortage of the minimum balance required to open a bank account aside from the obstacle of their conservative religious outlook. The mobile and internet banking, on one hand, has banked the unbanked and, but on the other hand, has enhanced banking stability through minimising operational costs and maximising efficiency and productivity. Apart from that, we also consider “Made or received digital payments in the past year (% age 15+)” as a proxy of DFI for the robustness of our study. However, due to data unavailability of some DFI components, we could not develop a single index of DFI using principal components analysis.

Bank-specific and macro-economic variables

We control both the bank-specific and macroeconomic variables. Following Fang et al. (2014), the ratio of total loans over total assets (Loan ratio - LR) has been used to account for liquidity risk of a particular bank. To control potential size effect and the loan portfolio risk of an individual bank, the study has considered the logarithm of total assets (Bank size - SIZE) and the ratio of loan loss provision to total loans (Loan loss provision - LLP) respectively. The ratio of other operating income to total operating income (Revenue diversification- RD) has been considered to control the ambiguous effect of off-balance sheet activities. Since excessive risk-taking tendency can be reduced by better management quality,

the ratio of total earning assets to total assets (Management quality - MQ) has been taken into consideration. The equity ratio (Capitalisation - CAP) has been used to control the capital risk as well-capitalised banks have the less risk-taking tendency. This paper uses several macroeconomic variables such as annual GDP growth (GDP) to control business cycle and economic growth, and good governance to control institutional effect. Good governance (GG) index is constructed using standardised approach of Kaufmann et al. (2010) governance indicators which are consisted of six components such as, Control of Corruption, Government Effectiveness, Political Stability and Absence of Violence/Terrorism, Regulatory Quality, Rule of Law, and Voice and Accountability.

Estimation technique

To examine the impact of DFI and its interaction effect with GDP on Islamic banking stability, the following baseline regression analysis has been used in this study.

$$Y_{ijt} = \alpha + \beta DFI_{jt} + \gamma Z_{ijt} + \vartheta M_{jt} + \varphi(GDP \times DFI)_{j,t} + \varepsilon_{ijt} \tag{1}$$

Where, $Y_{ijt} = \ln(\text{Z-score})$ and $\ln(sd(ROAA))$ as dependent variables which are considered as proxies for bank stability of bank i of country j in year t .

DFI_{jt} = Digital Financial Inclusion proxy in which the individual components of country j in year t have been considered for the analysis.

Z_{ijt} = bank-specific factors of bank i of country j in year t (such as *SIZE, LR, LLP, RD, MQ* and *CAP*).

M_{jt} = Macroeconomic factors of country j in year t (such as *GDP* and *GG*).

$(GDP \times DFI)_{j,t}$ = the interaction effect of GDP and DFI of country j in year t .

$\beta, \gamma, \vartheta, \varphi$ = Coefficients of the variables, α = Constant, ε_{ijt} = Error term.

Following Alfadli and Rjoub (2019), this study uses panel-corrected standard errors (PCSE) method (Beck and Katz (1995)) to examine the fundamental relationship between the variables. There are mainly two reasons behind choosing this method: i) it reduces the problems prevailing to cross-sectional dependence and sequential correlation and ii) it determines, using a suitable instrument, the likelihood of endogeneity among some of the independent as well as dependent factors in a particular model (Alfadli & Rjoub, 2019). Besides, following Kim et al. (2020), Panel Two-Stage Least Squares - Instrumental Variables (2SLS-IV) method has been used to mitigate possible endogeneity issues for the robustness of the results.

4. Results and Analysis

The results of the relationship between bank stability and DFI as well as the interaction effect of DFI with GDP on bank stability have been illustrated in this section. In addition to these, the impact, challenges, and the way-forward of DFI have also been discussed here.

4.1. Digital financial inclusion and bank stability

Descriptive statistics

The descriptive statistics of bank stability, SIZE, LR, LLP, RD, MQ, CAP, GDP, GG, and DFI are illustrated in Table 1. The table exhibits the descriptive statistics (mean, standard deviation-SD, and minimum-maximum values) of each variable in the sample. From this table few observations are very notable. First, the ln (Z-score) has an average value of 4.12 with an SD of 1.64, indicating that to annihilate bank equity, ROAA would have to drop by an average of 4.12 times of their SD. Moreover, the mean value of the Islamic banks size and SD are 7.46 and 2.01 respectively. Hence, such high yearly variation is visible by these results. The sample countries, in an average manner, have achieved 3.76% growth in their GDP over the year 2011 to 2018. Furthermore, the sample countries, on average, have 239 and 79 mobile money agent outlets per 1000 km² and per 100k adults respectively. Moreover, the number of mobile money accounts and the number of mobile money and internet banking transactions per 1000 adults are approximately 143 and 3142, respectively. Figure 1 shows an upward trend of the DFI components in the sample countries over the period of 2011 to 2018. This suggests a higher quantity of Islamic banks showed an increase – in 2018 compared to 2011 – in mobile money accounts as well as mobile money and internet banking transactions.

Table 1. Descriptive statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
<u>Bank stability</u>					
Ln of z-score using roaa	950	4.123	1.643	-3.647	9.775
ln(sd(roaa))	976	1.421	1.668	-3.531	7.254
<u>Bank specific</u>					
Bank size	1169	7.458	2.004	.032	11.486
Loan ratio	1127	.571	.225	.002	1.747
Loan loss provision ratio	829	.008	.026	-.273	.426
Management quality	1152	.745	.213	0	.997
Revenue diversification	1162	.565	2.263	-68.768	26.94
Capitalisation	1169	.195	.247	-1.244	1
<u>Macroeconomic</u>					
GDP growth (annual %)	1464	3.756	4.102	-16.678	15.212
Good governance	1464	0	1.09	-1.988	2.892

DFI

Number of mobile money agent outlets per 1,000 km ²	1464	239.205	956.105	.219	6869.77
Number of mobile money agent outlets per 100k adults	1464	79.436	124.482	1.09	768.054
Number of mobile money accounts per 1,000 adults	696	143.513	239.577	.393	1548.237
Number of mobile money and internet banking transactions (during the reference year) per 1,000 adults	664	3141.994	8229.441	0	56469.45
Made or received digital payments in the past year (% age 15+)	1400	45.017	30.998	2.602	97.029

Instruments

Mobile Share	1464	.943	.032	.883	1
Borrowed from family or friends	1464	34.77	12.146	10.506	60.465

Notes: GDP = Gross Domestic Products, roaa = Return on Average assets, sd = Standard deviation. Source: Orbis bank focus, WDI and FAS

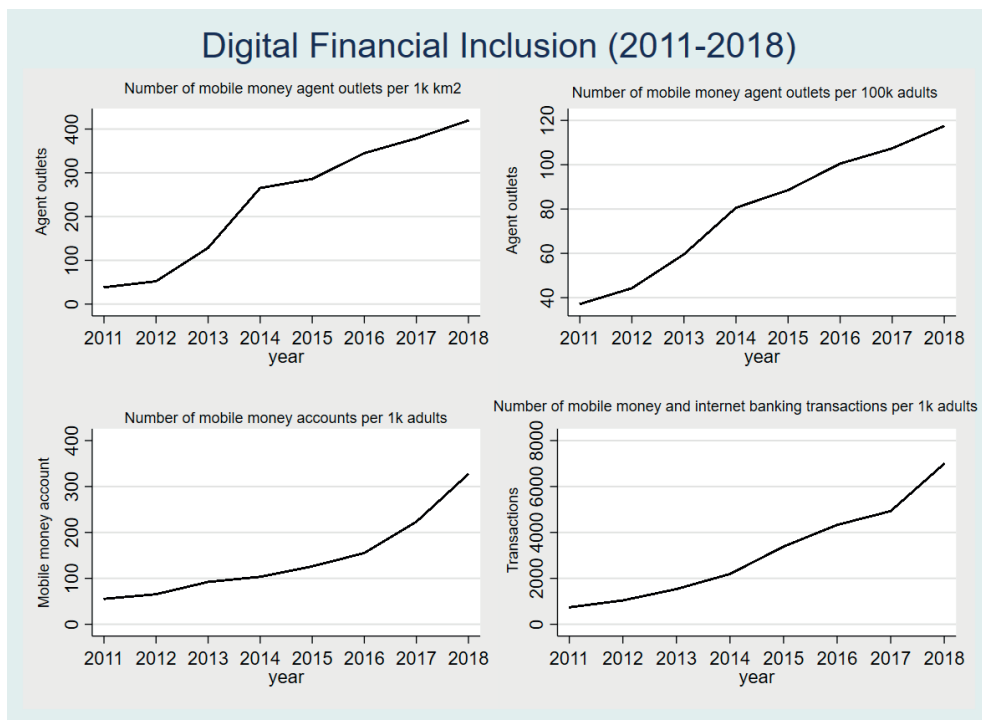


Figure 1. The trend of DFI in the sample countries (2011-2018)

To see the link between bank stability and DFI and the interaction effect of DFI with GDP on bank stability, initially the panel-corrected standard errors regression was considered. The study controls bank-specific variables such as, SIZE, LR, LLP, RD, MQ, CAP and macro-economic variables such as GDP, GG for our analysis.

We designed our analysis based on two main dimensions of bank stability: $\ln(z\text{-score})$ (model 1-4) and $\ln(sd(roaa))$ (model 5-8). Based on DFI, two main penetrations and four sub-penetrations such as financial outreach (both geographic and demographic) penetrations (Mobile money agent outlets per 1000 km² (model 1 & 5) and per 100k adults (model 2 & 6)) and financial usage penetration of the customers (number of mobile money accounts per 1000 adults (model 3 & 7) and mobile money and internet banking transactions per 1000 adults (model 4 & 8) were designed.

Table 2. Panel corrected standard errors regression

	Ln(Z-score)				ln(sd(ROAA))			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
DFI	0.178** (0.074)	0.490*** (0.094)	0.262 (0.170)	0.062 (0.091)	-0.141* (0.072)	-0.431*** (0.092)	-0.271 (0.173)	-0.047 (0.087)
SIZE	0.133** (0.054)	0.125** (0.053)	0.389*** (0.102)	0.404*** (0.102)	-0.214*** (0.040)	-0.201*** (0.038)	-0.447*** (0.055)	-0.465*** (0.055)
LR	0.473 (0.608)	0.749 (0.604)	1.021 (0.839)	1.108 (0.891)	-0.932** (0.429)	-1.188*** (0.422)	-1.540*** (0.586)	-1.656*** (0.619)
LLP	-9.816*** (2.444)	-9.672*** (2.418)	-9.843*** (2.522)	-9.849*** (2.596)	11.263*** (2.363)	11.526*** (2.422)	8.908*** (2.382)	9.021*** (2.484)
MQ	1.470*** (0.511)	1.575*** (0.499)	-0.495 (0.709)	-0.536 (0.752)	-0.849* (0.446)	-0.985** (0.437)	0.585 (0.701)	0.677 (0.742)
RD	-0.002 (0.002)	-0.002 (0.001)	0.001 (0.002)	0.002 (0.002)	0.001 (0.001)	0.001 (0.001)	-0.001 (0.002)	-0.001 (0.002)
CAP	2.077*** (0.475)	1.669*** (0.463)	3.125*** (1.054)	3.190*** (1.051)	0.280 (0.377)	0.624* (0.379)	-0.198 (0.424)	-0.223 (0.427)
GDP	-0.070* (0.038)	-0.098* (0.054)	-0.117 (0.164)	-0.004 (0.111)	0.080** (0.038)	0.128** (0.055)	0.069 (0.168)	-0.042 (0.110)
GDP*DFI	0.020* (0.011)	0.028** (0.014)	0.034 (0.033)	0.008 (0.019)	-0.023** (0.011)	-0.035** (0.014)	-0.032 (0.034)	-0.006 (0.018)
GG	0.253*** (0.080)	0.257*** (0.067)	0.192 (0.129)	0.209 (0.131)	-0.205*** (0.078)	-0.229*** (0.065)	-0.129 (0.117)	-0.161 (0.120)
year effect	yes	yes	Yes	yes	yes	yes	yes	Yes
country effect	yes	yes	Yes	yes	yes	yes	yes	Yes
Wald chi2	139.48***	196.17***	163.31***	163.73***	169.07***	214.30***	230.96***	222.82***
Obs.	683	683	320	320	703	703	327	327
R-squared	0.154	0.187	0.298	0.290	0.201	0.224	0.415	0.404

Notes: DFI = Digital Financial Inclusion, SIZE = Bank size based on total assets, LR = Loan ratio, LLP = Loan loss provision, MQ = Management Quality, RD = Revenue diversification, CAP = Capitalisation, GDP = Gross domestic products growth rate, GG = Good governance, Obs = Observations, ROAA = Return on Average assets, sd = Standard deviation. Standard errors are in parenthesis

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Number of mobile money agent outlets per 1,000 km² (model 1 & 5)

Number of mobile money agent outlets per 100k adults (model 2 & 6)

Number of mobile money accounts per 1,000 adults (model 3 & 7)

Number of mobile money and internet banking transactions (during the reference year) per 1,000 adults (model 4 & 8)

The findings (in Table 2) show that DFI has a positive relationship with Islamic banking stability (z-score) and a negative relationship with the volatility of ROAA. The result suggests that a higher level of DFI is significantly related to a higher level of banking stability (a high Z-score indicates greater stability, i.e., less risk taking, inclusive sustainable growth). Also, when DFI is enhanced in a country, the volatility of the ROAA is less and hence, more stability is obtained. Though the usage penetrations have an insignificant relationship, the financial outreach penetrations (both geographic and demographic) have a stronger association with bank stability. This suggests that DFI enriches the soundness of individual Islamic banks in the sample countries. These findings are similar with the previous studies (e.g., Ahamed & Mallick, 2019; Morgan & Pontines, 2014) that show a financial system with inclusive DFS tends to strengthen banking stability, and that the greater implementation of DFI reduces the excessive risk-taking tendency of a particular bank.

However, the insignificant effect of usage dimensions of DFI suggests that in the sample countries, banks and Fintech companies have provided sufficient access to finance but people lack the necessary knowledge to maximize utilization. This is due to the current early onset of digital finance in the sample nations and the “drive to maturity” (representative of the adoption rate and learning curve by the Stages of Economic Growth model of Rostow (1959)). In addition, there is not enough resources and education to teach citizens about contemporary finance (Morgan et al., 2019).

The study has apprehended a positive (negative) association between economic growth (GDP) and Islamic banking stability (volatility of ROAA) as growth influences banking stability. However, the results show that GDP alone has a negative (positive) effect on Islamic banking stability (volatility of ROAA). But interestingly, the interaction effect of DFI with GDP is positively (negatively) and significantly related to Islamic banking stability (volatility of ROAA). The interaction effect of DFI with GDP growth is considered because this shows how DFI contributes to achieving inclusive sustainable growth by improving the stability of the banking sector. While talking about the real or inclusive economic growth of any country, GDP comes to appear as the main determinant (Banna & Alam, 2020) that is a pivotal factor for long term economic development of a country (Ben-David & Papell, 1995). As both inclusive digital finance and GDP promote the economic advancement of any country, the interaction effect of both is also thought to bring inclusive sustainable growth in a heightening manner.

The economic impact of the results, in particular, suggests that inclusive digital finance may help Islamic banks to enhance efficiency and productivity by minimising operational

cost through maintaining minimum paperwork, documentation and fewer physical bank branches (Manyika et al., 2016). DFI, as an instrument, helps financial and monetary system regulators to reduce the level of inflation in both poor and developing countries by restricting the circulation of the amount of physical cash. Besides, DFI plays a significant role in enhancing the welfare of individuals and business sectors through which individuals can easily access funds in their bank accounts to perform financial transactions (CGAP., 2015). Therefore, with an inclusive financial sector, Islamic banks enjoy greater financial stability that eventually promotes inclusive economic growth. Besides, SIZE, LR, LLP, RD, CAP and GG are also significant determinants of Islamic banking stability.

Robustness test: Instrumental variables

Though possible reverse causality (endogeneity) is a common identification issue in any banking study, this study might have less concern of endogeneity issue as it investigates the role of DFI (a country-level indicator) on Islamic banking stability (bank-level indicator). Nevertheless, we test for robustness following Kim et al. (2020)'s 2SLS-IV technique.

We searched recent empirical studies on banking stability and FI to choose instrumental variables (IVs) to address any potential endogeneity issue. Following Ahamed and Mallick (2019), this study considers the proportion of Mobile cellular subscriptions (per 100 people) in other countries in the same region as an IV for 2SLS-IV technique. We have categorised countries based on High-Income, South Asia, Europe & Central Asia, Sub-Saharan Africa, East Asia & Pacific, and the Middle East & North Africa regions. It is argued that the banking operational costs, as well as physical and financial infrastructural deficiencies can be reduced through good communication infrastructure (Beck et al., 2007) and excessive use of mobile phones (Allen et al., 2014). Hence, countries with a large number of mobile subscriptions help to facilitate unbanked people to be banked. In addition to that, we consider 'percentage of adults borrowing from friends and family' as an instrumental variable. It is found that the key source of borrowing money in developing countries is friends and family (Demirguc-Kunt & Klapper, 2012) and it is also evident that only 9% of adults borrowed from formal financial sectors and 29% of the adults borrowed from friends and family. The higher percentage of adults borrowing from friends and family may influence DFI without directly affecting bank stability (Ahamed & Mallick, 2019).

Table 3. Instrumental variables and 2SLS regression - Robustness

	Ln(Z-score)				ln(sd(ROAA))			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
DFI	1.206*** (0.384)	2.322** (0.940)	0.149 (0.885)	0.006 (0.298)	-1.007*** (0.307)	-1.592** (0.687)	-0.059 (0.791)	-0.208 (0.277)
SIZE	0.449*** (0.106)	0.466*** (0.133)	0.549*** (0.124)	0.549*** (0.113)	-0.415*** (0.078)	-0.382*** (0.085)	-0.533*** (0.085)	-0.542*** (0.081)
LR	-0.365 (0.823)	-1.425 (1.095)	0.849 (0.945)	-0.813 (0.932)	-0.448 (0.692)	0.328 (0.878)	-1.923** (0.804)	-1.706** (0.809)
LLP	-7.763*** (2.436)	-7.445** (2.945)	-8.415*** (2.173)	-8.368*** (2.205)	-7.263*** (2.201)	-6.941*** (2.440)	-7.207*** (2.050)	-7.086*** (2.100)
MQ	0.654 (0.943)	0.644 (1.090)	0.677 (1.226)	0.705 (1.176)	0.066 (0.824)	-0.044 (0.891)	-0.095 (1.134)	-0.329 (1.075)
RD	-0.001 (0.001)	-0.001 (0.002)	-0.002 (0.002)	-0.001 (0.002)	-0.001 (0.001)	-0.001 (0.001)	0.001 (0.002)	0.001 (0.002)
CAP	4.964*** (0.969)	6.935*** (1.784)	4.058*** (1.374)	3.868*** (1.214)	-1.326** (0.607)	-2.147** (0.986)	-0.445 (0.734)	-0.391 (0.679)
GDP	-0.218*** (0.082)	-0.367** (0.168)	-0.263 (0.946)	-0.003 (0.354)	0.187** (0.073)	0.254* (0.137)	0.082 (0.841)	0.202 (0.328)
GDP*DFI	0.083*** (0.031)	0.113** (0.051)	0.049 (0.182)	0.002 (0.061)	-0.075*** (0.027)	-0.081* (0.042)	-0.009 (0.163)	-0.043 (0.057)
GG	-0.796** (0.324)	-0.614* (0.343)	-0.085 (0.212)	0.021 (0.202)	0.634** (0.254)	0.359 (0.241)	0.052 (0.183)	-0.071 (0.172)
year effect	yes	yes	Yes	yes	yes	yes	yes	Yes
country effect	yes	yes	Yes	yes	yes	yes	yes	Yes
Wald chi2	49.81***	35.82***	72.07***	71.78***	68.02***	55.95***	116.67***	120.07***
Obs.	547	547	251	251	566	566	257	257
R ²	0.0096	0.0033	0.2805	0.2792	0.0395	0.0064	0.4358	0.4211

Notes: DFI = Digital Financial Inclusion, SIZE = Bank size based on total assets, LR = Loan ratio, LLP = Loan loss provision, MQ = Management Quality, RD = Revenue diversification, CAP = Capitalisation, GDP = Gross domestic products growth rate, GG = Good governance, Obs = Observations, ROAA = Return on Average assets, sd = Standard deviation. Standard errors are in parenthesis *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Number of mobile money agent outlets per 1,000 km² (model 1 & 5)

Number of mobile money agent outlets per 100k adults (model 2 & 6)

Number of mobile money accounts per 1,000 adults (model 3 & 7)

Number of mobile money and internet banking transactions (during the reference year) per 1,000 adults (model 4 & 8)

The 2SLS-IV regression model does not change any result of the above analysis rather it shows a stronger relationship between DFI and Islamic banking stability by providing a higher coefficient (in Table 3). These findings show the robustness of the PCSE regression results and suggest that an inclusive digital financial system has a strong positive impact on Islamic banking stability in the sample countries. The interaction effect of DFI with GDP also denotes the robustness of the above results which suggests that accelerating digital finance in the sample countries through Islamic banks is considered as one of the significant means for the banking sector stability that subsequently leads to sustainable economic growth.

Robustness test: Alternative DFI proxy

We also consider ‘the percentage of adults who made or received digital payments in the past year’ (DigiPay) as an alternative proxy of DFI from the Global Findex database. The results, using an alternative proxy (in Table 4), assert the robustness of the previous results. Therefore, it is evident that with an inclusive digital financial sector, Islamic banks enjoy greater financial stability and overall, the country promotes sustainable economic growth.

Table 4. Alternative DFI proxy regression - Robustness

	(1)	(2)	(3)	(4)
	Ln(Z-score)	ln(sd(ROAA))	Ln(Z-score)	ln(sd(ROAA))
DFI	0.027*** (0.003)	-0.025*** (0.003)	0.016* (0.009)	-0.024*** (0.007)
GDP	-0.031 (0.037)	0.040 (0.038)	-0.015 (0.035)	0.029 (0.033)
GDP*DFI	0.001 (0.001)	-0.001 (0.001)	0.001 (0.001)	-0.001 (0.001)
Obs.	643	663	643	663
R ²	0.2556	0.2862	0.2347	0.2852
Wald chi2	251.364***	293.389***	93.021***	163.478***
control	Yes	yes	yes	yes
year effect	Yes	yes	yes	yes
country effect	Yes	yes	yes	yes

Notes: DFI = Digital Financial Inclusion, GDP = Gross domestic products growth rate, Obs = Observations, ROAA = Return on Average assets, sd = Standard deviation. Standard errors are in parenthesis

**** p<0.01, ** p<0.05, * p<0.1*

4.2. Impact, prospect and challenges of DFI

The impact and prospect of DFI is no longer an abstract notion, rather time demands its proper execution. The Executive Director of the Alliance for Financial Inclusion (AFI) Hannig (2017) says, “The adoption of digital finance will have a significant impact not only on financial inclusion but also inclusive economic growth.”. Highlighting the importance of DFI in their report, Manyika et al. (2016) draw some important notes based on the findings of field visits to seven countries and more than 150 expert interviews. They report (as shown in Figure 2), “Digital finance has the potential to provide access to financial services for 1.6 billion people in emerging economies, more than half of them women. Widespread adoption and use of digital finance could increase the GDP of all emerging economies by 6 per cent, or USD 3.7 trillion, by 2025,” which is equivalent to the economy of Germany. Moreover, 95 million new job scopes would be created in all sectors across the world through this additional GDP. Since GDP is seen as a key developmental index of an economy, the implementation of DFI in the Islamic banking sector will contribute to enhancing the GDP that will help to alleviate poverty and ultimately lead to inclusive economic growth to achieve the SDGs.



Figure 2. The impact and prospect of DFI. Source: McKinsey Global Institute (2016)

However, apart from a number of positive sides DFI has some threats and constraints too. Firstly, most of the people of lower income countries cannot afford to have a smart mobile phone to enjoy DFI. High speed internet is required for the smooth operation of DFI and is still unavailable in many countries (Ozili, 2018). Account hacking and ATM or SIM card cloning by the hackers are considered as acute threats to DFI (Wyman, 2017). Uninterrupted electricity is required for DFI and lack thereof causes card jamming in ATM-booths. Adeoti (2011) states several threats of ATMs in the context of Nigeria such as fake cards, card jamming, duplicate ATMs, and card swapping. Lack of digital literacy hinders the advancement of DFI that many countries still cannot ensure in a full pledge because of their financial constraints (Obiano, 2009). Loss of hand phone and cyber security problems are also threats to the proper execution of DFI.

5. Conclusion and policy recommendations

This study provides empirical evidence that greater DFI is positively associated with Islamic banking stability which suggests that DFI leads to sustainable economic growth and financial stability within banks. Governments, policymakers, and regulatory bodies can see DFI as a changing agent that can bring a revolutionary development in the overall financial sector of the Islamic banking industry, especially in the post Covid-19 era. In this regard, the implementation of the following policies can be taken into consideration.

First, people should be provided with digital financial literacy and the necessary infrastructure. Internet buffers can deter users from using DFI due to service interruptions. Financial literacy is also necessary (Klapper & Lusardi, 2019) as our findings also show that many countries have sufficient access to DFS, but their people lack knowledge to use it properly. Islamic banks and organizations need to hold workshops as well as maintenance and educational services for this. Time tested and time demanding DFS (e.g. Fintech using

artificial intelligence and machine learning) should be launched that will enhance banking stability and efficiency which will spur inclusive economic growth of the country.

In addition, the Islamic economy in conjunction with Islamic banks can enjoy the blessing of DFI by launching Zakat App since Zakat is the main source of revenue of any Islamic economy. Through this Zakat App, Zakat collection and distribution will be smoother and safer. Moreover, Islamic banks, in order to tackle hacking, cloning of ATM cards, debit cards, credit cards, and other technological threats, should implement updated software and databases so that hackers cannot breach the data. A proficient and unbiased regulatory body should be formed who can supervise all the activities in terms of DFI to minimise risks (Ketterer, 2017) and adopt innovative and time-tested policies to make it a successful journey.

Finally, our study has some limitations. We did not compare our findings with conventional banks and due to data unavailability, we had to exclude many Islamic banks of different countries which in turn provides scope for future studies.

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References

- Adeoti, J. O. (2011). Automated teller machine (ATM) frauds in Nigeria: The way out. *Journal of Social Sciences*, 27(1), 53–58.
- Ahamed, M. M., & Mallick, S. K. (2019). Is financial inclusion good for bank stability? International evidence. *Journal of Economic Behavior & Organization*, 157(C), 403–427.
- Ahmed, H., Mohieldin, M., Verbeek, J., & Aboulmagd, F. (2015). On the sustainable development goals and the role of Islamic finance. *World Bank Policy Research Working Paper (No. 7266)*. Retrieved from <https://openknowledge.worldbank.org/handle/10986/22000>
- Alfadli, A., & Rjoub, H. (2019). The impacts of bank-specific, industry-specific and macroeconomic variables on commercial bank financial performance: evidence from the Gulf cooperation council countries. *Applied Economics Letters*, 1–5. doi: 10.1080/13504851.2019.1676870
- Allen, F., Carletti, E., Cull, R., Qian, J. Q., Senbet, L., & Valenzuela, P. (2014). The African financial development and financial inclusion gaps. *Journal of African economies*, 23(5), 614–642.
- Arner, D. W., Buckley, R. P., & Zetsche, D. A. (2018). Fintech for Financial Inclusion: A Framework for Digital Financial Transformation. *A Report to the Alliance for Financial Inclusion (AFI)*. Retrieved from <https://www.afi-global.org/publications/2844/FinTech-for-Financial-Inclusion-A-Framework-for-Digital-Financial-Transformation>

- Banna, H., & Alam, M. R. (2020). Islamic banking efficiency and inclusive sustainable growth: The role of financial inclusion. *Journal of Islamic Monetary Economics and Finance*, 6(1).
- Banna, H., Alam, M. R., Ahmad, R., & Sari, N. M. (2020). Does financial inclusion drive the Islamic banking efficiency? A post-financial crisis analysis. *The Singapore Economic Review*. doi:10.1142/s0217590819420050
- Beck, N., & Katz, J. N. (1995). What to do (and not to do) with time-series cross-section data. *American Political Science Review*, 89(3), 634–647.
- Beck, T., Demircug-Kunt, A., & Martínez-Pería, M. S. (2007). Reaching out: Access to and use of banking services across countries. *Journal of Financial Economics*, 85(1), 234–266.
- Beck, T., Senbet, L., & Simbanegavi, W. (2014). Financial inclusion and innovation in Africa: An overview. *Journal of African economies*, 24(suppl_1), i3–i11.
- Ben-David, D., & Papell, D. H. (1995). The great wars, the great crash, and steady state growth: Some new evidence about an old stylized fact. *Journal of Monetary Economics*, 36(3), 453–475.
- CGAP. (2015). *What is Digital Financial Inclusion and Why Does it Matter?* Retrieved from <http://www.cgap.org/blog/what-digital-financial-inclusion-and-why-does-it-matter>.
- Chuen, D. L. K., & Deng, R. H. (2017a). *Handbook of Blockchain, Digital Finance, and Inclusion, Volume 2: ChinaTech, Mobile Security, and Distributed Ledger* (Vol. 2). Cambridge : Academic Press.
- Chuen, D. L. K., & Deng, R. H. (2017b). *Handbook of blockchain, digital finance, and inclusion: Cryptocurrency, FinTech, InsurTech, and regulation* (Vol. 1). Cambridge: Academic Press.
- Demircug-Kunt, A., & Klapper, L. (2012). Measuring financial inclusion: The global index database. *World Bank Policy Research Working Paper* (No. 6025). Retrieved from <https://openknowledge.worldbank.org/handle/10986/6042>
- Demircug-Kunt, A., Klapper, L., Singer, D., & Van Oudheusden, P. (2015). The global index database 2014: Measuring financial inclusion around the world. *World Bank Policy Research Working Paper* (No. 7255). Retrieved from <https://openknowledge.worldbank.org/handle/10986/21865>
- Fang, Y., Hasan, I., & Marton, K. (2014). Institutional development and bank stability: Evidence from transition countries. *Journal of Banking & Finance*, 39, 160–176.
- García, M. J. R., & José, M. (2016). Can financial inclusion and financial stability go hand in hand. *Economic Issues*, 21(2), 81–103.
- Gomber, P., Koch, J.-A., & Siering, M. (2017). Digital Finance and FinTech: current research and future research directions. *Journal of Business Economics*, 87(5), 537–580.
- Hannig, A. (2017). Paper presented at the Asian Development Bank's 2nd Asia Finance Forum. <https://www.af-global.org/news/2017/11/digital-finance-key-increasing-financial-inclusion-asia-pacific>
- Iqbal, M., & Llewellyn, D. T. (2002). *Islamic banking and finance: new perspectives on profit sharing and risk*. Cheltenham: Edward Elgar Publishing.
- Kaufmann, D., Kraay, A., & Mastruzzi, M. (2010). The Worldwide Governance Indicators : Methodology and Analytical Issues. *World Bank Policy Research Working Paper* (No. 5430). Retrieved from <https://openknowledge.worldbank.org/handle/10986/3913>
- Ketterer, J. A. (2017). *Digital finance: new times, new challenges, new opportunities*. Retrieved from <https://publications.iadb.org/en/digital-finance-new-times-new-challenges-new-opportunities>
- Kim, H., Batten, J. A., & Ryu, D. (2020). Financial crisis, bank diversification, and financial stability: OECD countries. *International Review of Economics & Finance*, 65, 94–104.
- Klapper, L. (2017). How digital payments can benefit entrepreneurs. *IZA World of Labor*.

- Klapper, L., & Lusardi, A. (2019). Financial literacy and financial resilience: Evidence from around the world. *Financial Management*. doi: 10.1111/fima.12283
- Klapper, L., Miller, M., & Hess, J. (2019). *Leveraging Digital Financial Solutions to Promote Formal Business Participation*. Washington DC: World Bank.
- Koh, F., Phoon, K. F., & Ha, C. D. (2018). Digital financial inclusion in South East Asia. In *Handbook of Blockchain, Digital Finance, and Inclusion, Volume 2* (pp. 387-403). London: Elsevier.
- Li, J., Wu, Y., & Xiao, J. J. (2019). The impact of digital finance on household consumption: Evidence from China. *Economic Modelling*, 86, 317–326.
- Mani, M. (2016). Financial Inclusion in South Asia—Relative Standing, Challenges and Initiatives. *South Asian Survey*, 23(2), 158–179.
- Manyika, J., Lund, S., Singer, M., White, O., & Berry, C. (2016). Digital finance for all: Powering inclusive growth in emerging economies. San Francisco: *McKinsey Global Institute*.
- Morgan, P., & Pontines, V. (2014). Financial stability and financial inclusion. *ADBI Working Paper (No. 488)*. Retrieved from <https://ssrn.com/abstract=2464018>
- Morgan, P. J., Huang, B., & Trinh, L. Q. (2019). The Need to Promote Digital Financial Literacy for the Digital Age. In *The Digital Age*. Retrieved from <https://www.adb.org/publications/financial-inclusion-digital-age>
- Moufakkir, M., & Mohammed, Q. (2020). The Nexus Between FinTech Adoption and Financial Inclusion. In *Impact of Financial Technology (FinTech) on Islamic Finance and Financial Stability* (pp. 193-209). Pennsylvania : IGI Global.
- Neaime, S., & Gaysset, I. (2018). Financial inclusion and stability in MENA: Evidence from poverty and inequality. *Finance Research Letters*, 24, 230–237.
- Niculescu, M. (2017). Impact investment to close the SDG funding gap. *United Nations Development Program (blog)*. Retrieved from <https://www.undp.org/content/undp/en/home/blog/2017/7/13/What-kind-of-blender-do-we-need-to-finance-the-SDGs-.html>
- Obiano, W. (2009). How to fight ATM fraud. *Nigerian Daily News*, June 21: P18.
- Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, 18(4), 329–340.
- Pénicaud, C., & Katakam, A. (2019). State of the industry 2013: Mobile financial services for the unbanked. *Gates Open Res*, 3. Retrieved from <https://www.gsma.com/mobilefordevelopment/resources/state-of-the-industry-2013/>
- Rostow, W. W. (1959). The stages of economic growth. *The economic History Review*, 12(1), 1–16.
- Scott, S. V., Van Reenen, J., & Zachariadis, M. (2017). The long-term effect of digital innovation on bank performance: An empirical study of SWIFT adoption in financial services. *Research Policy*, 46(5), 984–1004.
- Senou, M. M., Ouattara, W., & Aclassato Houensou, D. (2019). Financial inclusion dynamics in WAEMU: Was digital technology the missing piece? *Cogent Economics & Finance*, 7(1).
- Siddik, M. N. A., & Kabiraj, S. (2020). Digital Finance for Financial Inclusion and Inclusive Growth. In *Digital Transformation in Business and Society* (pp. 155-168). Cham: Springer Nature.
- Subramaniam, P. (2020). Banking: Digital initiatives aimed at financial inclusion. *The Edge Malaysia*. Retrieved from <https://www.theedgemarkets.com/article/banking-digital-initiatives-aimed-financial-inclusion>
- Wilson, G. E. R. (2016, July). *There's a \$2.5 trillion development investment gap. Blended finance could plug it*. Retrieved from World Economic Forum: <https://www.weforum.org/agenda/2016/07/blended-finance-sustainable-development-goals/>

Worldbank (2013). *Global financial development report 2014: Financial inclusion* (Vol. 2). Washington DC: World Bank.

Wyman, O. (2017). Accelerating Financial Inclusion in South-East Asia with Digital Finance. Retrieved from <https://www.adb.org/publications/financial-inclusion-south-east-asia-digital-finance>

Appendix A1: List of countries and number of banks

Country-Name	Number of Banks	Observations
BANGLADESH	9	72
EGYPT	3	24
INDONESIA	11	88
IRAQ	16	128
IRAN	29	232
JORDAN	5	40
KENYA	3	24
KUWAIT	12	96
LEBANON	3	24
MALAYSIA	19	152
MAURITANIA	4	32
OMAN	3	24
PAKISTAN	9	72
PALESTINIAN	2	16
QATAR	5	40
SAUDI ARABIA	4	32
SUDAN	19	152
TUNISIA	2	16
TURKEY	5	40
UAE	10	80
UK	7	56
YEMEN	3	24
Total	183	1464

Appendix A2: Pairwise correlation

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1) ln(Z-score)	1.000																
(2) ln(sd(roaa))	-0.854*	1.000															
(3) DFI1	0.033	-0.059	1.000														
(4) DFI2	0.147*	-0.008	0.839*	1.000													
(5) DFI3	0.190*	-0.193*	0.412*	0.571*	1.000												
(6) DFI4	0.100*	-0.099*	0.549*	0.618*	0.690*	1.000											
(7) DigiPay	0.093*	-0.005	0.375*	0.481*	-0.159*	-0.070	1.000										
(8) Bank-size	0.124*	-0.390*	-0.081*	-0.174*	0.210*	0.201*	-0.503*	1.000									
(9) Loan-ratio	0.104*	-0.228*	-0.346*	-0.392*	-0.013	-0.099*	-0.100*	0.196*	1.000								
(10) Loan-loss-provision	-0.161*	0.228*	-0.044	-0.044	-0.115*	-0.109*	-0.001	-0.153*	0.101*	1.000							
(11) Management-quality	0.172*	-0.262*	-0.395*	-0.399*	0.084*	-0.083*	-0.174*	0.264*	0.690*	0.024	1.000						
(12) Revenue-diversification	-0.077*	0.072*	0.226*	0.209*	0.061	0.055	-0.007	-0.051	-0.283*	-0.040	-0.201*	1.000					
(13) Capitalisation	0.126*	0.215*	0.232*	0.340*	0.033	0.071	0.126*	-0.506*	-0.346*	0.019	-0.213*	0.124*	1.000				
(14) GDP	-0.019	-0.042	-0.110*	-0.056*	-0.106*	-0.094*	0.036	0.032	0.214*	0.048	0.200*	-0.032	-0.087*	1.000			
(15) Good-governance	0.159*	-0.164*	-0.503*	-0.414*	0.199*	0.127*	-0.586*	0.225*	0.224*	-0.006	0.430*	-0.134*	-0.006	0.096*	1.000		
(16) Mobile-Share	0.040	0.094*	0.156*	-0.029	-0.089*	0.166*	-0.210*	-0.006	-0.206*	-0.043	-0.145*	-0.035	0.209*	-0.217*	0.225*	1.000	
(17) Borrowed from fnf	-0.184*	0.162*	0.519*	0.332*	-0.482*	-0.216*	0.069*	0.048	-0.167*	0.030	-0.345*	0.233*	0.025	-0.056*	-0.634*	-0.119*	1.000

* shows significance at the .05 level

Mobile money agent-outlets per 1k km2 (DFI1)

Mobile money agent-outlets per 100k adults (DFI2)

Mobile money accounts per 1k adults (DFI3)

Mobile money and internet banking transactions per 1k adults (DFI4)

Made-or-received digital-payments in the past year (% age 15+) (DigiPay)

CHAPTER 7

BRINGING ISLAMIC FINANCE HOME THROUGH THE CIRCULAR ECONOMY- SOCIAL FINANCE (CESF) DISCOURSE*

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Abstract

This paper argues that the current Circular Economy and Social Finance (CESF) discourse allows Islamic economists to re-align Islamic Banking (IB) and Islamic Finance (IF) with its roots, i.e. Islamic economics. Notwithstanding the impressive growth figures of Islamic Banking/Finance over the last three decades, reservations are voiced especially on the role and impact of IF in Muslim communities. This paper begins by critically discussing, albeit briefly, selected tensions that have evolved in Islamic Banking literature over the decades that show the departure of IB from IE. The criticism of IB has moved away from merely focussing on contracts/instruments or the debt/equity debate of the 1980s and early 1990s to a substantive systemic focus on the role of IF in developing the real economy to enhance the welfare of society as a whole. Genuine Islamization of Knowledge approach can be a methodological framework that allows IB/IF to be re-connected to IE and to the epistemological bases of Islam. The paper then briefly presents the basic ideas in the CESF discourse and argues that its central features provide an opportunity to re-align the current direction taken by Islamic Banking/Finance. The goals of IB/IF must help achieve the overall socio-economic goals of society and not merely serve outdated neoclassical economics objectives of maximizing individual shareholder welfare, with no consideration for overall equity considerations in society. The paper then argues that the CESF discourse provides a golden opportunity to re-visit the theory of decision-making in economics. Utilizing selected literature written on interdependent utility functions, it is proposed that economic decision-making in Islamic economics must include a concern for others, including its environmental and human impact, something that is at the base of the CESF agenda. The paper generally adopts selected discourse/content analysis involving literature on the various component parts of the paper.

Keywords: Islamic finance, circular economy, social finance, genuine Islamization, re-alignment

* An earlier draft of this paper was submitted for the CIS-QFC International Conference on Islamic Finance and the Circular Economy, Doha, December 3-5, 2019.

1. Introduction

The Islamic Banking/Islamic Finance (IB/IF) journey has made progress over the last 40 years. According to the Islamic Financial Services Board (IFSB), the Islamic Finance Services Industry (IFSI) grew by 6.9% in 2018 and is expected to continue growing at about 5% in 2019-2020, despite the very challenging geopolitical environment and global economic uncertainties (IFSB,2019). A lot of ground has been covered, and yet there is a feeling that IBF can still contribute more to the well-being of society. While it is clear that contemporary IB/IF has contributed to Muslim societies by generally providing an alternative to riba based financing, there is no doubt that lessons can be learned. Improvements can, and should, take place. While much literature has been written and analyses have been done over the last three decades or so (Hassan, 2018), much more can be done to provide a more meaningful role for IB/IF that is able to contribute to the real economy and to the lives of people directly. However, there are ‘tensions’ in contemporary IB/IF, especially seen in the literature of IB, both in theory and practice. There is a need to re-visit the role and contribution of IB/IF within the bigger Islamic economics framework and to move forward by re-aligning the goals of IB/IF to its Islamic economic (IE) foundations that were presented in the late 1960s and 1970s. The ‘IB child’ got separated from its ‘IE parent’ with the advent of commercial IB in the mid- 1980s. Performance of IB has generally been good with regards to the usual financial ratios used to measure bank performance, although there are criticisms that even the performance benchmarks need to reflect a more holistic yardstick that represents Islamic goals and objectives of well-being.

With increased financial crises and environmental/climate change issues, there has been a renewed realization that our current economic paradigm is not sustainable. In Standard and Poor’s Islamic Finance Outlook (2020), one of the ‘accelerators’ identified that could assist the IFSI to further strengthen its performance is that of opportunities in the Environmental, Social and Governance (ESG) framework. The natural link between IF and ESG provides IF the opportunity to make a difference. The circular economy and social finance discourse grants us a valuable opportunity to re-visit the understanding and role of Islamic finance on human well-being as a whole. This will bring about the realization of the visionary ideals put forward by pioneer contemporary Islamic economists in the 1970s, hence bringing Islamic banking and finance ‘home’ to where it belongs.

The paper utilises secondary research methodology, reviewing selected literature in the following sub-areas: current Islamic banking and some existing tensions that have led to the ‘separation’ of IB/IF from IE; the methodological approach of Islamization of Knowledge

that requires critical interaction between turath and Islami and modern knowledge; a brief overview of the financialization process, its downsides and IB/IF; the CESF discourse and how it allows for the re-integration of IB/IF to IE through re-visiting the theory of economic decision-making and interdependent utility functions.

2. Current Islamic Banking (IB)

According to the Global Islamic Economy Report 2019/20, Islamic Banking assets stand at approximately USD 1.75 trillion at the end of 2019, which makes up approximately 71% of the total Islamic Finance space. This means that other sub-sectors of finance such as the capital market, takaful and other investment funds are yet to challenge the dominance of banks in the IF space. This is quite different in the conventional scene, where banks face stiff pressures from other sub-areas of finance with the rise of the financialization process. If Islamic banks take appropriate action, the pitfalls of financialization can be avoided. Hence, many of the arguments made for IF can actually still refer to the example of IB. However, IB faces challenges of its own.

In general, the practice of Islamic banks is to emulate and replicate the operations of their conventional counterparts or mother companies, albeit with modifications made to contracts used, so that they are 'shari'ah compliant' (read Islamic law compliant). Simplistic as it may seem, this is the present general strategy of development adopted by contemporary IB. Despite the impressive quantitative growth of contemporary IB since its inception, there have always been views that are critical of the *qualitative direction* taken by the IB industry. A recent thesis by Amin (2018) argues that the entire conventional banking system is being replicated by the Islamic banking system. From debates about the purpose of IBs and the types of instruments used (in the 1980s till the mid-1990s), more recent debates have centred on whether operating at a minimum legal standard actually contributes to the genuine improvement of society as a whole. For example, Haniffa and Hudaib (2007) find that ethical values in IBs are considered personal, often under-communicated and likely to be undervalued, while another study finds that issues of CSR are not of major importance in most Islamic banks (Hassan and Syafri Harahap, 2010). Asutay's (2012) critical analysis of IB development leads him to label the sector as a social failure that can only be supplemented by developing non-banking forms of Islamic finance. IDB Prize winner Hassan (2018) in his comprehensive survey of Islamic banking practices from 1983-2016 identifies various challenges in the Islamic banking space as well as alternative practices that include social finance. An earlier paper on 'socially responsible investing' (2013) also made a case for a socio-economic role for Islamic funds.

Put another way, rather than focusing merely on the welfare of shareholders, the debate asks IB to broaden their purview to include all stakeholders. This seems to have had some positive impact on the development of IB. While still dominated by *mainstream commercial* banking practices, the last 10-15 years have seen efforts to establish *other types of Islamic banks*, modelled after what are called social banks that are part of social banking/finance. The last few years have also witnessed increasing discussion on the role of IBF in helping to attain the United Nations' SDGs. Positive steps have also been taken to move away from just focusing on banks to *non-bank alternatives*. In addition, the numerous crises originating usually in the financial sector over the last 20 years have provided a new opportunity to look again at the approach taken. In recent times, the circular economy discourse also provides another platform on which to re-consider the role of IB.

3. Selected Tensions in Contemporary Islamic Banking

Notwithstanding the development and progress made in contemporary IB over the last 40 years, there has also been criticism targeting both the conceptual and practical levels of IB. This section presents some of these tensions. (Haneef, 2009)

3.1. Islamicity, Ideals and Realities: 1980s vs 2010s

A central nagging tension that has plagued contemporary IB and annoyed its many practitioners since its formation, is the doubt concerning the 'islamicity' or authenticity of Islamic banks. In the 1980s, the discourse seemed to focus primarily on the practice of IB. The main criticism was that the practice tended to replicate conventional products, albeit with shari'ah (read legal) modifications. Critics saw the replications as merely legitimizing or justifying the general framework of the current banking system. However, even within academia, there was, and is, great debate about the direction of IB and the preferences of instruments being used. In the early 1970s, when Islamic economists started writing about Islamic economics, IB was one area specifically addressed. The writings as a whole put forward a very different IB to what IB developed into from the 1980s to the mid-1990s.

Initially, IB was proposed as part of an Islamic economic system that had a more 'developmental' approach and goal; an institution that not only focused on financial profits but also on the socio-economic goals of society. Hence pioneers of Islamic economics put forward equity and participatory modes of financing, such as profit and loss sharing, as the ideal form of IB practice. This would have required significant *structural change* to the institutions rather than just maintaining banks as we know them. However, the practice of Islamic banks and the realities of the replication approach saw preference for debt-based

instruments and modes of financing. Trying to push existing Islamic banks to adopt equity modes of financing and developmental goals of society went against the existing models of conventional commercial banks.

The current discourse on circular economy and social finance (CESF) allows us to re-visit this issue. No more should the goal of the bank be merely to maximise profits or shareholders' wealth. Shareholders constitute one stakeholder of the bank. However, society at large, the next generation as well as nature, are all stakeholders in the economic decision-making process of the bank. Discussions on CSR of banks have also opened up the space of discourse to take another look at the 'dominant IB as a mere *tijari* institution'. Today, the CESF discourse has broken down this paradigm which was put forward in the 1980s and religiously guarded by the IBF leaders and practitioners. Hence, even Malaysia- the leader in the 'old school'- has now put forward its new vision of 'Value Based Intermediation' or VBI that calls for 'looking beyond profit of the bank'. No one wants the 'practitioner-academic tension' that was so prominent in the 1980s and 1990s. The CESF discourse allows for much more interaction and agreement on the more holistic view of IBF in society.

3.2. Modifying Instruments or Fundamental Foundational Changes?

As stated above, one major criticism of IB has been that it is modelled after the interest-based (especially commercial) banking system. Hence, the role and function of banks have primarily been retained while focus has been on creating *sharī'ah* (read legal) compliant instruments. Academic critics see much of what is practiced by Islamic banks as more expensive duplicates of conventional interest-based banking instruments. However, one can even go back earlier to the mid-1980s where critics called the practice of contemporary IB (and Islamic economics) as *patchwork Islamization*, stemming from what they perceived to be the islamization of knowledge agenda. (Haneef, 2009) The argument was that since this agenda takes the modern discipline as the reference point and wants *to seek the relevance of Islam to it*, this can only result in patchwork and bad imitations. (Faruqi, 1982)

This criticism could have some truth to it if one was to take the simplistic and shallow understanding of islamization of knowledge that seems to have prevailed among some proponents of IB and those who have misunderstood what IOK was, especially from those practitioners of IB and those who support the patchwork approach. In addition, the criticism of IB practice should not have been equated with efforts to develop Islamic economics as even Islamic economists were critical of the practice of IBs. In one stroke, the criticised IB practice also unfairly implicated Islamic economics and the genuine agenda of Islamization of Knowledge.

This mis-guided and narrow approach to IB resulted in prioritizing banking and finance instruments without giving due emphasis to *foundational issues* that would have included developing and applying a consistent philosophy of Islamic economics and finance. This has led to the acceptance of the banking institution as it is, without understanding the history and foundations of modern banking itself and its role within an economic system. Hence, according to these critics, what has been attempted is to mould conventional banks into Islamic shape by purging them of interest and replacing them (or at least trying to) with profit-loss sharing arrangements. From the experience of Islamic banking over the last 40 years or so, we now see that this has actually not happened. Instead of equity instruments like *mudhārahah* and *mushārahah*, Islamic (commercial) banks have actually focused almost exclusively on debt instruments such as *murābahah* and *bay' mu'ajjal* or *bay' bi-thaman 'ajil*. Islamic economists initially argued against such debt instruments being given too much prominence by Islamic banks because of their relatively lower developmental impact. The CESF discourse now allows us the opportunity to take IBF back to its Islamic economics roots.

3.3. Debt Based IBF in Theory vs Debt-Based IBF in Practice

The 1980s and 1990s saw much tension between the ideals of IB initiated by pioneering Islamic economists in the 1970s and the practice thereof. . This continues to be debated today. Unfortunately, *shari'ah* compliance has increasingly come to mean the minimum legal standards that are permissible, rather than aiming to determine preferred options that would have a greater socio-economic impact on society as a whole in relation to developmental goals such as poverty eradication, job creation, entrepreneurial development, greater concern for social impact in society and greater sharing and distribution of benefits (and losses). Economics, a discipline that focuses on dealing with 'making better choices', could/should have played a role in enhancing the contribution of Islamic banks to the well-being of society. Unfortunately, there was in fact a marginalization of Islamic economics from the Islamic banking practice discourse.

Even if we accept the less preferred options of debt-based instruments (like BBA, *tawarruq* and *bay' al-inah*-based contracts in Malaysia) the theory-practice divide is further aggravated when the practice of debt-based IBF does not necessarily follow the requirements of the theory of debt-based IBF. A 2008 High Court judgement in Malaysia (Patail, 2008) gave a verdict that stated explicitly that the "BBA as practised in Malaysia was not a bona-fide sale" and for all practical purposes was more like a loan contract. Of course, this was opposed by the industry. On appeal, the presiding appeal court judgement found that the High Court judge above had erred in his judgement, since *the BBA is a sale contract and not a loan*. A simple reading of

this decision indicates that both judgements seem to be talking about different things: the appeal court was referring to the *theory of BBA*, while the High Court was referring to the *practice of BBA* in Malaysia. Why is there a departure between theory and practice? Why and how were the practices justified by the *sharī'ah* boards? This has brought into question the whole process of *sharī'ah* advisement and the qualifications of members of these boards.

3.4. The IBF Advisement Process: Moving from Minimum Standards to Value Based Intermediation

One controversial and sensitive area regarding the practice of IBF that has come under scrutiny is the role and qualifications of members of the *sharī'ah* advisory boards that govern individual Islamic banks. Central to this questioning of authority in IBF practice is the issue of what qualifications are needed to become *shari'ah* advisors and what the scope of their duties should be. In the case of Malaysia, while there is no explicit requirement for Islamic law/*fiqh* qualifications, the convention is that *sharī'ah* advisors should be trained in Islamic law. While not questioning the sincerity of these scholars, the issue may be more about the qualifications and understanding of these scholars of contemporary banking and finance, and one could add, also of the economic framework that banks function in. While attempts have been made to improve the knowledge of these shari'ah advisors, there is still much to improve in this advisement process.

Besides the 'replication/ duplication' criticism, much deeper soul searching needs to be done by all involved. Is it possible for us to truly develop genuine Islamic alternatives if we are not trained in economics and finance as well as in our heritage? Is it possible to look at instruments from the purely legal reasoning angle dealing with contracts, without also knowing the economic and social implications of those instruments and how development as a whole is served?¹ Can we truly claim that the instruments that are being put forward are genuinely serving public interest if we do not see the bigger picture of the economic and social goals of society? Should we not also give the required attention to ethical (and not just legal) issues in the decisions that we make? Why are we satisfied to just have the 'minimum legal requirement' as the standard that we want to follow?

Bank Negara Malaysia or the Central Bank of Malaysia has put forward its Value Based Intermediation (VBI) agenda. Basically, VBI argues that finance - in this case Islamic banking/finance - must look beyond the individual profit motive. While welcome, VBI needs much more discussion and debate to ensure that it is a transparent, all-inclusive discourse and

1 In this issue, M.N. Siddiqi (2007) pointed out the importance of understanding the 'macro-*fiqh*' dimensions of IBF on the economy and society as a whole as opposed to the 'micro-*fiqh*' qualifications of most legal scholars.

not to be monopolised by the same players who were championing the ‘old school’ of thought. Hence, while the instruments may be *fiqh* or legally compliant, they may not meet the requirement of being *sharī’ah* compliant in the true sense, since the *shari’ah* is much broader than law and consists of guidance (including laws, values, norms, principles etc.). By overly focusing on the legal requirements of banking financing contracts, IB/IF has failed to give sufficient attention to the bigger goals of socio-economic development of the ummah. The VBI initiative must be given attention by Islamic economists to avoid the pitfalls that have occurred due to the process of financialization over the last few decades.

4. Financialization: Has IBF made a difference?

In terms of a definition, financialization refers to ‘the increasing importance of financial markets, financial motives, financial institutions, and financial elites in the operation of the economy and its governing institutions, both at the national and international levels’ (Epstein, 2001, p.1). Its principal impacts are three, (1) to elevate the significance of the financial sector relative to the real sector. For example, in 1973, the ratio of financial transactions to global trade was 2:1, in 2004 it was 90:1²; (2) transfer income from the real sector to the financial sector, shown by the increase in the share of return to owners of money capital vis a vis workers or labor³; and (3) a general increase in income inequality and wage stagnation. Intra-country studies have shown there is a growing inequality between the rich and poor in all countries, if not in income, certainly in wealth inequality.⁴

Additionally, there are reasons to believe that financialization may render the economy prone to risk of debt-deflation and prolonged recession. Financialization is “a pattern of accumulation in which profits accrue primarily through financial channels rather than through trade and commodity production (Kripner, 2005, p. 2). Financialization also entails the internalization of finance at the level of corporate groups, where transnational corporations control the operation of financial markets. Many corporations even create independent financial companies and carry out credit operations. *Simply put, the financial sector no longer serves the real economy, but rather permeates and dominates it .*

2 For the figures quoted in this paragraph, please see Thomson and Dutta (2015), *A Primer on Financialization*. P. 6-14.

3 As an example, the average trading in foreign exchange for WTO countries in April 2013 was USD 53.9 trillion whereas average total trade in goods and services for WTO countries in 2012 was USD 58.9 billion, meaning that what is traded in foreign exchange in less than a week is more than the total trade in goods and services for one year!

4 Thomson and Dutta (2015) quote an UNCTAD study that shows that USD 800 billion of capital flows have actually moved from developing to developed countries in 2008, thus showing the domination of the rich over the poor.

If we are all in agreement with the above, what has been the performance of leading IBF countries vis-à-vis these features of financialization? Has the introduction and development of IBF made a difference to the issues of inequality, dominance of the financial sector, the rise of debt and environmental degradation? The short answer seems to be that countries that have introduced IF do not seem to have been spared from these, but this is more an intuitive statement. Much more serious research is needed.

The financial sector has gained stature and importance over the sectors of trade and manufacturing. Many Muslim countries are rushing to become 'Islamic finance' hubs. Huge numbers of people are seeking employment in the Islamic banking/ finance industry rather than becoming entrepreneurs or working in manufacturing. Inequalities have increased in many Muslim countries. Despite the claim that Islamic banking is more stable, since financial transactions always have an underlying real asset, the pressure to 'replicate' and to allow increasingly more assets to be considered 'real' is a genuine challenge to our Islamic banks, especially to the members of the *shari'ah* committee. Rather than always limiting views to the legal/ fiqh dimension, Islamic banks and Islamic banking regulatory authorities particularly, must adopt an approach that promotes and upholds Islamic banks as having an economic and social role in society as a whole, and not merely in narrowly defined shareholder interests.

While IBF has been acknowledged in various studies to have been safer and more stable during the 2008 financial crisis, it is too early to celebrate. Islamic banks have been involved in various activities that seem to be features of financialization, but in a very cautious way. That is the best way to proceed. In tandem, studies need to be conducted to determine the degree to which Islamic banks and Islamic finance have both contributed to raising inequalities. Or have they contributed to reducing it, or at least slowing down its pace? It is also very important to conduct social impact studies of IB in various communities. Issues of basic needs as well as general well-being of society cannot be left to the government or the voluntary sector. IBs must play their role in providing for society, not just for those with money. However, we need to change the present trend and direction of development. The CESF discourse allows us the opportunity to do so. Hence, it is important to critically evaluate modern economics and finance and to be able to integrate Islamic values and ethics to develop a new paradigm of socio-economic development

5. Genuine Islamization of Knowledge: The Role of CESF

Islamic scholars would agree if we said that the *shari'ah* is a complete code of guidance for human beings. In the case of economics, banking and finance, we are talking about a social science that tries to understand, analyse and describe human interaction and choices

made in areas of allocation of resources, distribution, exchange and finance (among others). Though the category of finance involves the creation of financial instruments, it should not only be limited to this. Hence, what we need is not only ‘instrument development and legal guidance’, but guidance that also covers ethical choices and choosing ‘better’ alternatives.

This realization has to be incorporated into the Islamic economics and finance education curriculum, so that these values are inculcated and reflected in the academic research of future graduates who are a product of such an education system. It should also be institutionalised in our current Islamic financial system. The CESF discourse that is now gaining prominence in global circles is a discourse that calls for a fundamental change in the way economic and financial decision-making is done. The entire philosophy and approach to decision-making adopts a radically different path.

a. Genuine Integration of Knowledge: Islamization and Relevantization Applied to Economics and Finance

The Integration of Knowledge agenda consists of two components. On the one hand, we have modern knowledge and disciplines that are a product of the western civilization and experience. On the other hand we have our Islamic turath or legacy/heritage. Both these components need to be critically evaluated and then consciously ‘integrated’ using a methodology that is able to handle them both. The critical evaluation of modern disciplines undergoes ‘dewesternization’ followed by ‘infusion’ of Islamic elements; the critical evaluation of our legacy/heritage requires ‘filtration’ of time-space concerns, as well as cultural elements, and also making the heritage ‘relevant’ to our current environment. The goal is to develop contemporary bodies of scientific knowledge or disciplines that represent both our revelation and universe as twin epistemological sources of knowledge.

In discussing methodology of integration, we have to develop this as well since the current bodies of knowledge we have are not able to represent the genuine integration needed. On the one hand, modern knowledge and disciplines are a product of mere reason and observation; on the other hand, our heritage/legacy is overly ‘text’ oriented. In addition, when discussing social sciences, the use of empirical methods in our heritage, while acknowledged, is quite lacking. More often than not, when we talk of the methodology that needs to be adopted, the discipline of *uṣūl al-fiqh* (understood as more legal reasoning) is referred to. This must be distinguished from *uṣūl al-iqtisād*, the latter including a much broader area of the foundations and methodology of Islamic economics. The latter will also be open to including the CESF discourse into its methodological approach.

Rather than only being limited to the legal dimension of the heritage and its methodology, *uṣūl al-iqtisād* would be based on the Islamic worldview and would benefit from inputs covering *uṣūl al-‘ilm* (sources or foundations of knowledge), *fiqh* and *uṣūl al-fiqh*, *uṣūl al-dīn*, history, analytical techniques as well as empirical techniques that would enable holistic decisions to be made; decisions that will enable the ‘more preferred choices to prevail, and decisions that will take into consideration a wider end-result that represents public interest and civilizational goals of Islam and its *shari’ah*.⁵

Hence the knowledge of the heritage required to develop contemporary Islamic economics banking and finance must be more than just the narrowly ‘mis-defined’ *shari’ah* (legal) sciences. One of the greatest maladies to befall Muslims is this *corruption* of original, rich meanings of terms and concepts in the Islamic worldview to narrow meanings.⁶ As far as modern economics and banking/ finance education are concerned, meaningful Integration/ islamization cannot occur without some level of critical understanding of the functioning of the modern economy, its system and constituent elements.

The use of the word ‘critical’ indicates that the modern system has to be evaluated. This involves understanding where it is coming from and also the ability to evaluate it *from an Islamic framework or perspective*. Knowledge in this category would include areas such as economic history (both of thought and practice), statistics (including today’s econometrics), theory (both macroeconomics and microeconomics) and economic sociology (which may include other social sciences). One must also be prepared to include elements of sociology, logic, psychology and philosophy in their connection to economics⁷.

In the context of developing Islamic economics, it would be necessary for us to ‘master’ these areas of knowledge by understanding their origin, development and current state, but always with reference to the Islamic perspective. In terms of economics, banking and finance, this would mean understanding contemporary advances in these areas *critically*. The author disagrees with the proposition that a blanket rejection of modern knowledge is required. The teachings of the Qur’an, as well as the example of the Prophet (pbuh) and of Muslim civilization deny such blanket rejection.

Meaningful and genuine Islamization implies that the Islamic economist or the Islamizer of contemporary economics, banking and finance must know what is acceptable, what needs

5 On the discussion of *usul al-iqtisad* see Haneef and Furqani (2007).

6 For detail arguments on the ‘loss of adab’ and the corruption of knowledge theses, see the works of Professor Syed Muhammad Naquib Al-Attas, especially his *Prolegomena to the Metaphysics of Islam* (1995), International Institute of Islamic Thought and Civilization (ISTAC), Kuala Lumpur.

7 See Joseph Schumpeter (1994), *History of Economic Analysis*, Routledge, London.

modification (what is to be done and how to do it), what is to be rejected (what and why) and how to be able to relate these to contemporary realities as well. On the other hand, the Islamizer must also have some understanding of the Islamic heritage and how to relevantise it. This is certainly a tall order and one that does not seem possible if we continue to move in the present way contemporary Islamic banking products are being developed. While bankers are not necessarily familiar with the rich Islamic heritage, the *sharī'ah* (Islamic law) scholars are not necessarily familiar with the running of the economics and finance sectors and the macro-impact of the latter on the former.

If people are questioning present day products, it is not necessarily only for their legal validity but also for their economic, social and ethical implications. The CESF discourse provides this more holistic approach and paradigm to develop IF. However, make no mistake, the CESF discourse also needs to be critically evaluated.

6. The Circular Economy and Social Finance Discourse: Opportunity for A New Decision Making Model

6.1. Circular Economy

A circular economy is an alternative to a traditional linear economy (make, use, dispose) in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life⁸. It is **a manifestation of economic models that highlight business opportunities where cycles, rather than linear processes, dominate. It is restorative and regenerative by design and aims to keep products, components, and materials at their highest utility and value at all times.**⁹ The World Economic Forum provides the following definition

“A circular economy is an industrial system that is restorative or regenerative by intention and design. It replaces the end-of-life concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse and return to the biosphere, and aims for the elimination of waste through the superior design of materials, products, systems, and business models.”¹⁰

The circular economy is presented as a system of resources utilization based on 3 Rs where reduction, reuse and recycling of elements prevails: minimize production to a bare minimum, and when it is necessary to use the product, go for the reuse of the elements that

8 <http://www.wrap.org.uk/about-us/about/wrap-and-circular-economy>

9 <https://sustainabilityguide.eu/sustainability/circular-economy/>

10 <https://youmatter.world/en/definition/definitions-circular-economy-meaning-definition-benefits-barriers/>

cannot return to the environment. That is, the circular economy promotes the use of as many biodegradable materials as possible in the manufacture of products -biological nutrients- so they can get back to nature without causing environmental damage at the end of their useful life. When it is not possible to use eco-friendly materials instead of technical nutrients such as electronics, hardware, and batteries, the aim is to facilitate a simple uncoupling to give them a new life by reintroducing them into the production cycle and compose a new piece. When this is not possible, they will be recycled in a respectful way into the environment.¹¹ One immediate comment on the 3Rs of the circular economy could be the need for 4Rs where the first R is 'refuse' (rather than reduce), in other words a rejection of consumerism.

Unlike other economic models where the economic aspect prevails over the social or environmental, a circular economy is a substantial improvement common to both businesses and consumers. Companies that have implemented this system are proving that reusing resources is much more cost effective than creating them from scratch. As a result, production prices are reduced, so that the sale price is also lowered, thereby benefiting the consumer, not only economically, but also in social and environmental aspects. While there is still a debate concerning the sustainability of CE, Sillanpaa and Ncibi (2019) have argued that it is attainable if the right models are used and subsequent policies implemented by all stakeholders at the local, national and global level.

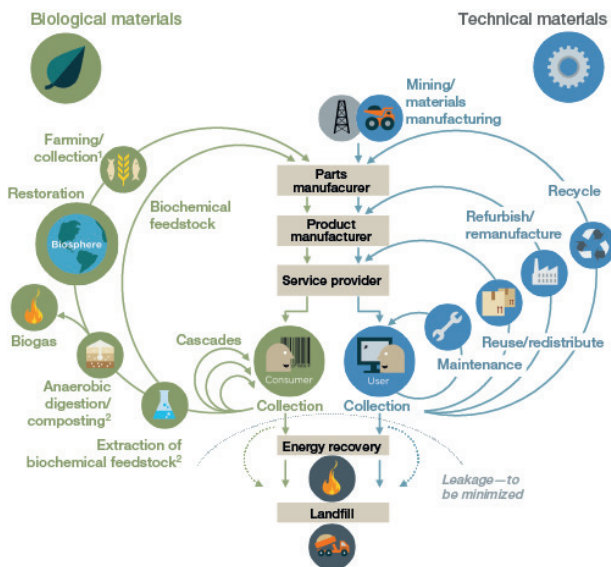


Figure 1. The circular economy in a diagram¹²

11 <https://www.activesustainability.com/sustainable-development/what-is-circular-economy/>

12 <http://reports.weforum.org/toward-the-circular-economy-accelerating-the-scale-up-across-global-supply-chains/from-linear-to-circular-accelerating-a-proven-concept/>

More research into the circular economy and how Islam views it is required. It is still a relatively new area of research among Islamic economists.¹³ However, what is clear is that the circular economy discourse asks that economic decision making must go beyond the limited goal of individual gains/interest. Concern for society and nature will have to be incorporated. The issue of sustainability that has gained prominence in the last 5 years or so due to the UNs Sustainable Development Goals agenda is central in Islamic economics since the nature of Allah as Rabb (lord) means that not only is He the Creator and Provider, but He is the Sustainer as well. ‘Concern for others’ is also very central in the concept of social economics and social finance literature which has been around for a few decades now but has not really captured the attention of many Islamic economists and almost none from among scholars of Islamic banking and finance. However, this has changed in the last five years or so.

6.2. Social Finance

What is social finance? In the finance paradigm, social finance is seen as ‘investment decisions that not only give a financial return, but also have positive social and/or environmental impact’¹⁴. Hence social finance still makes a financial return (could be less than return under pure business criteria), but also does greater good to others in the process. It can include schemes and programmes that make economic resources (including funds/financing) available to those segments of society who otherwise may not have access to these resources. It could also involve a social/environmental goal that requires funding due to lack of public funds per se. It seeks to balance between material profits and social good. This is where social finance can serve the circular economy paradigm. It works by taking the individual, society and the environment into account when making decisions. Put in another way, it requires a ‘multi-objective profit function’ that also incorporates ‘interdependent utility functions’. Pioneer Islamic economists in the 1970s put this idea forward but this seems to have faded away from the discourse.

In recent years, there has been interest in talking about Islamic social finance (ISF). While welcome, the effort has been limited to discussing zakat, waqf and Islamic microfinance. While these three institutions are important areas of ISF, it is still a very narrow approach to the social finance discourse mentioned above. It is very important that

13 Yuossef Aboul-Naja had a brief mention of this in Islamic Finance News, September 2015 titled ‘Circular Economy and Islamic Finance: An Ijarah Way forward. However, more academic writings and research have been made in the last 5 years, culminating in a dedicated Conference held at the Hamad bin Khalifa University in February 2020.

14 The four broad areas covered under this include socially responsible investing/finance, environment finance, development finance (including microfinance) and impact investing. See Tim Rourke, *From ESG to SRI*, Knowledge Leadership, CIBC Mellon a Canadian Company that specializes in social finance.

ISF discourse be widened to include all areas of finance - including Islamic banking - since what is crucial is to see a new model of decision-making develop. Hence, ISF should also argue for all banking, capital markets (for example sukuk), as well as all other investment funds to have a 'social impact'. Hence, we firmly place the value of thinking of others and of the environment into the centre of all our decision making. The circular economy paradigm is an ideal project to combine with social finance discourse since the central idea is about a new decision-making model.

Many may not be aware, but this is not new to Islamic economics. In the late 1970s and early 1980s, pioneers of Islamic economics asked this question: 'Is the goal of the firm only to maximize its financial profit'? While the answer was a firm 'no' (no pun intended), the details of how you would do this and show this theoretically, did not get sufficient attention. Faced with the available calculus tools of analysis used in standard economics, it was counter-argued that we should continue to use the 'maximization' hypothesis but change the function/goal that was to be maximised. This argument may have been a good 'solution' to the debate, but unfortunately, not enough theoretical work followed to build on these ideas. Hence, the standard maximization rule was 'purified' without detailing out the components that had to be included in the profit/objective function and the constraints or limitations that represented Islamic considerations.

With less interest in 'theoretical' model building, the matter was generally left to rest. As time went on, the standard view was that Islamic economics utilised a modified maximization rule. Unfortunately, these 'modified' elements were not put in place and gradually in most discussions, including those of Islamic banking and finance, they were forgotten. In the world of Islamic banking, the maximization rule was taken as 'given', namely, the goal of the Islamic bank is to maximise profit or to maximise shareholder income/wealth. This was to be done following shari'ah (read as fiqh or law) requirements. It is always re-iterated by proponents of current IBF industry that IBs are 'tijari' entities and not welfare organizations. Without the capital of the shareholders, there would be no business, hence we should be fair to the shareholders.

While this was the discourse 30 years ago, things have changed drastically. From CSR discussions in the later part of the 1990s this question of the 'role of corporate entities,' and especially banks, has come under scrutiny. With the advent of social business discussions, and more recently the circular economy discourse, the idea of greedy, self-interested maximisers has come under scrutiny again.

7. CESF Discourse and a New Model of Decision-Making

As mentioned above, when we talk of Islamic social finance, interestingly enough, one does not see the discussion of social finance as given in the west. Rather than discussing modifications to the business sector (as found in the conventional discourse of social finance) as well as the potential to bring the ‘theory of the firm’ back in focus, in Islamic discourse circles, to some extent, discourse seems to have been rather limited to our three institutions that ‘represent Islamic social finance’: zakat, waqf and microfinance/micro investment.¹⁵ Hence, financing was made available to society as a whole and not just to the already well-to-do. In addition to these three institutions separately, some works have even tried to combine zakat and waqf with Islamic microfinance in order to be able to serve the ummah even better. However, the division of the Islamic economy into the tijari sector (private), siyasi sector (public) and ijtimai sector (social/voluntary) has led to less discussion about the hybrid model as in the west. As mentioned earlier, until very recently, many ‘Islamic bank experts’ still insisted that the role of IBF was to maximize returns for their shareholders. It is as if the three sectors cannot be integrated. If we widen the discussion of Islamic social finance to include ‘overall decision-making’ of all forms (banks included), we then have a new model of the firm.

The 3Ps (people, planet and profits) model is what the circular economy paradigm brings to Islamic economics and finance. Stemming from the Islamic worldview and Islamic economic philosophy discussions about the nature of resources, the nature and role of man as ‘abd and khalifah, together with the ethical principles that this brings in economics and finance, plus the call for socio-economic justice and equity, naturally makes the circular economy and social finance discourse relevant. Khan (2019) is one of the few scholars who have tried to merge and integrate circular economy and social finance by positing a ‘venture waqf’ model that tries to move away from a ‘waste oriented linear model to a zero-waste circular model’; where the compassionate nature of waqf institutions temper the business and profit motive to produce ‘responsible’ business decisions, hence having a transformative role. Ismail (2019) presents his ‘ecosystematic’ approach that combines innovation and technology to promote a more responsible finance system for human development.

Despite these few recent efforts, one could actually connect finance with economics in a more effective way by looking at the literature written in the last few decades, in particular,

15 As for microfinance, Muhammad Yunus and Grameen Bank did something that many others could not. He managed to develop a system whereby the unbankable poor were the targets of microfinance schemes where group dynamics made collection and repayment an almost 100% success. There have also been criticisms, but as a whole, breaking the existing paradigm of ‘collateral’ and credit worthiness has been achieved.

if one was to search for references on interdependent utility functions. It would be surprising to many Islamic economists that much theoretical work has been written. The idea is very simple: my utility depends not only on my consumption, but also on the consumption of others¹⁶. Drakopoulos (2012) carries out a historical study.

The notion of interdependent preferences has a long history in economic thought. In its general form, it can be found in the works of authors such as Hume, Rae, Genovesi, Smith, Marx, and Mill, among others. In the twentieth century, the idea became more widespread mainly through the works of Veblen and Duesenberry.....However, such preferences were never part of the corpus of orthodox theory. For instance, although Pareto and Marshall were aware of their existence, they did not advocate their incorporation into orthodox economic theory.

Despite this long history of recognition, this powerful idea has not been able to become mainstream. The ideological bases of mainstream neoclassical economics dominated and led to the current ‘individual maximization of satisfaction’ models. Bergstrom (1999) put forward a highly mathematical presentation of ‘benevolent utility functions’ but these alternative theories of decision making of economic agents did not gain traction in conventional economics. However, if the CESF discourse is to re-align Islamic banking/finance to Islamic economics, this interdependent utility function literature needs to be seriously re-visited and developed by economists with analyses made from Islamic perspectives.

There have been some attempts to develop more sophisticated utility models in Islamic economics. For example, Zaman (2005) presented his alternative to consumer behaviour that tried to separate the demand function into two so that the consumption pattern for the poor will be acknowledged clearly. Chowdhury and Tageldin gave their own critique to this article. While one can find some work in this area, the reality of the matter is that these writings are just insufficient and in no comparison to the levels written by alternative economics in the west. Much more attention is needed to attract our young scholars to do research in these areas and to build theoretical models that reflect the Islamic perspectives on individual decision-making. The CESF discourse affords a golden opportunity to revive interest in this.

However, while the CESF nexus provides the necessary intellectual motivation to re-energise the Islamic economics and finance discourse, one must also be critical of the CESF discourse. A thorough evaluation of CE and SF from Islamic perspectives is also needed, just as we would call for the critical evaluation of our turath and modern knowledge in the IoK agenda.

16 <https://www.oxfordreference.com/view/10.1093/oi/authority.20110803100006606>

8. The Way Forward and Conclusion

Besides the overall need to situate IBF within the Islamic economic framework, other positive developments have taken place over the last 10 to 15 years. The CESF discourse allows a re-look at the economic and financial decision-making process of the agent, be it the consumer or producer. The rise of social and community banking has given alternative banking models other than the Anglo-Saxon commercial model. In addition, there must also be emphasis given to non-banking financial institutions such as development financial institutions (DFIs) and other community-based alternatives. One could argue that companies such as Malaysia's e-hailing GRAB transport service and Air BNB's accommodation service are all examples of a democratization of asset ownership that could actually bypass established institutions such as banks.

As far as microfinance is concerned, a new area of Islamic social finance has developed rather extensively over the last 10 years. Zakat and awqaf are also part of this Islamic social finance where commercial interests are balanced with societal interests. However, everyone must be vigilant to not 'over commercialise' the institutions of zakat and waqf. Already there are writings by more commercially minded entities that are calling for a greater role of Islamic banking in zakat and waqf management. Caution needs to be taken so that the noble aims of zakat and awqaf are not corrupted by crass material intentions.

The Islamic economic system is quite unique in that it is a three-sector system: private, public and voluntary or not for profit sectors. Each plays its own complementary role to achieve well-being for all. The private sector, in this case, commercial Islamic banks have to work together with other institutions to achieve the wider goals of society. This can only be effectively done if IB re-aligns with its Islamic economic roots. With some of the developments of the post-2008 crisis, the environment has become more conducive to receiving alternative approaches to develop contemporary IB. The circular economy paradigm also allows us to seriously question the narrow approach taken in developing IBF of the last 40 years. Alternative banks, non-banking alternatives, as well as more holistic solutions that call for structural reforms, including those in distribution and redistribution, are now being discussed even in mainstream conferences.

Islamic economics and finance should take the opportunity to participate in this movement for reform. After all, the Islamic concepts of *tajdid*, *islah* and *ijtihad* are all central to achieving the well-being of the ummah. Islamic economics, banking and finance must genuinely solve problems of the ummah and not just provide legally compliant instruments

that do not necessarily establish justice and wellbeing for all, and something that is central to the objectives of the *shari'ah*. In addition, just providing longer repayment periods to allow people to afford an already overpriced house, does not genuinely solve the problem of the need for provision of the basic human right of shelter, which is a crucial goal of the objectives of the *shari'ah*. Solutions must be sought in a framework where finance is unified with economics and the socio-economic goals of society. Islamic banks and banking authorities must take the lead.

There is an oft-repeated saying in the Malay language, which happens to be one of my favourites- '*Kalau sesat, balik ke pangkal jalan*' (if you are lost, return to the beginning of the journey). In Islamic banking, there is much soul-searching required, and the way forward is to re-visit its Islamic economic foundations. Perhaps the current discourse on circular economy and social finance will provide the incentive and impetus to re-connect IB to its roots. It is the responsibility of all to assist in bringing Islamic banking and finance home.

References

- Al-Attas, S. M. N. (1995). *Prolegomena to the Metaphysics of Islam*. International Institute of Islamic Thought and Civilization [ISTAC], Kuala Lumpur.
- Amin, R. (2018). *The Malaysian Islamic Banking Sector Viewed Through Systems Theory* (Doctoral Dissertation). Retrieved from <http://studentrepo.iium.edu.my/handle/123456789/3599>
- Asutay, M. (2012). Conceptualising and locating the social failure of Islamic finance: Aspirations of Islamic moral economy vs the realities of Islamic finance. *Asian and African Area Studies*, 11(2), 93–113.
- Bergstrom, T. C. (1999). Systems of benevolent utility functions. *Journal of Public Economic Theory*, 1(1), 71–100.
- Drakopoulos, S. (2012). The history of attitudes towards interdependent preferences. *Journal of the History of Economic Thought*, 34(4), 541–557. <http://dx.doi.org/10.1017/S105383721200051X>
- Faruqi, I. R. (1982). *Islamization of Knowledge: Problem, Principles and the Workplan*. International Institute of Islamic Thought, Herndon.
- Haneef, M. A., & Furqani, H. (2007). Usul Al-Iqtisad: The Missing Dimensions in Contemporary Islamic Economics and Finance. *Readings in Islamic Economics and Finance* (pp. 1-16), Sintok: UUM Publications
- Haneef, M. A. (2009). Islamic banking and finance in the 21st century- selected issues in human capital development. *Islam and Civilizational Renewal*, 1(2).
- Haneef, M. A. (2009). *A critical survey of Islamization of knowledge* (2nd ed.). Kuala Lumpur, International Islamic University Press.
- Haniffa, R., & Hudaib, M. (2007). Exploring the ethical identity of Islamic banks via communication in annual reports. *Journal of Business Ethics*, 76(1), 97–116.
- Hassan, A., & Syafri Harahap, S. (2010). Exploring corporate social responsibility disclosure: the case of Islamic banks. *International Journal of Islamic and Middle Eastern Finance and Management*, 3(3), 203–227.
- Hassan, M. K., & Aliyu, S. (2018). A contemporary survey of Islamic banking literature. *Journal of Financial Stability*, 34, 12–43.

- Islamic Financial Services Board. (2019). *Islamic Financial Services Industry Stability Report*. Kuala Lumpur: Author.
- Ismail, A. G. (2019) Innovation, Islamic Finance and Economic Development. *IESTC Working Paper Series, Working Paper No. 16*. Bangi: Organization of Islamic Economic Studies and Thoughts
- Khan, T. (2019). Venture Waqf and the Circular Economy. *ISRA International Journal of Islamic Finance, 11(2)*. *Malaysia Islamic Finance Education Report (2016)*. International Council of Islamic Finance Educators (ICIFE), Kuala Lumpur, Malaysia.
- Mirakhor, A. (2010). Whither Islamic finance? Risk sharing in an age of crises. *MPRA Paper 56341*, University Library of Munich, Germany.
- Sardar, Z. (1986). *Islamic Futures*. Mansell Publishing, London.
- Siddiqi, M.N. (2007). 'Shari'ah, Economics and the Progress of Islamic Finance: The Role of Shari'ah Experts'. *IJUM Journal of Economics and Management*, Vol. 15 No. 1.
- Sillanpaa, M., & Chaker N. (2019). Circular economy and sustainable development, *The Circular Economy: Case Studies About the Transition from the Linear Economy*. Academic Press, pp. 281–311.
- Standard and Poor (2020), Islamic Finance Outlook 2020.
- Thomson, Frances and Sahil Dutta (2015). *A Primer on Financialization*. Transnational Institute, Amsterdam.
- World Economic Forum (2014). *Towards a Circular Economy*, Geneva.
- Zaman, A. (2005). Towards a New Paradigm for Economics. *Journal of King AbdulAziz University: Islamic Economics, 18(2)*, 49–59.

CHAPTER 8

PERCEPTION AND IMPLEMENTATION OF SUSTAINABILITY IN ISLAMIC FIRMS: A SURVEY ON INSTITUTIONAL CUSTOMERS OF ISLAMIC BANKS IN TURKEY

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Abstract

The negative externalities of the capitalist paradigm and irresponsible financial system have boosted the demand for integrating sustainability into the economic system as a key component and led to the development of new financial products and structures to achieve sustainable development goals. This global trend, in fact, facilitates a convergence towards the Islamic principles in economics and finance. Islamic economics, in essence, ensures such a production and distribution mechanism that the sources are not exhausted at the cost of other regions and future generations. The crucial question is, however, whether those firms that are supposed to comply with the principles of Islamic economics have really understood and adopted the concept of sustainability. Since the majority of customers of Islamic banks consist of such firms, we in this study attempt to reveal the current perception and implementation of sustainability from the perspective of institutional customers of Islamic banks in Turkey. Our findings show that while the basic goals set forward by sustainability, such as social equity, just income distribution, good governance, and preserving the resources and environment are conceptually embedded in Islamic finance, the institutional customers of Participation Banks cannot sufficiently integrate these principles into their business processes. In addition, firms' approaches and practices toward the sustainability differ depending on their ownership structure, operational quality, and number of employees. Those firms whose ownership and operations are more international and have a number of employees greater than 50 comply with sustainability considerably more than others.

Keywords: Islamic finance, Islamic banking, Islamic firms, sustainability, sustainable development goals

1. Introduction

The idea that firms should operate in a manner that provides a dignified living to people and contributes to the ability to meet the needs of next generations has become widespread, especially in last two decades. Termed as the ‘stakeholder approach,’ this understanding has contributed to pave the way to the notion of ‘sustainability,’ which calls for taking measures to solve fundamental problems such as poverty, corruption, unemployment, income inequality, climate change, and the disappearance of animal species. This call is addressed not only to the real sector but to the finance sector that provides funds required to operate real economic activities. As a result of increasing consciousness of sustainability and public pressure, the finance sector has begun to consider the social and environmental concerns more seriously as well. Banks, in addition to reporting their own compliance with sustainability, have also begun reporting the compliance with sustainability of the corporations and industries that they fund.

In this context, Islamic, or so-called ‘Participation’ banks in Turkey, occupy an important position as the very understanding in their foundation necessitates the principles of sustainability.¹ These banks are primarily expected to develop strategies to adopt sustainable development goals and to implement them. In doing so, Participation Banks should adopt a holistic manner that observes the compliance with sustainability not only in their own products and services but also in the operations of their customers that they fund. In other words, the firms that are supposed to comply with the principles of Islamic economics should not be limited to banks. All firms that are known for their observance of Islamic values are expected to actually adopt and practice the concept of sustainability. Since the majority of customers of Islamic banks are expected to consist of such firms, we in this study attempt to reveal the current perception and implementation of sustainability from the perspective of institutional customers of Islamic banks in Turkey. So far, there is no an empirical study investigating the compliance of participation banks’ institutional customers with sustainability.

The aim of this paper is basically to reveal the approaches and practices of institutional customers of participation banks in Turkey with regard to sustainability and develop suggestions that would help them comply with sustainability that also coincides with the very principles necessitated by their foundations. The research questions of this paper can be expressed as follows:

1 Islamic economics embeds a “circular manner”, contrary to the capitalist economics which is known for its “linear” process that cause the exhaustion of the resources. As well elaborated by Khan (2019), the paradigm of Islamic economics is guided by the motivation of comprehensive human development and its preservation as manifested in the objectives (Maqasid) of Sharia. However, the real world free-market economies are driven by the linear economy paradigm in which the ecological environment is not recognized as a resource.

- What does sustainability mean for corporate customers of participation banks?
- What are the motivations of corporate customers of participation banks towards the implementation of sustainability?
- Which social and environmental management tools do corporate customers of participation banks use in their efforts to achieve sustainability?

2. Previous Studies

There is a quite large literature of empirical research on sustainability since this concept has been studied in multiple disciplines, such as economics, management, and finance.

Yu's study, which involved 58 small and medium-size enterprises (SMEs) in China, showed that although these firms are interested in sustainability, their efforts towards minimizing the negative impacts of their operations on the social and natural environment (Yu, 2007).

Hahn and Scheermesser examined firms' compliance with sustainability over a sample of 195 German firms. Their hierarchical clustering analysis revealed three clusters called "sustainability leaders," "environmentalists," and "traditionalists". The sustainability leaders, the smallest one, is distinguished with their tendency towards integrating social management tools into their operations. The source of their motivation for sustainability is ethical concerns. The prominent characteristic of environmentalists is their emphasis on the use of environmental management tools, such as EMAS, ISO 14000, etc. In general, this cluster consists of big size firms. The traditionalists separate with their limited use of management tools in sustainability. The main source of motivation of these firms towards sustainability is rather public relations and reputation concerns (Hahn and Scheermesser, 2006).

In 2009, William and Schaefer made in-sept interviews with top managers of SMEs that operate in East Britain and are well-known for their compatibility to the environment. Their research concluded that managers of environment-compatible firms have holistic views on climate change and environmental issues and the basic motivation behind the activities of their firms for the sake of the environment arises from the personal value judgements and beliefs of the managers (William and Schaefer, 2013).

One of the prominent studies in Turkey with regard to this matter is the report prepared by Borsa Istanbul (BIST -Istanbul Stock Exchange), The Association of Sustainable Development, and Price Waterhouse together in 2011. The research was based on a survey of 215 firms traded in BIST. Most firms declared that sustainability is related to their business manner and investments for the sake of sustainability has a positive impact on their financial

performances. However, only 62% stated that they had a strategy on the matter of sustainability. The findings showed that the first three factors that led the firms towards sustainability considerations were reputation, regulation, and competition while public pressure was among those at the bottom of the list (IMKB, 2011).

Another important study in Turkey is the one made involving over 350 SMEs by Tuna. The findings showed that 97.1% of the firms stated that sustainability was related to their business manner. Similar to the findings of research referred above, the degree of the firms' compatibility to sustainability was found to be extremely low. The first three factors that led the firms towards sustainability considerations were reputation, cost decrease, financing opportunities and incentives (Tuna, 2014).

The literature on the perception and practice of sustainability in Islamic finance is rather new and showing a developing process. Some prominent papers such as Dusuki (2008), Nor and Asutay (2011), and Agriyanto (2015) focus on the stakeholders of Islamic banks and indicate how to integrate the sustainability of society.

In 2009, Dinar Standard and Dar Al-Istithmar prepared a detailed study on the perception and practices of social responsibility of Islamic finance institutions (IFIs). 13 questions were derived from the standard number 7 of AAOIFI, titled "the announcement and practice of corporate social responsibility of IFIs," and were asked to 29 IFIs. The results showed that more than 76% of the IFIs indicated an ownership policy in customer satisfaction, employee satisfaction, and charities while only 52% of them announced the ownership of proactive policies to minimize environmental impact.

According to other several empirical studies done in Malaysia and Bahrain, the vast majority of Islamic banks do not have a sufficient operation of corporate social responsibility and preservation of the environment although these banks have an awareness of these issues (Nor and Hashim, 2014; Adnan, 2015; Aribi and Arun 2015; Wan Jusoh and Ibrahim, 2017).

Khan recently addressed the circular nature of Islamic economics in theory, then explores the flaws of the current practice of Islamic finance in this regard, and finally proposes a comprehensive set of paradigmatic and regulatory reforms to enhance the actual effectiveness of Islamic finance in achieving the ideals of SDGs at large (Khan, 2019).

Several recent papers analyzed Islamic banks in Turkey within the general concept of sustainability and provided comparisons with conventional banks. Most of them show that conventional banks have better environmental and sustainability points than participation banks (Şendurur & Temelli, 2018).

3. The Methodology

The research population consists of the institutional customers of the Participation (Islamic) Banks in Turkey. We picked such firms located in Istanbul through the convenience sampling method. Because Istanbul is considered as the most important hub of the country both in terms of domestic and international economic activities (Bilim, Sanayi ve Teknoloji Bakanlığı, 2013), the sampling universe is limited to firms located in Istanbul.

Minimum sample size for such a population is calculated as 384 at a confidence level of 95%, according to Yazıcıoğlu and Erdoğan (2004). While the initial number of firms that successfully responded to our questionnaire is 437, we excluded 37 firms due to their outlier characteristics. Under the circumstances, our sample size of 400 is reasonably above the minimum level. We used the face-to-face survey method. The respondents consisted of the top managers who were responsible for their firm's strategies and policies.

The questions and scales used in the survey are derived from Tuna (2014), Hahn and Scheermesser (2006), Yu (2007), and IMKB (2011). There are four scales considered: 'The Meaning Attributable to Sustainability,' 'The Motivations for Sustainability Practices,' 'Use of Environmental Management Tools,' and 'Use of Social Management Tools.' Ten questions were derived from the principles of the Global Reporting Initiative (GRI). Five-point Likert Scale was used with appropriate wordings for each of the four scales.

The Bartlett's Test of Sphericity (BTS) and Kaiser-Mayer-Olkin Tests (KMO) were used to determine the factorability of the scales. Since the null hypothesis of BTS that requires the correlation matrix to be an identity matrix (Bartlett, 1950) is rejected here and the KMO values are found higher than 0.5 (Hair, 2009), the explanatory factor analysis was employed.

The scale that indicates the incentives for sustainability practices originally consisted of 14 statements. As a result of the factor analysis, 2 statements (question 10 and 11) were excluded from this scale. The factor analysis has also caused the exclusion of one statement (question 6) from the social management tools scale. Based on the remaining questions, the Cronbach's Alpha coefficients were calculated. All Cronbach α coefficients were found between 0.8 and 1 for each scale. Since the minimum level of acceptable internal consistency is 0.7, the scales used in the research were highly reliable.

Since the Kolmogorov-Smirnov test of normality revealed that the continuous variables did not comply with normal distribution, non-parametric tests were used. The Spearman correlation analysis was used to measure the covariation of the variables; Mann Whitney U test was used for two-group comparisons and Kruskal Wallis test for higher number of

groups. When a statistically significant difference was found in the latter type group comparison, the Bonferroni adjusted Mann Whitney U test was applied to find the source of the difference. The criterion of statistical significancy was considered $p < 5\%$.

4. Empirical Findings

4.1. Descriptive Statistics

Out of the 400 firms, local firms constituted 67% of the sample, while those firms with local-foreign partnership were 11.5% and firms with full foreign ownership 21.5%. 76.5% operated for more than 10 years, and 48.7% had 250 or more employees. As for the sectoral distribution of the sample, the trade sector (total of retail and wholesale) was 31%, industry 14.7%, construction 12%, and transportation and storage 11.3% (Table 1).

CATHEGORY	FREQUENCY	PERCENTAGE
Ownership structure		
Local	268	67.0
Local – foreign partnership	46	11.5
Full foreign	86	21.5
Sector		
Retail and wholesale trade	124	31.0
Industry	59	14.7
Construction	48	12.0
Transport and storage	45	11.3
Accommodation and catering	21	5.3
Finance and insurance	15	3.8
Scientific and technical services	15	3.8
Education	13	3.3
Information and communication	12	3.0
Real estate	8	2.0
Health and social services	8	2.0
Agriculture, forestry and fishing	5	1.3
Administrative services	5	1.3
Public administration and defense	2	0.5
Other	20	5.0
Age (Years)		
1-5	27	6.7
6-10	67	16.8
11-15	97	24.2
16-20	80	20.0
21 and above	129	32.3
Number of employees		
0-9	113	28.3
10-49	92	23.0
50-249	146	36.5
250 and above	49	12.2
Operation sphere		
Domestic	277	69.3
International (import and export)	108	27.0
Multinational (investment in foreign countries)	15	3.7
TOTAL	400	100.0

As for the quality management certificates that the firms hold, the first three consisted of the ISO certificates, as seen on Table 2. 70% of the surveyed firms had at least one quality management certificate.

Table 2. The distribution of the quality management certificates that the firms hold *

Name of the Document	Frequency	Percentage
ISO 9001:2000 / Other QMC	183	47.1
ISO 14001	64	16.5
OHSAS 18001	18	4.6
EMAS	4	1.0
EFQM	7	1.8
SA 8000	4	1.0
The training certificate for working with hazardous materials	21	5.4
ISO 22000 Food Safety	59	15.2
HACCP	4	1.0
ISO/IEC 27001 information security management system	13	3.3
AA1000	5	1.3
Other	7	1.8
TOTAL	389	100.0

**A firm can hold more than one type of certificate*

Table 3. The sectoral distribution of the firms that holds at least one QMC

Sector	Frequency	Percentage
Agriculture, forestry and fishing	4	1.4
Industry	40	14.4
Construction	30	10.8
Retail and wholesale trade	112	40.4
Transport and storage	39	14.0
Accommodation and catering	13	4.7
Information and communication	5	1.8
Finance and insurance	9	3.2
Real estate	8	2.9
Scientific and technical services	5	1.8
Administrative services	2	0.7
Public administration and defense	2	0.7
Education	5	1.8
Health and social services	2	0.7
Other	2	0.7
TOTAL	278	100.0

As can be seen in Table 3, having at least one QMC seemed to be more common in retail, trade, industry, transport, storage, and accommodation and catering sectors compared to others.

Table 4 shows that training services on sustainability was provided by mostly Istanbul Chamber of Commerce (İTO) (60.4%), Small and Medium Enterprises Development Organization of Turkey (KOSGEB) (17.7%), and The Scientific And Technological Research Council Of Turkey (TÜBİTAK) (9.5%).

Table 4. The distribution of institutions that provide the training on sustainability

Institution that provides training	Frequency	Percentage
Istanbul chamber of commerce	184	60.4
Small and medium enterprises development organization of Turkey	54	17.7
The scientific and technological research council of turkey	29	9.5
Consultancy firms	25	8.2
The association of sustainable development	8	2.6
Other	5	1.6
Total*	305	100.0

**The total number of the firm is more than 278 because firms can take training from more than one institution*

66.5% of the sample firms have taken training at least from one institution. As can be seen from Table 5, the sectoral distribution with regard to sustainability training indicates that trade sector had the leading position with the share of 39.9%, transportation and storage came second with 15%, and industry and construction shared the third place with 10.9% and 10.5%, respectively.

Table 5. The sectoral distribution of the firms that had training at least once

Sector	Frequency	Percentage
Agriculture, forestry and fishing	4	1.5
Industry	29	10.9
Construction	28	10.5
Retail and wholesale trade	106	39.9
Transport and storage	40	15.0
Accommodation and catering	8	3.0
Information and communication	7	2.6
Finance and insurance	13	4.9
Real estate	7	2.6
Scientific and technical services	3	1.1
Administrative services	2	0.8
Public administration and defense	2	0.8
Education	5	1.9
Health and social services	5	1.9
Other	7	2.6
Total	266	100.0

Table 6 exhibits the distribution of the departments that implemented the sustainability activities in the sample firms. The top three departments were top management (41.2%), accounting (26.8%), and human resources (13.8%) while 10.2% of the sample firms undertook no activity in terms of sustainability.

Table 6. Distribution of the departments that implement the sustainability activities

Department	Frequency	Percentage
Top management	165	41.2
Accounting	107	26.8
Human resources	55	13.8
Marketing	16	4.0
Production	9	2.2
R&D and technology	7	1.8
No activities for sustainability	41	10.2
TOTAL	400	100.0

4.2. Analyses and Interpretations on the Scales

4.2.1. Explanatory Factor Analysis

Factor analysis involves grouping similar variables into dimensions. This process was used to identify latent variables or constructs. The purpose of factor analysis is to reduce many individual items into a fewer number of dimensions (<https://www.statisticssolutions.com/factor-analysis-2>). In order to implement the factor analysis, several conditions are required to be met. First, the correlation matrix is analyzed through Bartlett Test of Sphericity, of which the null hypothesis assumes that the correlation matrix is an identity matrix. The null hypothesis must be rejected in order to apply the factor analysis Bartlett (1950). Another condition involves the Kaiser-Mayer-Olkin (KMO) test, which provides the information with regard to the sampling adequacy. The indicator of this test takes a value from 1 to 0. The closer to 1, the more adequacy of the sample. A KMO value of less than 0.5 leads to the idea that the data is not appropriate for factor analysis (Hair, 2009).

The Bartlett tests revealed the rejection of the null hypothesis, and KMO values were found higher than 0.8 for all the scales used in this study, as can be seen in Table 7. Therefore, the scales were considered as factorable and the sampling met the adequacy criteria.

Table 7. The KMO values of the scales and results of Bartlett test of sphericity		
The meaning attributable to sustainability		
KMO value		0.833
Bartlett test of sphericity	Chi-square test statistic	882.404
	Degree of freedom	15
	Probability	0.00
The motivations for sustainability practices		
KMO value		0.878
Bartlett test of sphericity	Chi-square test statistic	1472.326
	Degree of freedom	66
	Probability	0.00
Use of environmental management tools		
KMO value		0.866
Bartlett test of sphericity	Chi-square test statistic	1788,902
	Degree of freedom	45
	Probability	0.00
Use of social management tools		
KMO value		0.830
Bartlett test of sphericity	Chi-square test statistic	2375.546
	Degree of freedom	78
	Probability	0.000

The Kaiser-Guttman rule was employed to decide on the number of common factors. Therefore, the number of common factors for each scale happened to be as much as the number of eigenvalues of 1 or greater in the correlation matrix. Through the Varimax method of rotation, those statements/matters affecting more than one factor were excluded from the scales. The factors and factor weights derived from the analysis are exhibited in Table 8.

Table 8. Exploratory factor analysis	
Scales	Factor Weights
The meanings attributable to sustainability	Factor 1
- Sustainability is related to the business manner of our firm	0.726
- Our firm follows the sustainability activities	0.707
- Sustainability has become more important for the main operations of firms	0.689
- Sustainable firms are interested in environmental and social issues in addition to economic activities	0.743
- All firms should be responsible for the society	0.781
- All firms should be responsible for preserving the environment	0.822
Total variance explained	55.65%
The motivations for sustainability practices	Factor 2 Factor 3
- Reputation	0.565 0.502
- Cost savings	0.780
- Low financing cost and incentives	0.790
- Legal regulation	
- Advertisement & PR	0.586 0.620
- Investor Demands	0.738 0.566
- Competition	0.718 0.620
- Ethical Reasons	0.620
- Public Pressure	0.566
- Customer Expectations	0.597 0.620
- Media	0.674 0.566
- NGOs	0.617 0.566
Total variance explained	47.35%
Use of environmental management tools	Factor 4 Factor 5
- EMAS Certificate	0.844
- ISO 14001 Certificate	0.866
- Energy saving endeavors	0.636 0.844
- Minimizing waste and more consideration for recycling	0.749 0.866
- Activities for preserving the natural environment	0.792 0.844
- Endeavors to find environment-friendly suppliers to work with	0.709 0.866
- Operating in accordance with legal regulations.	0.732 0.844
- Considering the environmental impacts in product development process (investing in clean technology).	0.788 0.844
- Providing suppliers, customers and general public with clear and adequate information on the environmental impact of the products and services of the firm.	0.761 0.844
- Adopting the end-of-pipe method (removing already formed contaminants)	0.776 0.844
Total variance explained	62.11%

Use of social management tools	Factor 6	Factor 7	Factor 8
- OHSAS 18001 Certificate			0.883
- SA8000 Certificate			0.953
- AA1000 Certificate			0.901
- Supporting the employees to participate the social activities		0.641	
- Providing regular financial support to social activities and projects (sponsorships)		0.772	
- Improving the workplace conditions to ensure the security and healthcare of the employees.	0.709		
- Supporting the flextime or work-at-home practices for the employees to ensure a fair balance between work and life		0.701	
- Taking measures against all types of discrimination in the recruitment process and thereafter.	0.698		
- Supporting the employees to participate in decision-making process	0.765		
- Holding regular meetings with employees	0.761		
- Providing the local community with education and training opportunities		0.709	
- Having an open dialog with local community in problematic issues between firm and community		0.747	
- Preferring the local suppliers in purchasing policy	0.665		
Total variance explained		63.86%	

Factors are defined as the following: Factor 1: The Meaning Attributable to Sustainability, Factor 2: Management of Stakeholder Perception, Factor 3: Adaptation to Compelling Factors, Factor 4: Environment-friendly Activities, Factor 5: Certificates of Environmental Management System, Factor 6: Considering the Stakeholders in Business Processes, Factor 7: Supporting the Stakeholders, Factor 8: Certificates of Social Management System.

4.2.2. Reliability Analysis

As can be seen in Table 9, the Cronbach's alpha values (α) calculated for each scale range from 0.8 to 1.00. A scale is accepted internally consistent if the α calculated is 0.7 or greater. The internal consistency of all scales used in the study are hereby proven.

Scales	Number of statements	Cronbach's α
The meaning attributable to sustainability	6	0.832
The motivations for sustainability practices	12	0.859
Use of environmental management tools	10	0.852
Use of social management tools	13	0.829

*Analyses are based on remaining statements after the factor analysis.

4.2.3. Test of Normality Based on Factors

Since the findings of Kolmogorov-Smirnov test of normality indicated the rejection of null hypothesis that assumes the normal distribution, the data used in the study was not normally distributed. Therefore, non-parametric tests were employed in the study from this point on.

Factors	Kolmogorov-Smirnov		
	Test statistic value	N	Probability
The meaning attributable to sustainability	0.209	400	0.000
Management of stakeholder perception	0.157	400	0.000
Adaptation to compelling factors	0.165	400	0.000
Environment-friendly activities	0.187	400	0.000
Certificates of environmental management system	0.235	400	0.000
Considering the stakeholders in business processes	0.230	400	0.000
Supporting the stakeholders	0.159	400	0.000
Certificates of social management system	0.268	400	0.000

4.2.4. Correlation Analysis

Table 11 shows the results of Spearman-Correlation analysis for the variables used in the study. The correlation table provides a very useful framework in forming the sets of testable hypotheses for each factor. That is, only those firm characteristics that have significant correlation with the factors are included in hypothesis tests. For instance, because ‘Firm’s Age’ is not significantly correlated with Factor 1, it was excluded from the list of hypotheses tested for Factor 1 whereas it was included in the hypothesis test for Factor 4, due to its significant correlation with that factor.

Table 11. Correlations between the variables

	Ownership structure	Age	Number of employees	Operation sphere	Having training on sustainability	Sector	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
Ownership structure	1.000													
Age	0.095	1.000												
Number of employees	.436**	.367**	1.000											
Operation sphere	.356**	0.043	.160**	1.000										
Having training on sustainability	.364**	.247**	.537**	.112*	1.000									
Sector	-0.059	-0.017	-0.017	-.121*	-0.024	1.000								
Factor 1	.302**	0.067	.375**	.114*	.326**	-0.020	1.000							
Factor 2	.263**	-0.080	.263**	.139**	.256**	.098*	.461**	1.000						
Factor 3	.237**	0.068	.287**	.138**	.258**	0.035	.396**	.470**	1.000					
Factor 4	0.091	.209**	.261**	.117*	.216**	-.104*	.227**	.140**	.181**	1.000				
Factor 5	.185**	0.023	.228**	.173**	.180**	-.110*	.230**	.225**	.224**	.132**	1.000			
Factor 6	-0.041	.133**	0.064	-0.015	0.081	-0.036	0.089	-0.003	0.037	.463**	-.112*	1.000		
Factor 7	.214**	.215**	.351**	0.080	.301**	0.093	.243**	.190**	.169**	.591**	-0.012	.517**	1.000	
Factor 8	.223**	0.010	.154**	.167**	.202**	-0.026	.267**	.232**	.215**	.125*	.646**	-0.056	0.037	1.000

Note 1: ** Correlation significant at 1% level. * Correlation significant at 5% level

Note 2: Factor 1 indicates The Meaning Attributable to Sustainability, Factor 2: Management of Stakeholder Perception, Factor 3: Adaptation to Compelling Factors, Factor 4: Environment-friendly Activities, Factor 5: Certificates of Environmental Management System, Factor 6: Considering the Stakeholders in Business Processes, Factor 7: Supporting the Stakeholders, Factor 8: Certificates of Social Management System

4.2.5. Findings on the Perceptions on Sustainability

Table 12 shows the percentage distribution of the responses to each statement in *The Meaning Attributable to Sustainability* scale. When “Strongly Agreed” and “Agreed” responses are combined for the first three statements, it can be said that 96% of the participants agree that firms should be responsible for preserving the environment, 93.8% saw the sustainability concept related to the business manner, 93.5% thought that firms should be responsible for society. In addition, the total share of strongly agreed and agreed responses for the other statements was also around 90%. Therefore, it is obvious that the firms generally had a positive perception of sustainability.

Table 12. Percentage distribution of the responses to each statements in the meaning attributable to sustainability scale

	Strongly agree	Agree	No idea	Disagree	Strongly disagree
Sustainability is related to the business manner of our firm	25.3%	68.5%	2.3%	3.5%	0.5%
Our firm follows the sustainability activities	16%	76.8%	2.5%	4.3%	0.5%
Sustainability has become more important for the main operations of firms	32.3%	57.5%	7.3%	2%	1%
Sustainable firms are interested in environmental and social issues in addition to economic activities	16.3%	73.3%	5.3%	5%	0.3%
All firms should be responsible for the society	16%	77.5%	2.5%	4%	0%
All firms should be responsible for preserving the environment	16.5%	79.5%	2.3%	1.5%	0.3%

In order to find out whether the perception of the participants on sustainability differed with respect to their characteristics, the following research hypotheses were tested:

- H₁-1: The meaning attributable to sustainability significantly differs with respect to ownership structure of the firms.
- H₁-2: The meaning attributable to sustainability significantly differs with respect to number of employees in the firms.
- H₁-3: The meaning attributable to sustainability significantly differs with respect to operational sphere of the firms.
- H₁-4: The meaning attributable to sustainability significantly differs with respect to whether the firm had any training from at least one institution.

The Kruskal Wallis Chi-Square and Mann Whitney U Tests were used to test the above hypotheses. Table 13 reveals the results.

Table 13. Result of the Kruskal Wallis Chi-Square and Mann Whitney U tests for the meaning attributable to sustainability scale						
	N	Avg. Rank	Chi-Sq	DF	P (K-W)	Diff.
Ownership structure			38.167	2	0.000*	
Local	268	176.07				
Local – foreign partnership	46	251.88				2 > 1
Full Foreign	86	249.15				3 > 1
Number of employees			67.644	3	0.000*	
0-9	113	146.28				1 < 3
10-49	92	142.35				2 < 4
50-249	146	220.21				3 > 2
250 and more	49	256.74				4 > 1
Operational sphere			5.157	2	0.076	
National	277	192.06				
International	108	218.29				
Multinational	15	228.30				
	N	Avg. Rank	Mann Whitney	Z	P (M-W)	Diff.
Had any training?			10898.500	-6.507	0.000*	
Yes	266	226.53				1 > 2
None	134	148.83				

According to the results, the null hypotheses of H_0-1 , H_0-2 and H_0-4 were rejected, meaning that the alternative hypotheses was accepted. Namely, the groups differed significantly in terms of the ownership structure, number of employees, and training experience from at least one institution. The operational sphere was not a discriminating factor in this matter ($p=0.076$). The directions of the differentiation are elaborated as follows:

- Firms with local-foreign co-ownership or sole foreign ownership had a more positive approach to sustainability than those firms with local ownership ($p<0.05$).
- Firms with a number of employees of 50 or more had a more positive approach to sustainability than those firms with a number of employees 49 and less ($p<0.05$).
- Firms that had training on sustainability at least once had a more positive approach to sustainability than those firms that had not taken any training ($p<0.01$).

4.2.6. Findings on the Motivations for Sustainability Practices

The percentage distribution of the responses given to the questions exploring the motivations behind the sustainability practices is exhibited in Table 14. When the responses of “definitely effective” and “effective” are combined, it can be said that the most powerful five motivations were “reputation (96.6%),” “cost reduction (91.1%),” “customer expectations (90.6%),” “competition (89.8%),” and “legal regulation (89.3%),” respectively. Public pressure appeared at the bottom of the list with 71.8%.

Table 14. Motivations for sustainability practices

How effective are the following factors in motivating your firms towards sustainability practice?	Definitely effective	Effective	Partially effective	Not effective	Definitely ineffective
Reputation	22.8	73.8	2.3	1.3	0
Cost reduction	18.3	72.8	4.5	4.5	0
Customer expectations	21.3	69.3	5	4	0.5
Competition	19.5	70.3	6.3	3.5	0.5
Legal regulation	25.3	64	8.8	2	0
Advertisement & PR	19.8	66.8	8	4.5	1
Ethical reasons	20.5	65.8	8.5	5	0.3
Financial incentives/low-cost financing	25.3	59	12.5	3.3	0
NGOs	12.3	68.3	8.3	11	0.3
Media	16.5	64	8.3	10	1.3
Investor expectations	21	59	12.8	7	0.3
Public pressure	17.3	54.5	14.8	13	0.5

In exploring whether these motivations significantly differed among the firms with respect to their characteristics, the related scale was split into two factors called ‘*managing the perceptions of stakeholders*’ and ‘*adaptation to compelling factors*.’ Then certain hypotheses were developed for each of the two sub-factors and tested. The results are shown in Table 15 and 16, respectively.

- **List of hypotheses tested to explore how managing the perception of stakeholders differs with respect to the firm characteristics**
 - H₁-5: Managing the perception of stakeholders significantly differs with respect to ownership structure of the firms.
 - H₁-6: Managing the perception of stakeholders significantly differs with respect to the sector in which the firms operate.
 - H₁-7: Managing the perception of stakeholders significantly differs with respect to the number of employees working in the firms.
 - H₁-8: Managing the perception of stakeholders significantly differs with respect to operational sphere of the firms.
 - H₁-9: Managing the perception of stakeholders significantly differs with respect to whether the firm has had any training from at least one institution.
- **List of hypotheses tested to explore how adaptation to compelling factors differs with respect to the firm characteristics**
 - H₁-10: Adaptation to compelling factors significantly differs with respect to ownership structure of the firms.

- H₁-11: Adaptation to compelling factors significantly differs with respect to the sector in which the firms operate.
- H₁-12: Adaptation to compelling factors significantly differs with respect to number of employees working in the firms.
- H₁-13: Adaptation to compelling factors significantly differs with respect to operational sphere of the firms
- H₁-14: Adaptation to compelling factors significantly differs with respect to whether the firm had any training from at least one institution.

Table 15. Kruskal Wallis and Mann Whitney U test results for how managing the perception of stakeholders differ with respect to the firm characteristics

	N	Avg. Rank	Chi-Sq	DF	P (K-W)	Diff.
Ownership structure			28.070	2	0.000	
Local	268	179.35				
Local – foreign partnership	46	239.97				2 > 1
Full foreign	86	245.31				3 > 1
Number of employees			45.606	3	0.000	
0-9	113	170.68				
10-49	92	156.05				2 < 3
50-249	146	245.23				3 > 1
250 and more	49	219.44				4 > 2
Operational sphere			7.704	2	0.021	
National	277	190.18				
International	108	221.64				2 > 1
Multinational	15	238.97				
Sector			10.505	5	0.062	
Industry	59	169.89				
Construction	48	187.03				
Trade	124	203.77				
Transportation and storage	45	240.06				
Accommodation and catering	21	203.79				
Other	103	202.43				
	N	Avg. Rank	Mann Whitney	Z	P (M-W)	Diff.
Had any training?			12329.00	-5.108	0.000	
Yes	266	221.15				1 > 2
None	134	159.51				

The results indicated that there was a significant difference between the groups with respect to ownership structure (p<0.01), number of employees (p<0.01), operational sphere (p<0.05), and training experience (p<0.01) while no significant difference was found in terms of sector (p>0.05). Which group was superior to which group in these respects are explained below:

- Firms with local and foreign partnership and firms with sole foreign ownership managed the stakeholder perception better than those firms with local ownership ($p < 0.05$).
- Firms with a number of employees more than 50 managed the stakeholder perception better than firms with those number of employees 49 or less ($p < 0.05$).
- Firms operating in the international sphere managed the stakeholder perception better than those firms operating in the national scale ($p < 0.05$).
- Firms that had had at least one training of sustainability managed the stakeholder perception better than those firms that had had no training of sustainability ($p < 0.01$).

Table 16. Kruskal Wallis And Mann Whitney U test results for adaptation to the compelling factors						
	N	Avg. Rank	Chi-Sq	DF	P (K-W)	Diff.
Ownership structure			22.577	2	0.000	
Local	268	181.75				
Local – foreign partnership	46	230.04				2 > 1
Full foreign	86	243.13				3 > 1
Number of employees			36.185	3	0.000	
0-9	113	160.01				1 < 3
10-49	92	177.30				2 < 4
50-249	146	234.41				3 > 2
250 and more	49	236.41				4 > 1
Operational sphere			10.067	2	0.007	
National	277	190.82				
International	108	215.14				2 > 1
Multinational	15	273.77				
Sector			9.650	5	0.086	
Industry	59	180.71				
Construction	48	214.65				
Trade	124	195.39				
Transportation and storage	45	239.61				
Accommodation and catering	21	170.07				
Other	103	200.51				
	N	Avg. Rank	Mann Whitney	Z	P (M-W)	Diff.
Had any training?			12306.00	-5.150	0.000	
Yes	266	221.24				1 > 2
None	134	159.34				

Significant differences were found with respect to the ownership structure ($p < 0.01$), number of employees ($p < 0.01$), operational sphere ($p < 0.01$), and training experience ($p < 0.01$). Sector was not a factor that significantly differentiated the groups ($p = 0.086$) in this regard. The directions of the inequalities are explained as follows:

- Firms with local and foreign partnership and firms with sole foreign ownership showed better adaptation to compelling factors than those firms with local ownership ($p < 0,05$).
- Firms with a number of employees more than 50 showed better adaptation to compelling factors than those firms with a number of employees 49 or less ($p < 0,05$).
- Firms operating in the international sphere showed better adaptation than those firms operating in the national scale ($p < 0,05$).
- Firms that had had at least one training of sustainability showed better adaptation than those firms that had had no training of sustainability ($p < 0,01$).

4.2.7. Findings on the Environmental Management Tools Used in Sustainability Practices

As can be seen in Table 17, participants thought that the most effective tool used in minimizing the environmental impacts is ‘operating in compliance with the legal regulation.’ The cumulative percentage of “definitely effective” and “effective” responses was 85.5% for this statement. It is followed by ‘Providing suppliers, customers, and the general public with clear and adequate information on the environmental impact of the products and services of the firm’ with 80.5%, and then ‘consideration of environmental impacts in product development process (investing in clean technology)’ with 80.1%.

Table 17. Findings on the use of environmental management tools

How effective are your activities in minimizing the negative impacts of operations on the environment?	Definitely effective	Effective	Partially effective	Not effective	Definitely ineffective
Having EMAS certificate	1	17.8	17.3	50.8	13.3
Having ISO 14001 certificate	2.5	23.5	14	45.8	14.3
Energy saving endeavors	9.3	60.5	15	12.8	2.5
Minimizing waste and more consideration for recycling	12.5	67.3	9.3	9	2
Activities for preserving the natural environment	7.8	67.8	11.8	10.5	2.3
Endeavors to find environment-friendly suppliers to work with	17.5	52	13.8	14	2.8
Operating in accordance with legal regulations.	14.5	71	8.3	4.3	2
Considering the environmental impacts in product development process (investing in clean technology).	11.3	68.8	9.8	7.8	2.5
Providing suppliers, customers and general public with clear and adequate information on the environmental impact of the products and services of the firm.	9	71.5	11	6.3	2.3
Adopting the end-of-pipe method (removing already formed contaminants)	5	72	10.3	9.8	3

Since the factor analysis split the ‘environmental management tools used for sustainability’ scale into two factors called ‘environment-friendly activities’ (Factor 4) and ‘having certificates of environmental management system’ (Factor 5), two sub-sets of hypotheses were developed for each factor to test whether environmental management tools used for sustainability differed with respect to firm characteristics. The results of the tests are exhibited in Table 18 and Table 19, respectively.

- ***List of hypotheses tested to explore whether ‘environment-friendly activities’ factor differs with respect to firm characteristics***
 - H₁-15: Environment-friendly activities factor significantly differs with respect to the sector in which the firm operated.
 - H₁-16: Environment-friendly activities factor significantly differs with respect to the duration of the operation of the firm.
 - H₁-17: Environment-friendly activities factor significantly differs with respect to the number of employees in the firm.
 - H₁-18: Environment-friendly activities factor significantly differs with respect to the operational sphere of the firm.
 - H₁-19: Environment-friendly activities factor significantly differs with respect to whether the firm had taken any training on sustainability.

- ***List of hypotheses tested to explore whether ‘having certificates of environmental management’ factor differs with respect to firm characteristics***
 - H₁-20: Having certificates of environmental management factor significantly differs with respect to the ownership structure of the firm.
 - H₁-21: Having certificates of environmental management factor significantly differs with respect to the age of the firm.
 - H₁-22: Having certificates of environmental management factor significantly differs with respect to the number of employees in the firm.
 - H₁-23: Having certificates of environmental management factor significantly differs with respect to the operational sphere of the firm.
 - H₁-24: Having certificates of environmental management factor significantly differs with respect to whether the firm had taken any training on sustainability.

Table 18: Kruskal Wallis and Mann Whitney U test results for environment-friendly activities factor						
	N	Avg. Rank	Chi-Sq	DF	P (K-W)	Diff.
Age of the firm			19.725	4	0.001	
1-5 years	27	151.44				1 < 4
6-10	67	178.60				2 < 5
11-15	97	178.81				3 < 4
16-20	80	220.52				4 > 2
21 and more	129	226.04				5 > 1
Number of employees			27.492	3	0.000	
0-9	113	164.43				1 < 4
10-49	92	184.55				
50-249	146	221.40				3 > 1
250 and more	49	251.35				4 > 2
Operational sphere			5.456	2	0.065	
National	277	191.68				
International	108	219.08				
Multinational	15	229.67				
Sector			47.620	5	0.000	
Industry	59	166.66				1 < 4
Construction	48	210.23				2 > 6
Trade	124	239.72				3 > 6
Transportation and storage	45	249.38				4 > 5
Accommodation and catering	21	173.62				5 < 3
Other	103	152.26				6 < 4
	N	Avg. Rank	Mann Whitney	Z	P (M-W)	Diff.
Had any training?			13162.00	-4.308	0.000	
Yes	266	218.02				1 > 2
None	134	165.72				

The results indicated that environment-friendly activities factor significantly differed with respect to the sector in which the firm operated ($p < 0.01$), duration of operation ($p = 0.034$), number of employees ($p < 0.01$), and training experience ($p < 0.01$). These differences are elaborated as the following:

- Those firms operating in transportation and storage sector put more emphasis on environment-friendly activities compared to those firms in other sectors ($p < 0.05$).
- Those firms with an age of 16 years and higher put more emphasis on environment-friendly activities compared to younger firms ($p < 0.05$).
- Those firms with a number of employees of 50 or more put more emphasis on environment-friendly activities compared to those firms a number of employees less than 50 ($p < 0.05$).
- Those firms that had had training on sustainability at least from one institution put more emphasis on environment-friendly activities compared to those firms that had had no training ($p < 0.01$).

Table 19. Kruskal Wallis and Mann Whitney U test results for ‘certificates of environmental management’ factor						
	N	Avg. Rank	Chi-Sq	DF	P (K-W)	Diff.
Ownership structure			13.666	2	0.001	
Local	268	186.30				
Local – foreign partnership	46	220.80				2 > 1
Full foreign	86	233.88				3 > 1
Duration of oper. (age of the firm)			5.760	4	0.218	
1-5 years	27	192.28				
6-10	67	177.68				
11-15	97	216.29				
16-20	80	210.33				
21 and more	129	196.10				
Number of employees			22.708	3	0.000	
0-9	113	162.65				
10-49	92	195.30				
50-249	146	225.26				3 > 1
250 and more	49	223.79				4 > 1
Operational sphere			12.868	2	0.002	
National	277	188.21				
International	108	223.07				2 > 1
Multinational	15	164.83				3 > 1
	N	Avg. Rank	Mann Whitney	Z	P (M-W)	Diff.
Had any training?			14060.00	-3.586	0.000	
Yes	266	214.64				1 > 2
None	134	172.43				

The results indicated that ‘certificates of environmental management’ factor significantly differed with respect to ownership structure ($p < 0.01$), number of employees ($p < 0.01$), operational sphere ($p = 0.002$), and training experience ($p < 0.01$). These differences are elaborated as the following:

- Those firms with full or partial foreign ownership put more emphasis on certificates of environmental management compared to those firms with local ownership ($p < 0.05$).
- Those firms with a number of employees 50 or more put more emphasis on certificates of environmental management compared to those firms with a number of employees less than 50 ($p < 0.01$).
- Those firms operating in the international or multinational sphere put more emphasis on certificates of environmental management compared to those firms operating locally ($p < 0.05$).
- Those firms that had had training on sustainability from at least one institution put more emphasis on certificates of environmental management compared to those firms that had had no training ($p < 0.01$).

4.2.8. Findings on the Social Management Tools Used in Sustainability Practices

When the “Definitely Effective” and “Effective” responses were combined, the most effective tool happened to be ‘Improving the workplace conditions to ensure the security and healthcare of the employees’ with 83.1% while ‘holding periodic/regular meetings with the employees’ came second with 80.8% and ‘supporting the purchase from local suppliers’ in third with 80%. Having OHSAS 1800, SA8000 and AA1000 certificates are considered as the least effective tools (See Table 20).

Table 20. Findings on the use of social management tools

How effective are the activities used to develop your social performance	Definitely effective	Effective	Partially effective	Not effective	Definitely ineffective
Having OHSAS 1800 certificate	2.3	14.3	15.3	52.8	15.5
Having SA8000 certificate	1.3	10.5	17.5	56.3	14.5
Having AA1000 certificate	2	12.3	20	51.8	14
Supporting the employees to participate to the local operations	8.3	64.5	13.3	10.8	3.3
Supporting the local operations and projects through regular financial aid.	13.3	52.8	13	18.3	2.8
Developing the working conditions to ensure the health and security of employees.	12.8	70.3	11.5	4.3	1.3
Supporting the flextime and working at home practices to provide better work life balance for employees.	10.3	58.5	12.8	15.8	2.8
Taking precaution against all discriminations at the hiring process.	14.3	64.8	13.8	5.5	1.8
Supporting the proposal system to participate the employees into decision making process.	11.8	68	14	4.3	2
Organizing periodic meetings with employees.	10.3	70.5	13	4.8	1.5
Providing education opportunities to the local public.	9.3	59	14.3	14.8	2.8
Having an open dialog with local public in polemic. sensitive or contrarian issues against the firm interests.	8.5	59	12.5	16.3	3.8
Supporting the purchase from local suppliers.	6	74	11	7.3	1.8

The following hypotheses were constructed to determine whether the social management tools used in sustainability activities differentiated with respect to firm characteristics. The scale was separated into two significant factors that proved meaningful correlations, namely “supporting the stakeholders” and “certificates of social management system.” Table 21 and 22 show the analysis results.

- **List of hypotheses tested to explore whether ‘supporting the stakeholders’ factor differs with respect to firm characteristics**
 - H₁-25: The supporting the stakeholders significantly differs with respect to firm ownership structure.
 - H₁-26: The supporting the stakeholders significantly differs with respect to sector in which the firm operated.
 - H₁-27: The supporting the stakeholders significantly differs with respect to the duration of the operation of the firm.
 - H₁-28: The supporting the stakeholders significantly differs with respect to the number of employees of the firm.
 - H₁-29: The supporting the stakeholders significantly differs with respect to whether the firm had taken any training on sustainability.
- **List of hypotheses tested to explore whether ‘having certificates of social management’ factor differs with respect to firm characteristics**
 - H₁-30: Having certificates of social management system factor significantly differs with respect to the ownership structure of the firm.
 - H₁-31: Having certificates of social management system factor significantly differs with respect to the number of employees in the firm
 - H₁-32: Having certificates of social management system factor significantly differs with respect to the operational sphere of the firm.
 - H₁-33: Having certificates of social management system factor significantly differs with respect to whether the firm had taken any training on sustainability.

Table 21. Kruskal Wallis and Mann Whitney U test results for supporting the stakeholders’ factor

	N	Avg. Rank	Chi-Sq	DF	P (K-W)	Diff.
Ownership structure			20.138	2	0.000	
Local	268	182.57				
Local – foreign partnership	46	244.23				2 > 1
Full foreign	86	232.99				3 > 1
Duration of oper. (age of the firm)			19.794	4	0.001	
1-5 years	27	169.57				1 < 4
6-10	67	165.49				2 < 5
11-15	97	182.37				3 < 4
16-20	80	218.68				4 > 2
21 and more	129	227.52				5 > 1
Number of employees			49.761	3	0.000	
0-9	113	151.48				1 < 3
10-49	92	178.29				2 < 4
50-249	146	230.80				3 > 2
250 and more	49	264.98				4 > 1

Sector			59.332	5	0.000	
Industry	59	126.64				
Construction	48	181.26				2 > 1
Trade	124	241.76				3 > 1
Transportation and storage	45	262.68				4 > 1
Accommodation and catering	21	179.93				5 > 1
Other	103	179.13				6 > 1
	N	Avg. Rank	Mann Whitney	Z	P (M-W)	Diff.
Had any training?			11317.50	-6.007	0.000	
Yes	266	224.95				1 > 2
None	134	151.96				

The significant differences were found between groups with respect to ownership structure ($p < 0.01$), sector ($p = 0.000$), the age of the firm ($p = 0.001$), number of employees ($p < 0.01$), and status of training ($p < 0.01$). These differences are elaborated as the following:

- Those firms with full or partial foreign ownership put more emphasis on supporting the stakeholders ($p < 0.05$).
- Those firms in the industry sector put more emphasis on supporting the stakeholders than other sectors ($p < 0.05$).
- Those firms with an age of 16 years and higher put more emphasis on activities of supporting the stakeholders ($p < 0.05$).
- Those firms with a number of employees of 50 or more put more emphasis on the activities of supporting the stakeholders than those firms with less than 50 employees ($p < 0.05$).
- Those firms that had had training on sustainability from at least one institution put more emphasis on activities of supporting the stakeholders than those firms that had had no training ($p < 0.01$).

Table 22. Kruskal Wallis and Mann Whitney U test results for ‘certificates of social management system’ factor

	N	Avg. Rank	Chi-Sq	DF	P (K-W)	Diff.
Ownership structure			20.066	2	0.000	
Local	268	183.96				
Local – foreign partnership	46	216.80				
Full foreign	86	243.31				3 > 1
Number of employees			13.607	3	0.003	
0-9	113	175.63				
10-49	92	190.58				2 < 3
50-249	146	224.65				3 > 1
250 and more	49	204.52				

Operational sphere			11.188	2	0.004	
National	277	188.31				
International	108	226.59				2 > 1
Multinational	15	237.80				
	N	Avg. Rank	Mann Whitney	Z	P (M-W)	Diff.
Had any training?			13627.50	-4.037	0.000	
Yes	266	216.27				1 > 2
None	134	169.20				

All alternative hypotheses based on the certificates of social management system were accepted; that is, there were significant differences between the groups with respect to ownership structure ($p < 0.01$), number of employees ($p < 0.01$), operational sphere ($p = 0.004$), and having training experience ($p < 0.01$). These differences are elaborated as the following:

- Those firms with full foreign ownership put more emphasis on certificates of social management system than those firms with partial foreign and local ownership ($p < 0.05$).
- Those firms with a number of employees of 50 or more put more emphasis on certificates of social management system than those firms with a number of employees of 49 or less ($p < 0.05$).
- International firms put more emphasis on the certificates of social management system than those firms with national operations only ($p < 0.05$).
- Those firms that had had training on sustainability from at least one institution put more emphasis on the certificates of social management system than those firms that had had no training ($p < 0.01$).

5. Conclusions and Suggestions

This study has aimed to connect the concept of sustainability with Islamic business and finance through empirical research on corporate customers of Islamic banks in Turkey. The analysis based on a sample of 400 clients located in Istanbul have provided useful findings and implications.

The examinations indicated that client firms generally accepted the importance of sustainability, its relationship with their business manner, and their responsibility to society and the environment. Nevertheless, it was detected that firms were weak in terms of the execution of their operations in accordance with international standards. 70% of the firms were observed as having at least one management quality certificate while 30% had no such document. Those firms that operated in the sectors of wholesale and retail trade, transportation, and storage had a better position in terms of having quality certificates compared to other sectors.

As for the causes motivating the sustainability practices of firms, it was seen that the most effective factors were reputation (96.6%), cost reduction (91.1%), competition (89.8%), and legal regulation (89.3%). The least effective factor was observed as the public pressure, with a level of 71.8%.

A significant positive relationship was detected between experience of training, meaning attribution on sustainability, the impacts of the factors causing the sustainability on firms, and the emphasis of the firms on the practices of environmental and social matters (see Table 23). On the other hand, the ratio of those firms that had taken the training were only 66.5%. The most active training institutions were the Chamber of Trade (60.4%) and Small and Medium Enterprises Development Organization of Turkey (17.7%).

The other important characteristics of the firms in terms of sustainability that positively impact were the ownership structure, number of employees, and operational sphere. As seen in Table 23, those firms that had fully or partial foreign ownership, international operations, and a number of employees of at least 50 and more showed better acceptance and practice of sustainability compared to other characteristics.

Table 23 indicates which type of corporate customers of Participation Banks in Turkey should be developed in terms of sustainability. As a general definition, young firms owned by local capitalists, employers of less than 50 people, and those operating within industry sector at national level must be conveyed to a much better awareness and practice of sustainability. Although the emphasis on sustainability is a general political & economics issue of a government and regulators, the finance sector plays an internal role in the success of this fact. In this regard, the participation banks operating in Turkey are recommended to take the following actions to contribute sustainability:

- Determining the priorities in sustainability through revision of all end-to-end processes and developing strategies,
- Sharing the strategies with society through effective reporting techniques
- Concentrating on the green financing instruments in Islamic finance to contribute to the economy of recycling.

Table 23. How does the adoption and practice of sustainability differentiate in institutional customers of participation banks with respect to certain characteristics?

Characteristics	The meanings attributable to sustainability	The motivations for sustainability practices		Use of environmental management tools		Use of social management tools		
	F1	F2	F3	F4	F5	F6	F7	F8
Ownership Structure								
Local								
Local–foreign partnersh	✓	✓	✓		✓		✓	
Full foreign	✓	✓	✓		✓		✓	✓
Sector								
Industry								
Construction			✓				✓	
Trade			✓				✓	
Transportation storage			✓				✓	
Accomodation&catering							✓	
Other							✓	
Age of The Firm								
1-5 years								
6-10								
11-15								
16-20				✓				
21 and above				✓				
Number of Employees								
0-9								
10-49								
50-249	✓	✓	✓	✓	✓		✓	✓
250 and above	✓	✓	✓	✓	✓		✓	
Operational Sphere								
National								
International		✓	✓		✓			✓
Multinational					✓			
Had Any Training?								
Yes	✓	✓	✓	✓	✓		✓	✓
None								
<p>✓ (The check sign): Indicates the higher positive point compared to other groups.</p> <p>Names of each factors are as follows: Factor 1 indicates The Meaning Attributable to Sustainability, Factor 2: Management of Stakeholder Perception, Factor 3: Adaptation to Compelling Factors, Factor 4: Environment-friendly Activities, Factor 5: Certificates of Environmental Management System, Factor 6: Considering the Stakeholders in Business Processes, Factor 7: Supporting the Stakeholders, Factor 8: Certificates of Social Management System.</p>								

Source: Constructed by the authors.

References

- Adnan, A. A. (2015). The missing dimension of corporate social responsibility (CSR) measurement in Malaysian Islamic banks. *British Journal of Economics, Finance and Management Sciences*, 10(1), 16–28. Retrieved from <https://core.ac.uk/download/pdf/222965146.pdf>
- Agriyanto, R. (2015). Redefining objective of Islamic banking: Stakeholders perspective in Indonesia. *Economica Jurnal Ekonomi Islam*, 6(2), 77–90. <https://doi.org/10.21580/economica.2015.6.2.795>
- Aribi, Z. A., & Arun, T. (2015). Corporate social responsibility and Islamic financial institutions (IFIs): Management perceptions from IFIs in Bahrain. *Journal of Business Ethics*, 129(4), 785–794. <https://doi:10.1007/s10551-014-2132-9>.
- Bartlett, M. S. (1950). Tests of significance in factor analysis. *British Journal of Mathematical and Statistical Psychology*, 3(2), 77–85. <https://doi.org/10.1111/j.2044-8317.1950.tb00285.x>
- Bilim Sanayi ve Teknoloji Bakanlığı. (2013). *81 il sanayi durum raporu* [The industrial status report of 81 provinces]. Retrieved from <https://docplayer.biz.tr/13354-81-il-sanayi-durum-raporu.html>
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297–334. <https://doi.org/10.1007/BF02310555>
- Dusuki, A. W. (2008). Understanding the objectives of Islamic banking: A survey of stakeholders' perspectives. *International Journal of Islamic and Middle Eastern Finance and Management*, 1(2), 132–148. <https://doi.org/10.1108/17538390810880982>
- Dinar Standard & Dar Al-Istithmar. (2010). *Social responsibility trends at Islamic financial institutions: Based on 2009 social responsibility survey*. Dinar Standard and Dar Al-Istithmar.
- Hahn, T., & Scheermesser, M. (2006, July). Approaches to corporate sustainability among German companies. *Corporate Social Responsibility and Environmental Management*, 13, 150–165. <https://doi.org/10.1002/csr.100>
- Hair J. F., William C.B., Barry J. B., & Rolph E. A. (2009). *Multivariate data analysis* (7th ed). Pearson.
- İstanbul Menkul Kıymetler Borsası, (2011). *Türk iş dünyasında sürdürülebilirlik uygulamaları değerlendirme raporu* [Sustainability practices assessment report in the Turkish business world]. Retrieved from https://www.pwc.com.tr/tr/publications/arastirmalar/pdf/pwc_surdurulebilirlik_raporu-2012.pdf
- Jusoh, W. N. H. W., & Ibrahim, U. (2017). Corporate Social Responsibility of Islamic Banks in Malaysia : Arising issues. *Islamic Economic Studies*, 25(Special Issue), 155–172. <https://doi.org/10.12816/0036188>
- Keskin, M. (2014). *Katılım bankalarında kurumsal sosyal sorumluluk* [Corporate social responsibility at participation banks]. (Master's Thesis). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp>
- Khan, T. (2019). Reforming Islamic finance for achieving sustainable development goals. *Journal of King Abdulaziz University, Islamic Economics*, 32(1), 3–21. <https://doi.org/10.4197/Islec.32-1.1>
- Nor, S. M., & Asutay, M. (2011). *Re-considering CSR and sustainability identity of Islamic banks in Malaysia: An empirical analysis*. Paper presented at the Eighth International Conference on Islamic Economics and Finance, (February), 1–17. Retrieved from <http://www.iefpedia.com/english/wp-content/uploads/2012/01/Shifa-Mohd-Nor.pdf>
- Şendurur, U., & Temelli F. (2018). Türkiye’de faaliyet gösteren geleneksel bankalar ve katılım bankalarının sürdürülebilirlik açısından karşılaştırılması [Comparison of participation and conventional banks which are operating in Turkey in terms of sustainability]. *Muhasebe Bilim Dünyası Dergisi*, 20(2), 330–346. <https://doi.org/10.31460/mbdd.344785>

- Tuna, Ö. (2014). *Kurumsal sürdürülebilirlik yaklaşım ve uygulamaları: Kobi'lere yönelik bir araştırma* [Corporate sustainability approaches and practices: The study on SMEs]. (Doctoral dissertation). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp>
- Yu, J., & Bell, J. N. B. (2007). Building a sustainable business in China's small and medium-sized enterprises (SMEs). *Journal of Environmental Assessment Policy and Management*, 9(1), 19–43. <https://doi.org/10.1142/S1464333207002718>
- Yazıcıoğlu, Y., & Samiye E. (2007). SPSS Uygulamalı bilimsel araştırma yöntemleri [SPSS applied scientific research methods] (pp.43-50). *Ankara, Turkey: Detay Yayıncılık*.
- Williams, S., & Schaefer, A. (2013). Small and medium-sized enterprises and sustainability: Managers' values and engagement with environmental and climate change issues. *Business Strategy and the Environment*, 22(3), 173–186. <https://doi.org/10.1002/bse.1740>

CHAPTER 9

THE DOUBLE BOTTOM LINE COMMITMENT AND MICROFINANCE SUSTAINABILITY IN PAKISTAN

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Abstract

The purpose of this article is to conceptualize the sustainability of microfinance institutions (MFIs) by reviewing the existing sustainability indices and indicators in terms of double bottom line. A multidimensional construct based on financial and outreach indicators is proposed to develop an index that measures sustainability of MFIs. Principal Component Analysis is used to assign weights to individual indicators to determine the sustainability score of MFIs in Pakistan for the period 2006-2015. The weights assigned to individual indicators of financial self-sufficiency (FSS), operational self-sufficiency (OSS), average loan balance per borrower (ALPB) and number of active borrowers (NAB) are 0.6643, 0.6607, -0.1905 and 0.2931 respectively. The positive values for weights indicate that any increase in FSS, OSS, and NAB will increase the sustainability scores of MFI, whereas increase in ALPB may negatively contribute to the sustainability score of MFI. Additionally, the determinants of sustainability are identified using fixed effect regression. Results suggest that return on asset, borrower per staff member, operating expense ratio, subsidies and age of MFIs are contributing positively towards the sustainability of MFI.

Keywords: Microfinance, sustainability, double bottom line, sustainability index, financial sustainability, outreach

1. Introduction

Sustainability of Microfinance institutions (MFIs) is essential in achieving the poverty reduction goal (Janda & Turbat, 2013; Rahman & Mazlan, 2014b; Tehulu, 2013). It is necessary for capital generation, cost management, controlling the impact of formal lenders, fulfill the needs of stakeholders, and serving the maximum number of poor people (Vinelli, 2002). MFIs sustainability is defined as institutional capacity to provide uninterrupted services to financially deprived people who are declined financial services by the conventional financial institutions (Rao, 2014; Saad, Taib, & Bhuiyan, 2018). It is important that they should provide financial support to the poor without depending on subsidies. MFIs which are dependent on grants, donor funds and government support can achieve short term profitability but they cannot achieve long term financial sustainability (Bogan, 2012). MFIs should reduce their dependency on external support and increase their efficiency to provide long term services (Abdulai & Tewari, 2017; Burki, Sadiq, & Burki, 2018).

According to Adongo and Stork (2005), MFIs which are not dependent on the external support are usually more productive. Long-term use of subsidy leads to incompetent MFIs and they are unable to attract funds from the market when donor support cease (Bogan, 2008). Microfinance borrowers are high-risk as they do not offer collateral and bear more information and transaction cost due to small loan (Pollinger Outhwaite, & Cordero-Guzmán, 2007). Thus, it become difficult for MFIs to manage their cost of operations. Therefore, MFIs which receives subsidies to manage their operations may remain financially sustainable and their future is questionable as subsidies may cease at some point in time. Keeping this in view, Nyamsogoro (2010) have emphasized on not having MFIs instead of holding unsustainable ones who are unable to cover their cost of operation.

So, the next question is how we measure sustainability? Review of literature highlights that the measurement for sustainability of MFIs has been a serious problem (Bhanot, Bapat, & Connelly, 2015; Mia, Nasrin, & Cheng, 2015; Rai & Rai, 2012; Saad et al., 2018, 2019). Sustainability of MFIs is often considered in financial terms only and is approximated by financial sustainability (see for example Ayayi & Sene, 2010; Kaur, 2014; Lenssen et al., 2014). Financial sustainability is usually determined by financial self-sufficiency (FSS) (Chaves & Gonzalez-Vega, 1996; Cull & Morduch, 2007; Rahman & Mazlan, 2014b) and operational self-sufficiency (OSS) (Bogan et al., 2007; Islam, Porporato, & Waweru, 2014; Lenssen et al., 2014; Rai & Rai, 2012).

The use of financial measure to determine MFIs sustainability has been strongly criticized by several researchers such as Wijesiri, Yaron, & Meoli (2017) and Bhanot et al. (2015). They

argued that financial measures does not provide any information about MFIs performance in terms of poverty alleviation. Saad et al. (2018) also raise their concern on financial measure of sustainability. They argued that majority of the researchers have emphasized on achieving the financial sustainability only, whereas MFIs main objective is to reach maximum number of people and contribute to poverty reduction. Their argument was based on “the triangle of Microfinance” theory presented by Zeller and Meyer (2002). According to this theory, MFIs performance is determined by financial sustainability and outreach. Outreach approximates MFIs ability to reach the target clients and fulfill their demands of financial services (Abate, Borzaga, & Getnet, 2014; Okumu, 2007; Yaron, 1994; Zeller & Meyer, 2002). According to Conning (1999), outreach is approximated by its depth and breadth.

The changing landscape of the microfinance industry, which is characterized by a decline in donor funding, has reignited debates regarding the ability of microfinance institutions to serve the poor while remaining financially sustainable (Abdulai & Tewari, 2017). The current debate on microfinance has settled on the point that MFIs has to attain dual goal of achieving financial sustainability and outreach, termed as ‘double bottom line’ (Guntz, 2011; Mia et al., 2015; Wijesiri et al., 2017). However, existing literature on MFIs sustainability is unable to provide a robust measurement of sustainability based on double bottom line (Wijesiri et al., 2017).

Pakistan, a developing country, has documented the significance of microfinance as a robust tool for uplifting of financially deprived segment and reducing poverty. Pakistan Microfinance Network (PMN) has reported a remarkable growth of microfinance sector during the past decade. In 2016, the growth in aggregate loan portfolio of the sector was around 29.2 percent amounting to 132 billion (PMN, 2016). The State Bank of Pakistan has stressed MFIs to increase their outreach so that maximum number of financially marginalized people can avail financial services (Khan, Butt., & Khan, 2017). Although, for the last 3 decades, several initiatives are taken by the government to reduce gender disparity and poverty; still, they lack in achieving the desired outcomes (Khan & Sulaiman, 2015). According to the ‘Microfinance Strategy 2007’ published by State Bank of Pakistan, the microfinance sector set a target of reaching 3 million borrowers by the end of 2010. Furthermore, by the end of 2015, the number of borrowers were expected to increase to 10 million (SBP, 2011). However, the PMN report published in 2015 showed that the number of poor people reached by MFIs were around 3.6 million (PMN, 2015). The target was not achieved even by the end of year 2018 as the total number of poor reached by MFIs were around 6.7 million which was far below the target (PMN, 2018).

Despite a number of initiatives taken by the State Bank of Pakistan and huge support from the government, why the desired outcomes are not achieved? To answer this question, PMN has conducted several studies to investigate the factors that impact MFIs sustainability in Pakistan (Aban & Zahra, 2011; Ammar & Ali, 2014). However, these studies mainly focused on factors such as natural disasters, macro-economic trends, credit risk, competition, and security. Khan et al. (2017), Ahmed, Mehmood and Haq (2016) and Gohar and Batool (2015) have highlighted the lack of empirical research on identifying factors that influence sustainability of MFIs in Pakistan.

The current study is novel in conceptualizing a multidimensional construct to measure sustainability by focusing on both financial and outreach aspects. This study is also the first of its kind to determine the factors that influence the sustainability of Microfinance institutions in Pakistan. Hence, this study contributes to the existing literature in two ways. Firstly, using Principal Component Analysis (PCA), as the basic framework, the index incorporates all the four dimensions of sustainability- financial and operational self-sufficiency, and depth and breadth of outreach. Secondly, multiple regression using fixed effect is done to identify the factors which contribute towards the sustainability of MFIs measured using “double bottom line”.

Other sections below include literature review, data sample, methodology for index, regression results and discussion. Finally, conclusion, policy implications and limitations were discussed.

2. Literature Review

This section provides a brief view of the evolution of Microfinance sector in Pakistan. It further highlights the issues in measurement of sustainability and propose a robust measurement for sustainability of MFIs in Pakistan. Later, the theoretical review of the literature on determinants of sustainability are also discussed.

2.1. Evolution of Microfinance sector in Pakistan

Microfinance was pioneered in Pakistan in the 1953 through Village Aid package program which was abandoned in 1962. The program was replaced by Agriculture Development Bank of Pakistan (ADBP) which was established in 1957. In 1961, both the programs were merged under ADBP to provide small loans to farmers and poor people in rural areas. The funding of this program was subsidized by the Government of Pakistan. From the 1980s to 1990s, several rural support programs (RSP) including; Orangi Pilot Project (1987), Agha Khan RSP (currently First microfinance bank), Sarhad RSP (1989) and National RSP (1991) were initiated to provide subsidized funds for poverty reduction (Ahmad, 2011; Burki et al., 2018).

The late 1990s appeared to be the defining years for the microfinance sector as it gains attention after the sector was recognized to play a significant role in the economic growth. Kashf Foundation, NRSP supported Urban Poverty Alleviation Program, ADBP supported Khushhali Bank (first government Microfinance bank) were among few of the many initiatives taken for the development of microfinance sector (Burki et al., 2018). In 1998, PMN was formally launched to provide support and assist MFIs operating in Pakistan. Furthermore, the launch of Pakistan Poverty Alleviation Fund (an apex funding body) provided a significant boost to the microfinance sector after its launch in 1999.

In 2006, PMN in support with World Bank launched a fund for providing microloans to MFIs. According to PMN, the sector has reached a total asset size of approximately PKR 427 billion with an expected growth of around 3 times by the end of 2020 (PMN, 2018). Furthermore, the number of active borrowers during the year 2014-2018 are 2.8, 3.6, 4.2, 5.5 and 6.7 million respectively (PMN, 2018).

Likewise, a microfinance guarantee facility of around GBP 10 million is launched with the help of ADBP to ensure the uninterrupted finance for MFIs. This guarantee facility is provided to boost the outreach by providing financial services to the poor people of Pakistan. Moreover, ADBP also provided the loan of USD 150 million for the launch of countries first ever microfinance bank, Khushhali Bank. In 2001, State Bank of Pakistan has issued separate prudential regulations to further strengthen the Microfinance sector in Pakistan (Burki et al., 2018).

2.2. Issues in Sustainability Measurement

The consistency and accuracy of the existing measures for sustainability are questionable as they ignored the achievement of double bottom line (Saad et al., 2018; Wijesiri et al., 2017). Based on the argument above, the existing measurements of sustainability found in the literature are reviewed under double bottom line principal and shortcomings are discussed.

Financial sustainability, one of the two goals, is defined as MFIs ability to generate revenues that cover financial and operating cost, adjust bad loans and further expand financial services (Rahman, Hafeez, & Sun, 2015). It is further explained in terms of financial self-sufficiency (FSS) and operational self-sufficiency (OSS) (Lenssen et al., 2014; Rahman & Mazlan, 2014a). OSS measures MFIs ability to cover operating and financial expenses from its revenues. These include all operational expenses such as expense from operations, expenditure from the provision for loan losses and expenses incurred on financial activities (CGAP, 2003). FSS refers to independence of institution from subsidy and operating

successfully. FSS considers three types of adjustments for subsidies including adjustment for subsidized interest rates, inflation, and write-offs and loan loss provision.

Eventually, this give rise to a debate whether subsidizing interest rates is justified (Hermes & Lensink, 2007). There are two different approaches in microfinance literature: Welfarist approach and Institutionist approach. Welfarist advocates that the poor cannot afford higher interest rates; hence increased emphasis on financial sustainability by reducing subsidise on MFIs funding goes against poverty outreach. On the other hand, Institutionist claims the non-existence of any such empirical evidence where poor cannot afford higher interest rate, nor that poverty level of clients and financial sustainability are negatively correlated. Despite the shift of microfinance paradigm towards financial system approach, the debate continues to exist. Thus, in this study we agree on the double bottom line of achieving financial sustainability and outreach simultaneously. As Yaron (1994) also argued that successful rural financial institutions need to focus on being subsidy independent and reaching maximum outreach.

Yaron (1992) proposed subsidy dependence index (SDI), to measure sustainability of rural microfinance institutions. The index measures the dependence level of MFIs on grants and the degree of interest rural financial institutions should adopt to be independent of subsidies¹. Several studies found in the literature have used SDI to determine the sustainability of MFIs (Manos & Yaron, 2009; Wijesiri et al., 2017). Although the calculations using SDI are useful, the index has major drawbacks as highlighted by the previous researches. Hermes and Lensink (2007) argued that increase in lending rates does not necessarily increase the profit (as assumed by SDI) because moral hazard effects and adverse selection could lead to lower profits. Cull and Morduch (2007) in their study on leading microbanks had to deal with this issue. Additionally, SDI do not provide any information on the minimum acceptable level of subsidies. In order to better understand this issue, there is a need to compare the benefit and cost of subsidies. Unfortunately, with far-reaching assumptions, Khandker (2005), and Townsend and Yaron (2001) suggest that social benefits of Grameen, and BRAAC exceed the costs. Chaves and González Vega (1993) argued that calculation of SDI is not possible due to non-availability of the required data. Morduch (1999) and Nanayakkara (2012) argued that dependence on SDI only focus on the financial sustainability of MFI. Saad et al. (2018) argued that increase effort of MFI to become subsidy independent using SDI may results in higher lending rates and lower outreach.

1 For detail understanding of Subsidy dependence index see (Yaron, 1992)

A recent measure following the double bottom line is developed by Bhanot et al. (2015) for MFIs in India. They include both financial (OSS) and outreach (breadth and depth) measure to develop MFI sustainability index. “Technique for order preference and similarity to ideal solution” is used in their study to determine the sustainability score of MFIs. Although, the index follows the dual goal of microfinance, but it does not include the eradication of the role of subsidy to achieve the sustainability as they ignore FSS measure in their sustainability index. Saad et al. (2018) criticizes the measurement by Bhanot et al. (2015), signifying that MFI are unable to achieve sustainability if they are dependent on subsidies. Adongo and Stork (2005), find that MFIs which are not dependent on the external support are usually more productive in increased outreach. Additionally, long-term dependence on subsidy leads to incompetent MFIs which are unable to attract funds from the commercial investors due to inefficient operation and costly outreach (Bogan, 2008). Microfinance borrowers are high-risk as they do not offer collateral and bear more information and transaction cost due to small loan (Pollinger et al., 2007). Therefore, Nyamsogoro (2010) emphasizes on not having MFIs instead of holding unsustainable ones who are unable to cover their cost of operation.

After reviewing the existing literature and evaluating the existing measures on double bottom line principal, this study proposes a robust measurement for sustainability of MFIs. Keeping in mind the dual goal of microfinance, this study conceptualizes sustainability in the context of both financial sustainability and outreach and contends that increase in outreach is possible when MFIs are financially sustainable.

2.3. Determinants of Sustainability

Microfinance institutions in Pakistan are facing the problem of sustainability, but it was unable to attract the attention of researchers. In Pakistan, MFIs face a number of issues such as operational and reputational risk, liquidity risk, inflated lending costs, law and order situation and high loan defaults (Burki et al., 2018). Several studies have highlighted the poverty alleviation and welfare through MFIs (Global Monitoring Report, 2015) but very few have actually worked on identifying the factors influencing MFIs sustainability (Burki et al., 2018). The theoretical model for the current study provides an outlook from the institutional perspective and define the factors that play a significant role in determining sustainability of all MFIs operating in Pakistan.

Haider, Tariq, Asim and Tariq (2018) examined the factors that affect MFIs financial sustainability in Pakistan using data of 13 NGOs for the period 2005-2015. They reported

that cost per borrower, staff productivity and cost structure are critical enablers of MFIs financial sustainability in Pakistan. MFIs which effectively utilize their human resource and reduce their operational cost are financially sustainable. Burki et al. (2018) further showed that percentage of female borrowers, number of active borrowers and financing charges are significant contributors to MFIs sustainability. The findings were obtained by analyzing the data from 25 MFIs working in Pakistan from the year 2008-2015.

Khan et al. (2017), in their study on identifying the successful determinants of sustainability for MFIs operating in Bangladesh, India and Pakistan for the year 2011-2015 found more comprehensive results. The balanced panel data analysis for 32 MFIs suggest that inefficient management with poor cost control and high portfolio at risk leads towards unsustainable MFIs. Large MFIs with bigger asset size and gross loan portfolio have higher capacity of being financially sustainable. Ahmed et al. (2016) found that MFIs size, efficiency, capital structure, portfolio quality and yield on gross loan portfolio to be significant determinants of MFIs sustainability. They also found that leverage, productivity, capital structure, and cost per borrower have no significant impact. Muhammad, Chen and Ahmad (2019) further showed that large assets base increase operational efficiency and help achieve economies of scale which leads towards improved financial performance of MFIs operating in Pakistan. The increase in efficiency leads towards more profitable MFIs which provide smooth path for achieving financial sustainability. Quayes (2015), Meyer (2019) and Abdullah and Quayes (2016) also had similar findings in their study. Firm size and leverage have significant positive impact, whereas portfolio quality have significant negative impact on MFIs sustainability in Pakistan (Muhammad et al., 2019).

Iqbal, Tufail, Mohsin and Sandhu (2019) used Data Envelopment analysis base on double bottom line objective to determine the efficiency scores of MFIs working in Pakistan. MFIs working in Pakistan have low efficiency score and none of the MFIs were statistically efficient by using single input. Efficiency scores may be improved by focusing on staff productivity, use of latest technology and advanced methods. The efficiency of MFIs in Pakistan is influenced by their age and size.

2.3.1. Hypothesis Development

Profitability of MFIs is measured using Return on asset (ROA) and return on equity (ROE) (CGAP, 2003). MFIs in Pakistan are struggling hard to achieve the positive profitability level (Syedah, Shan, Anum, Zeshan, & Kaleem, 2013). MFIs which focus on profitability usually target to make bigger loans for clients better-off resulting in increased loan repayment and

minimum cost per loan (Tucker & Miles, 2004). These results may also be achieved by reducing excess to women borrowers who are costly to reach (Cull, 2011). According to Von Stauffenberg, Jansson, Kenyon and Barluenga-Badiola (2003) profitability reflects the overall performance including efficiency and portfolio quality of MFIs. However increased focus on profitability results in the deviation from the social mission of reaching the poor (Yaron, 1994).

H1: Return on Asset significantly influence the sustainability of MFIs.

For many investors ROE is of paramount importance as it provides a reflection of the return on their investment portfolios (Rahman & Mazlan, 2014b). Although, MFIs are not-for-profit institutions, competitive ROE is necessary to attract funds from donors and investors which help to be sustainable (Campbell & Rogers, 2012). Very few studies have focused on the relationship of ROE with MFI sustainability. The lack of interest may be valid to some extent because MFIs function as a not-for-profit entity (Campbell & Rogers, 2012). Since, MFIs are currently trending towards rural banks and non-bank financial institutions (NBFIs) (Armendáriz de Aghion & Morduch, 2000). Therefore, these organizational forms or structures allow MFIs to enter into the capital market to generate funds for operations.

H2: Return on Equity significantly influence the sustainability of MFIs

Portfolio quality, approximated by portfolio at risk greater than 30 days (PAR), represent the credit default risk for loans outstanding greater than 30 days and are not yet recovered. The risk profile of MFIs is dependent on its loan's portfolio, which is based on size of portfolio and degree of risk aversion. MFIs need to explore its portfolio quality to maintain its uninterrupted growth and development (Janda & Zetek, 2014; Naz, Salim, Rehman, Ahmad, & Ali., 2019). Portfolio quality has a significant role as Daher and Le Saout (2015) and Mersland and Strøm (2010) found its negative impact on MFIs profitability and sustainability. This indicate that microfinance institutions need to maintain a portfolio of credit wealthy clients to achieve sustainability. Tchakoute-Tchuigoua and Soumaré (2019) reported that PAR, operating efficiency and capital-asset ratio are the major determinants of sustainability. Awaworyi Churchill (2018) found a positive significant impact of portfolio quality According to Basharat, Hudon and Nawaz (2015), extensive growth of MFI might result in increased risk of poor loan portfolio management. On the other hand, Yimga (2015) found that growth does not deteriorate the portfolio quality. Some researchers also argued that lending funds to the poor not contain default risk (Adhikary & Papachristou, 2014; Conning, 1999; D'espallier Guérin, & Mersland, 2011; Wahid, 1994). A study by Nyamsogoro (2010), Nwachukwu (2014) and Kar and Swain (2014) found that increase in PAR>30 days

results in the decrease in MFIs sustainability. Ayayi and Sene (2010) approximated that loan portfolio quality is an important factor in determining MFIs financial sustainability. Researchers have found inconsistent results while analyzing the influence of portfolio quality on the MFIs sustainability.

H3: Portfolio at risk greater than 30 days is expected to have a significant relationship with sustainability of MFIs

Staff productivity is vital while determining a firm performance (Twaha & Rashid, 2012). Sustainability can be achieved with increased focus on employee development which will uplift overall staff productivity (Ayayi & Sene, 2010). MFIs in Pakistan lack on the efficiency scale at the institution level which needs to be improved. These institutions need to have improved focus on enhancing their employees capabilities and skills to attain maximum output through use of advanced technologies and techniques (Iqbal et al., 2019). Staff productivity and MFIs financial sustainability have a positive correlation (Nwachukwu, 2014; Nyamsogoro, 2010). Furthermore, MFIs which operate in countries with high income per capita usually have less productive staff due to lower outreach (Nawaz, 2010). Very few studies have focused on staff productivity while approximating MFIs sustainability (Twaha & Rashid, 2012). Haider et al. (2018) examined the factors influencing MFIs sustainability in Pakistan and found staff productivity to be significant determinant of sustainability. Ahmed et al. (2016) found that productivity does not influence sustainability of MFIs in Pakistan.

H4: Staff productivity has a significant relationship with MFIs sustainability.

Efficiency, measured by Operating expense ratio (OER), is a major factor that determines MFIs sustainability (Gonzalez, 2007; Kar & Swain, 2014). OER is calculated using operating expenses / average outstanding loan portfolio ratio. The ratio has an inverse relation with efficiency of MFIs. Armendáriz and Szafarz (2011) examined the issues faced by MFIs that expected to increase outreach level while remaining financially sustainable. They concluded that attaining financial sustainability and outreach are impacted by loan monitoring and operating cost due to agency relationships based on moral hazards among investors, equity owners, borrowers and MFIs staff. Daher and Le Saout (2015) and Ayayi and Sene (2010) found an inverse relationship between efficiency and sustainability. They revealed that OER negatively influence MFIs sustainability. Hermes and Lensink (2011) revealed significant impact of efficiency on relative size of the loan. Nevertheless, literature on MFIs efficiency predicted a declining trend for large loan size (Naz et al., 2019). Pasiouras and Kosmidou (2007) and Zopounidis and Kosmidou (2008) have a negative correlation between OER and

profitability of institution. On the contrary, Molyneux and Thornton (1992) approximated that increased expense on productive staff leads to a profitable institution. Furthermore, Hudon and Traca (2011) found that efficiency and MFI sustainability have a negative relationship. They emphasized on the use of subsidies to become operationally efficient. Thus, inconsistent results were found for the influence of efficiency on MFIs sustainability.

H5: OER is expected to have a significant impact on MFIs sustainability.

MFIs that lack loss absorption capacity tends to be unsustainable. Debt to equity ratio (DER) determines the loss absorption capacity of MFIs (Tehulu, 2013). Several studies have found empirical evidence of positive relationship while approximating firm's debt level and performance (Berger & Di Patti, 2006; Roden & Lewellen, 1995). Other studies found that businesses debt level has a negative relationship with sustainability (Booth, Aivazian, Demircug-Kunt., & Maksimovic, 2001; Rajan & Zingales, 1995; Wald, 1999). Kinde (2012) results suggest an insignificant relationship between capital structure and MFIs sustainability. Thus, inconsistent results were found for the impact of leverage on MFIs sustainability.

H6: DER significantly influence MFIs sustainability.

Gross loan portfolio (GLP) represents the size of an MFIs by total loans outstanding. In Pakistan, MFIs have shown an inconsistent growth in the gross loan portfolio (GLP). According to the MIX market balanced data, MFIs in Pakistan have a gross loan portfolio of 51.6 million USD in 2007 and decrease rapidly in the next years. In 2014, gross loan portfolio for MFIs in Pakistan was 44.7 million USD². Gross loan portfolio have been a key determinant of the sustainability of MFIs (Gutierrez-Nieto Serrano-Cinca, & Molinero, 2007; Saeed, 2014; Zeller & Meyer, 2002). Higher the gross loan portfolio more would be the MFIs outreach. Interest, fee and commission on gross loan portfolio have been the core income for MFIs (Nwachukwu, 2014). Therefore, MFIs which are unable to manage their loan portfolios are more exposed to systematic risk (Zeller & Meyer, 2002). Few empirical studies were found to explore the impact of GLP on MFIs sustainability. Both GLP and MFIs sustainability have a positive correlation (Daher & Le Saout, 2015; Ngo, Mullineux, & Ly, 2014). The literature displayed mixed results of GLP on sustainability (Naz et al., 2019).

H7: GLP significantly influence the sustainability of MFIs.

Due to outreach to the poor focus, majority MFIs are dependent on grants, donations and other forms of subsidies, especially at startup phase. Subsidies being part of the majority of

microfinance institutions hinders their sustainability (Cull & Morduch, 2007; De Aghion & Morduch, 2004; Morduch, 1999). Subsidies were considered as primary source of funds for the MFIs in the inception stage (Von Pischke, 2007). Several researchers have emphasized on the use of subsidy in the inception stage of MFIs (Adongo & Stork, 2005; Rhyne, 1998; Schreiner, 2000). However, subsidies, in the long run, result in the unsustainability (Morduch, 2000; Robinson, 2001). According to Bogan (2008), use of subsidy may lead towards profitability but not sustainability. Moreover, it is important for MFIs to be free of external aid as several aid schemes have already collapsed (Ayayi & Sene, 2010). Researchers have found mixed results during their empirical study of the impact of subsidies on MFIs sustainability.

H8: Subsidies and sustainability are linked significantly.

Sustainability of MFI is also influenced by its age (Kipasha, 2013). The age usually refers to the time MFI is in operation from its starting date. Robinson (2001) depicts that MFIs which are having an age of more than six years have sustainability ratio of 102 per cent. Similarly, MFIs whose age is more than three, but less than six years have financial sustainability ratio of 86 per cent. New MFIs with age below three years have sustainability ratio of 69 per cent. This implies that age is related to the level of MFIs sustainability (Robinson, 2001). Bogan, Johnson and Mhlanga, (2007) and Cull and Morduch (2007) further concluded a direct relation between age and financial sustainability. Age is deemed to be the significant contributor in evaluating efficiency, MFIs growth of outreach (Cull & Morduch, 2007) and double bottom line achievement (Wijesiri et al., 2017). On the contrary, Kyereboah-Coleman and Osei (2008) found that MFIs age is not crucial to ascertain outreach level.

H9: Age of MFIs significantly impact their sustainability.

MFI size is determined by the value of total assets (Bogan et al., 2007; Hartarska, 2005; Hermes Lensink, & Meesters, 2011; Lafourcade, Isern, Mwangi, & Brown, 2005; Mersland & Strøm, 2008, 2009). Cull and Morduch (2007) claims that MFI performance is dependent on its size. They argued that large microfinance banks usually have lower outreach. The reason is that large MFIs are more motivated towards increased profits which affect the outreach to the poor. Several studies in the literature (Bogan, 2012; Cull & Morduch, 2007; Tehulu, 2013) have identified a positive significant relationship between size and MFIs sustainability. Nyamsogoro (2010) have also found that size positively impact MFIs sustainability. Size help MFIs in achieving economies of scale which direct MFIs toward financial sustainability. However, Cull and Morduch (2007) found that big MFIs mostly have lower level of outreach

because they are tempted with higher profit spreads. The focus of these MFIs is mostly on less poor clients instead of the deserving poor. Large MFIs can conveniently achieve financial sustainability as they can easily reach large number of poor clients.

H10: Size has a statistically significant relationship with MFIs sustainability.

Based on the arguments above it can be implied that profitability (ROA, ROE), portfolio quality (PAR>30), staff productivity, efficiency (OER), liability management (DER, GLP), subsidies, age and size might be the explanatory factors of sustainability of MFIs.

3. Data Sample and Methodology

The sustainability index in this study is developed using Principal Component Analysis, a multi-variable statistical method that helps to disclose information in an easier pattern by using a complex set of indicators (García Márquez & García-Pardo, 2010; Lian, Lai, Lin, & Yao, 2002). Shlens (2010) highlighted that output produced from PCA are the best available values obtained from linear algebra application. Due to non-parametric and simple method of extracting useful information out of complex data, the application and use of PCA is found in almost all forms of analysis - computer graphics to neuroscience. Furthermore, depending upon the nature of the data, Fixed effect regression identified using Hausman test is applied in this study to determine the factors that influence MFIs sustainability. The application of Fixed effect regression model for panel data is supported by Naz et al. (2019), and Daher and Le Saout (2015).

The sample of this study comprises of 38 microfinance institutions located in Pakistan, which are categorized under microfinance banks, microfinance institutions and rural support programs. Unbalanced panel data for this study is obtained for the period of 2006-2015. The data have been gathered from Pakistan microfinance network, Mix market and annual reports of microfinance institutions.

3.1. Sustainability Index Using Principal Component Analysis

Principal components determined by factor analysis is a technique to examine the similarities in a data series (Asteriou & Price, 2001). It provides a means for identification of common factors which are unobserved (sustainability in this case)³. In this technique, a combination of the linearly independent variables explains the observed variable. Following Asteriou and Price (2001), the objective of the study is to develop a mix of technical variables

3 For a more detailed exposition of the Principal Components Method see Koutsoyiannis (1977) and Theil (1971).

out of the initially available variables. The loadings for the variables are chosen to satisfy the following conditions of constructed principal components:

- 1) the primary components are not correlated,
- 2) the first principal component captivates the maximum proportion out of the total variation for the group of available variables, the second component absorbs the maximum proportion out of the remaining variation in the group (after considering the variation captivated by the first principal component), and so on.

In order to overcome the shortcomings of the index developed by Bhanot et al. (2015), this study estimated sustainability of MFIs using the following equation.

$$S_{it} = w_1 FSS_{it} + w_2 OSS_{it} + w_3 DOO_{it} + w_4 BOO_{it} \quad (1)$$

Where; S represents the sustainability for microfinance institutions; w_1, w_2, w_3, w_4 are the weights assigned by PCA; FSS indicates the financial self-sufficiency ratio; OSS represents the operational self-sufficiency ratio; DOO denotes the depth of outreach and BOO represents breadth of outreach.

Since outreach depth is approximated by ALPB, whereas, outreach breadth is approximated by NAB, the above equation takes the following form.

$$S_{it} = w_1 FSS_{it} + w_2 OSS_{it} + w_3 ALPB_{it} + w_4 NAB_{it} \quad (2)$$

Where, ALPB is the proxy used to measure average loan balance per borrower and NAB measures the number of active borrowers.

3.1.1. Measuring Weights Using Principal Component Analysis

In this study sustainability index is developed by assigning weights to the sustainability indicators using PCA. The four indicators including FSS, OSS, depth of outreach and breadth of outreach are used to determine the scores of sustainability for the respective years under study. The loadings for the variables are obtained using PCA. Asteriou and Price (2001) stated that loadings for the variables are chosen if they are not correlated. Table 1 shows the correlation matrix for the variables identified for the PCA. The correlation matrix shows that the pairwise correlation among the variables is low. The financial sustainability variables of FSS and OSS have comparative high values of 0.84. According to Asteriou and Hall (2007), if the correlation coefficient value exceeds 0.9, it may be problematic. Considering coefficient value of 0.9 as benchmark supports that the problem of correlation among the sustainability index variables are not problematic.

Table 1. Correlation matrix for PCA

	FSS	OSS	ALPB	NAB
FSS	1	0.8477	-0.1254	0.2410
OSS	0.8477	1	-0.1599	0.1960
ALPB	-0.1254	-0.1599	1	0.0043
NAB	0.2410	0.1960	0.0043	1

Table 2 provides the component values for the variation in the group. The eigenvalue for the component 1 as shown in the table is 1.9852. According to Asteriou and Price (2001), the first principal component captivates the maximum proportion out of the total variation for the group of available variables. The total number of components are 4 and the number of observations reported are 273. Moreover, the proportion for component 1 is 0.4964 which is more than the remaining components.

Table 2. Principal components / correlation

Component	Eigenvalue	Difference	Proportion	Cumulative
Component 1	1.98552	0.979791	0.4964	0.4964
Component 2	1.00573	1.47311	0.2514	0.7478
Component 3	0.858418	0.708086	0.2146	0.9624
Component 4	0.150333	-	0.0376	1.0000

Table 3 represents the principal component (eigenvectors).

The weights for each of the individual variables assigned under component 1 are used in this study. The weight for FSS representing financial self-sufficiency is 0.6643. operational self-sufficiency represented by OSS have assigned weight of 0.6607. Moreover, ALPB representing depth of outreach and NAB representing breadth of outreach have -0.1905 and 0.2931 weights, respectively.

Table 3. Principal component (eigenvectors)

Variable	Component 1	Component 2	Component 3	Component 4	Unexplained
FSS	0.6643	0.0272	0.2352	-0.7090	0.000
OSS	0.6607	-0.0357	0.2591	0.7036	0.000
ALPB	-0.1905	0.8289	0.5252	0.0275	0.000
NAB	0.2931	0.5576	-0.7757	0.0386	0.000

By assigning weights to the respective indicators, equation 2 takes the following form

$$S_{it} = (0.6643)FSS_{it} + (0.6607)OSS_{it} + (-0.1905)ALPB_{it} + (0.2931)NAB_{it} \quad (3)$$

The positive values for the weight assigned to FSS, OSS, and NAB indicates that these indicators contribute positively towards sustainability. Increase in FSS and OSS indicates that MFIs that tend to be more sustainable needs to focus on generating revenues by being

independent of subsidy. As MFIs tend to increase the NAB their sustainability level also increase. The positive component value support that increase in outreach of MFI enhances the sustainability. Additionally, ALPB has reported a negative value in contributing toward MFIs sustainability in Pakistan. This implies that when average loan size increases the sustainability of MFIs decreases which supports the assumption for the double bottom line and outweighs the existence of mission drift. MFIs main objective is to reach maximum number of poor people and this may be achieved when loan size is small. The small loan size is an indicator that MFIs are providing facility to the deserving poor people of the society. Mersland and Strøm (2010) have clearly identified that MFIs providing small loans to a large number of poor people are more cost-effective than MFIs providing bigger loans. Kumar Kar (2011) reported that MFIs which are increasing their loan size must be very careful as large loans increase the risk associated with them. Since MFI loans are not backed up with collateral, the possibility of default increase as loan size increase, this affects MFI profitability in the long run.

By using equation 3 sustainability score for the MFIs is obtained from the year 2006-2015. Table 4 presents the descriptive statistics for the sustainability of MFIs. The number of observations using unbalanced panel data are 273. It is observed from the table that mean score for S is approximately equal to 0. The inclination of score towards the positive values indicate higher sustainability level for MFIs.

Variable	Obs.	Mean	Std. Dev.	Min	Max
S	273	0.0000000238	1.000009	-2.29566	3.513061

The sustainability score for MFIs in Pakistan over the year 2006-2015 are obtained using the Principle component analysis. These scores are used further to determine the factors which effect MFIs sustainability.

3.2. Regression Model

Multiple regression analysis is used in this study to test the impact of independent variables including profitability, portfolio quality, productivity assessment, efficiency, liability management, subsidies, age and size on sustainability of MFIs. The empirical model for the current study can be specified as.

$$S_{it} = \alpha_0 + \beta_1 ROA_{it} + \beta_2 ROE_{it} + \beta_3 PAR_{it} + \beta_4 BPS_{it} + \beta_5 OER_{it} + \beta_6 DER_{it} + \beta_7 LNGLP_{it} + \beta_8 LNSUB_{it} + \beta_8 LNAGE_{it} + \beta_8 LNTA_{it} + \varepsilon_{it} \quad (3)$$

Where; S_{it} represent the sustainability of MFIs measured using PCA; ROA (proxy for profitability) measures the return on assets; ROE (proxy for profitability) indicates return on equity; PAR (proxy for portfolio quality) represents portfolio at risk > 30 days; BPS (proxy for productivity assessment) denotes the borrowers per staff member; OER (proxy for efficiency) measures the operating expense ratio; DER (proxy for liability management) represents debt to equity ratio. While LNGLP indicates gross loan portfolio; LNSUB denotes the subsidies; LNAGE indicates the age of MFIs and LNTA is the proxy used to measure the size of MFIs; ε is the error term; i represents the individual microfinance institution and t denotes the time period. The study have used natural logarithm for gross loan portfolio, subsidies, age and size to overcome simultaneity bias and improve the goodness of fit of the model (Nasrin, Rasiah, Baskaran, & Masud, 2018).

3.2.1. Descriptive Statistics

In table 5 descriptive statistics are presented for the independent variables used in this study. The number of observations for each variable are presented in Column 2 of the table. This study used the unbalanced panel data. According to Quayes (2015), the unbalance data contains randomly missing values which does not pose any problem in the results. In table 5, ROA, ROE, PAR, BPS, OER, DER, LNGLP, LNSUB, LNAGE and LNTA are the independent variables used in this study.

As for profitability, the mean value for ROA is -0.0039 which indicates that on average the MFIs in Pakistan are unable to generate positive income level by using its assets. The possible reason for negative ROA could be the diverse nature of the industry, having high proportion of MFIs and rural support programs with dominating social performance goals. This implies that MFIs operating in Pakistan are not efficiently utilizing their assets and their conversion rate of deposit into loan is not satisfactory which leads towards negative returns. The negative value also indicates that Pakistani MFIs are not efficient in managing their expenses (Mohsin, Bashir, & Bin Tariq, 2018). This value of ROA is lower than 0.03 value reported by Daher and Le Saout (2015) for 362 MFIs from 73 countries between 2005-2011 and higher from -0.068 reported by Qayyum and Ahmad (2006) for Pakistan. The mean value of ROE for current study is 0.196 or 19.6 per cent for MFIs in Pakistan. Positive value for ROE indicates that MFIs in Pakistan are generating positive returns by utilizing their equity. Percentage of portfolio at risk with mean value of 4.85 indicate that portfolio at risk is low. This mean value is much lower than ratio for PAR of 6.1 when studied by Adhikary and Papachristou (2014) using panel data of 113 MFIs for South Asian countries from 2003 to 2009. However, the maximum value for PAR with 83.4 per cent in table 5 indicates that MFIs

are at a risk of default. Borrower per staff member assesses the staff productivity and the maximum value of 586 borrowers indicates that MFIs in Pakistan are efficiently using its staff members to increase outreach. Additionally, the mean value of BPS for MFIs in Pakistan is 138 which is lower than the BPS of 176.01 studied by Adhikary and Papachristou (2014) for 113 MFIs in South Asia.

Furthermore, the mean value for OER reported in the current study is 0.17 or 17 per cent. The lower OER indicates that MFIs are more efficient in generating operating profits. This ratio is higher than 14 per cent for Pakistan MFIs, 12.2 per cent for Indian MFIs and 11.8 per cent for MFIs in Bangladesh, reported by Qayyum and Ahmad (2006). A high value for DER shows the dependence of MFI on leverage, which reduce the loss absorption capacity. Negative value for DER for some MFIs is due to negative book value of equity which points to financial issues. The minimum (-51.09) and maximum (60.80) value of DER reported in table 5 have a big gap. Moreover, the mean for DER reported is 2.618. This value is much higher than DER mean value of 1.316 for Pakistan MFIs, but lower than 16.541 for Indian MFIs and 9.052 for MFIs in Bangladesh, reported by Qayyum and Ahmad (2006).

Variable	Obs.	Mean	Std. Dev.	Min	Max
ROA	273	-0.003913	0.094202	-0.585559	0.244821
ROE	273	0.196258	0.989337	-2.296683	8.333191
PAR	273	0.048595	0.112156	0	0.834862
BPS	273	138.3918	93.22045	0	586.0429
OER	273	0.170237	0.157261	0	1.282449
DER	273	2.618457	9.635145	-51.0999	60.80763
LNGLP	273	12.77811	1.817673	6.475433	17.01875
LNSUB	272	7.185693	5.985084	0.693147	15.54199
LNAGE	272	2.344570	0.765924	0	3.367296
LNTA	273	13.40439	1.666288	9.239414	17.10004

On the other hand, mean value for subsidy represented by LNSUB in table 5 is 7.18. MFIs which are more dependent on subsidies to meet its operations, usually leads to unsustainability. LNAGE represents the number of years MFIs have been in operation. The mean value for the age in current data is 2.34. The mean value for AGE when studied by Adhikary and Papachristou (2014) is reportedly 4.803. Bhanot et al. (2015) reported the mean value for AGE is 10.44 for MFIs in India. This indicates that MFIs in Pakistan are still comparatively young when compared across countries of the same region. On the other hand, LNTA representing size has the mean value of 13.404. Overall, it is observed that there are no large variations among the institutions over the study period. This is evidenced by small standard

deviations of the variables. Other than DER, LNSUB and LNTA which have standard deviation of 9.63, 5.98 and 1.66 respectively, other variables reported a more stable standard deviation that is between 0.09 to 0.98. The small variations in the variables could be due to the strict monitoring by the regulator in strengthening the microfinance sector especially for the achievement of millennium development goal.

3.2.2. Diagnostics

Before analyzing the data for the regression analysis, a series of diagnostics are done to fulfill the BLUE (best linear un-biased estimation) condition. Data is tested for the existence of multicollinearity, homoskedasticity and autocorrelation problem.

Correlation Matrix is reported in research studies to identify the multicollinearity among the explanatory variables. Asteriou and Hall (2007) state that researchers appear to believe that correlation coefficient of more than 0.9 between variables may be problematic in estimation. Taking this as the benchmark, the table 6 shows that the pair wise correlations among the regressors are relatively small. Hence, multicollinearity should not be of concern in this study. Pair wise correlation coefficients among the variables such as ROA, and BPS are relatively higher but still they are lower than the benchmark of 0.9, suggested by Asteriou and Hall (2007).

Table 6. Correlation matrix

	S	ROA	ROE	PAR	BPS	OER	DER	LNGLP	LNSUB	LNAGE	LNTA
S	1.000										
ROA	0.704	1.000									
ROE	0.104	-0.016	1.000								
PAR	-0.256	-0.181	0.052	1.000							
BPS	0.318	0.250	0.128	-0.118	1.000						
OER	-0.137	-0.326	0.155	-0.036	-0.197	1.000					
DER	0.061	0.095	-0.191	-0.041	0.024	-0.111	1.000				
LNGLP	0.310	0.189	0.123	-0.321	0.165	-0.197	-0.083	1.000			
LNSUB	0.243	0.189	0.031	-0.128	0.296	-0.207	0.132	0.022	1.000		
LNAGE	0.346	0.279	0.055	-0.033	0.395	-0.141	0.149	0.014	0.338	1.000	
LNTA	0.232	0.167	0.063	-0.153	-0.032	-0.262	-0.088	0.866	0.161	-0.139	1.000

Breusch-Pagan-Godfrey test is described in table 7, which is used to detect the existence of heteroscedasticity problem in the model is found to be not significant, indicating the problem of heteroscedasticity does not exist in the model. The F-statistics indicates the significance level above 5% and does not support the alternative hypothesis.

Table 7. Diagnostic tests		
Heteroskedasticity Test: Breusch-Pagan-Godfrey	Prob. Chi-Square(10)	0.0223
Breusch-Godfrey Serial Correlation LM Test	Prob. Chi-Square(1)	0.0000

Table 7 provide the results for the autocorrelation in the data. The significance of Breusch-Godfrey serial correlation LM test shows that the problem of auto correlation exists in the data. The problem is resolved by White-Cross section later.

3.2.3. Hausman Test

Fixed and random effect techniques are mostly used for the panel data analysis. To check for the fixed or random effect, several tests are conducted. Likelihood ratio test is applied on the data to select among ordinary regression or fixed effect regression. Likelihood ratio test results are presented in table 8. Result show the value of $p < 0.01$, indicating that the appropriate model is fixed effect. The decision whether random effects or fixed effects should be used is made using the Hausman test (refer to Table 8). The results for the Hausman test accept the alternative hypothesis at 5 per cent significance level, indicating that preferred model is fixed effect (FE).

Table 8. Hausman Test			
Cross-section tests	Statistic	d.f.	Prob.
Likelihood ratio	140.442929	37	0
Hausman test	20.516049	10	0.0247

4. Findings and Discussion

To handle the problem of autocorrelation, GLS estimation is used in this study for the regression analysis. GLS is a transformed model of OLS and it is more appropriate than OLS when there is some problem in the data (Gujarati, 2003). White cross section standard error and covariance are conducted as to tackle auto-correlation problems, while fixed effects model is used as it is found from the Hausman test to be the most appropriate model. Millson (2013), Kipasha and Zhang (2013), and (Quayes, 2015) have also used FE estimation while studying sustainability of MFIs in their study. Sustainability of MFIs, measured by S, is the dependent variable used in this study.

F-statistics in table 9 clearly show that the fixed effect estimation model is significant. Additionally, R^2 value of 70.5 (0.705) per cent shows that the representing model well explain the variation in S. Results further shows that ROA has significant impact on the sustainability of MFI when measured using sustainability index. The coefficient value of 6.17 for ROA significant at 1 per cent implies that 1 per cent increase in ROA would increase the sustainability of MFI by 6.17 per cent. MFIs in Pakistan need to efficiently utilize their assets and increase their deposit utilization ratio. They must emphasize on reducing their operational cost and improved their

portfolio quality. This would help MFIs to increase their outreach and become less dependent on external funds and equity borrowings. The results of this study are consistent with other studies such as Bhanot et al. (2015) for MFIs in India, and Crabb (2008) for MFIs in 90 countries.

Statistical results show that borrower per staff member have a positive significant relationship with sustainability. The results of this study are also in line with Bhanot et al. (2015) and Twaha and Rashid (2012) for MFIs in India. This indicates that the staff should be kept motivated to better manage their clients and increase their outreach. Additionally, the increase in value of BPS implies that MFI are reaching more poor people, instead of wealthier clients. Given that outreach to the poor is associated with small loans, increase in BPS shows that MFI staff are reaching relatively poor client. Thus, MFIs in Pakistan need to ensure that their staff is highly motivated and attached with institution goal of serving the very poor to keep MFI moving up the sustainability ladder.

Operating expense ratio has a significant relation with sustainability of MFI. The positive significant relation indicates that MFI in Pakistan are expanding their operations and have a higher target outreach. The cost incurred by MFIs in Pakistan on expansion of infrastructure, structural changes and technological advancement is contributing positively towards sustainability. This is supported by Molyneux and Thornton (1992) who argued that higher expenditures may increase profits of the organization due to more expenditures on the productive human resource and business expansion. The positive relation of OER with sustainability is consistent with the study of Rai and Rai (2012) for MFIs in Bangladesh and India. Moreover, Tehulu (2013) for East Africa, and Kar and Swain (2014) for 71 countries found that variation in OER significantly explain MFI sustainability.

Table 9. Fixed effect Estimation Results		
Variable	Coefficient	Prob.
C	-2.64955	0
ROA	6.177***	0
ROE	0.028	0.337
PAR	-0.672	0.120
BPS	0.001***	0.004
OER	1.204*	0.094
DER	0.003	0.411
LNGLP	0.083	0.174
LNSUB	0.014*	0.056
LNAGE	0.529***	0.004
LNTA	9.71E-05	0.999
R ²	0.756	
Adjusted R ²	0.705	
F-statistic	14.730***	
Note: ***, * shows significance at 1% and 10%.		

As evidenced from the table 9, logarithm of subsidies has a significant relationship with sustainability of MFI in Pakistan. The coefficient value for subsidies is 0.014 and is significant at 10 per cent level. Results suggest that subsidies play a significant role in achieving sustainability of MFI. Morduch (2006) highlighted that smart subsidy plays an important role in improving performance of MFIs. Subsidies received from donor may be used for client and staff training, development and research activities, and activities that match the donor interest. These activities help MFI to achieve positive outreach as both staff and clients become efficient and remain aware of the use of funds. Additionally, MFI need start-up subsidies to operate and expand their operations. In Pakistan, several MFIs have recently started expanding their operations, so their dependence of subsidies may help them to achieve sustainability.

Table 9 shows that age of MFI is significant at 1 per cent level. The coefficient value of 0.529 with positive sign shows that as MFIs age increases, sustainability of MFI also increases. The results are aligned with life cycle theory which shows that as MFIs age increase they tend to be more sustainable (Nyamsogoro, 2010). The results indicate that over the years MFIs in Pakistan are learning from their experiences and improving their operations. Mature MFIs in Pakistan are more productive in managing, retaining and improving their customers. Over the years, MFIs staff have learned through their experience and as these institutions get mature, their outreach also increases. MFIs further improve their control on operation related issues, loan portfolio quality, reduce the default rate which leads them towards sustainability. In other words, MFIs that have considerable experience in the microfinance sector have diligently applied credit risk management and general efficient management techniques to attain financial sustainability. Young MFIs in Pakistan are inexperienced and have higher operating cost, and low market penetration. The finding of current study is consistent with the Nurmakhanova, Kretzschmar and Fedhila (2015) for 71 countries and Rahman and Mazlan (2014) for MFIs in Bangladesh.

Return on equity has no impact on sustainability of MFIs which indicates that ROE does not contribute in achieving the double bottom line goal in Pakistan. The insignificant relationship with sustainability indicates that MFI in Pakistan are not dependent on income from their equity. Positive insignificant relationship of ROE in Pakistan may be attributed to the argument of Campbell and Rogers (2012) that, lack of emphasis towards ROE is because MFIs operate as a non-profit entity which is also supported by Tucker and Miles (2004). The findings of the study are consistent with Naz et al. (2019), Ayayi and Sene (2010) and Churchill (2019).

The estimation results in Table 9 shows that PAR, a proxy of portfolio quality have an insignificant negative relationship with sustainability. The findings are consistent with Bayai (2017) for South African Development Community, using a dataset of 122 MFIs from 11 countries for period 1997-2013. The insignificant relationship of PAR with sustainability is consistent with the previous findings by Naz et al. (2019) for MFIs in Pakistan. Additionally, Mersland and Strøm (2008) found that PAR has insignificant relationship with outreach of MFIs. Tehulu (2013), Nwachukwu (2014), and Rai and Rai (2012) also found that variation in PAR days negatively impact the sustainability of MFIs.

In addition, DER has insignificant relation with sustainability of MFI. Lenssen et al. (2014) provide possible explanation for this result. They argue that various combinations of capital do not improve the financial sustainability of the MFIs. Additionally, Kinde (2012) and Rai and Rai (2012) have also found that DER does not impact MFI sustainability. Additionally, GLP another proxy for liability management also found insignificant relation with sustainability. The increase in GLP does not necessarily leads to increase in outreach as there is a possibility that MFIs are repeating their customers to increase the number of loans. Additionally, Okumu (2007) argued that if average loan size increases at a rate higher than the rate at which GLP increases, this also does not implies that MFIs have better outreach. Henceforth, increase in GLP may not necessarily always improve the sustainability. Several managerial factors including lack of vision and bad governance may also be the reason for the insignificant impact of increase in GLP on sustainability.

Size of MFIs have found to be insignificant in relation to sustainability. This indicates that economies of scale do not provide significant support for MFIs in Pakistan in expanding outreach and financial sustainability. The possible reason for the above result could be that, the data for size variable does not indicate enough variation to significantly impact the sustainability of MFIs in Pakistan when sample include different type of MFIs. The results of current study are in line with Hartarska (2005), and Kar and Swain (2014).

5. Conclusion

Critical review of the previous literature highlighted that MFI achieve sustainability if they attain the double bottom line by being financially sustainable and achieving outreach simultaneously. The measure of sustainability developed in this study posit equal emphasis by considering the financial (financial and operational self-sufficiency) and outreach (depth and breadth) measures simultaneously. As it is complex to independently study and analyze trends across separate indicators (Saltelli, 2007), a composite indicator of sustainability is proposed in this study.

Using PCA, weights are assigned to all the four indicators of sustainability. The weight for FSS, OSS, ALPB and NAB are assigned as 0.6643, 0.6607, -0.1905 and 0.2931 respectively. The positive values for weights indicate that increase in FSS, OSS, NAB increase the sustainability scores of MFI, whereas increase in ALPB may negatively contribute to the sustainability score of MFI. The findings imply that increase in number of borrowers and decrease in loan size contribute to the sustainability of MFIs in Pakistan. MFIs in Pakistan must focus on increased outreach, providing small loans to a large number of poor people. This outweighs the possible existence of mission drift in Pakistan. It is impetus for the policy makers and governing authorities that MFIs in Pakistan need to emphasize on the double bottom line to achieve long term sustainability. Next, these weights are assigned to individual indicators and sustainability score of MFIs in Pakistan are obtained for the year 2006-2015.

Results of this study suggest that ROA is the most significant contributor toward sustainability with coefficient value of 6.177 and is significant at 1 per cent. Although ROE has insignificant impact, yet profitability is the key contributor towards sustainability. The descriptive statistics shows that on average MFIs in Pakistan have negative ROA which shows that MFIs need to focus on reducing their operating and financial costs. The operating cost can be reduced by adopting new technologies and product innovations. The positive significant impact of OER on sustainability further endorse the viewpoint. Microfinance institutions incur diverse kinds of expenses such as financial expenses, provision for loan impairment, operating expenses, personnel expenses, and administrative expenses. MFIs in Pakistan are expanding their operations as the overall sector is growing rapidly over the past few years. All these expenses affect the sustainability of MFIs. In Pakistan, MFIs can reduce their operating cost if they posit strict monitoring to late payments, vigorous credit screening, and enhance their staff productivity. Regression results also show that staff productivity has a positively significant impact on sustainability. MFIs provide collateral free loans with higher chances of loan default. Highly productive and vigilant staff may help reduce the cost of loan default, ensure timely repayment, and increase the sustainability.

Regression result show that subsidies have a significant impact on sustainability of MFIs. Although, MFIs become sustainable when they are independent of subsidies, but this does not posit that MFIs in Pakistan should not accept them. Schreiner (2000) highlighted that MFIs need subsidies during the early years of operations for expansion of operations and outreach. Subsidies may help MFIs for staff development programs, enhanced technical assistance, and increase in outreach. However, the long-term dependence on subsidy is highly

criticized as it leads to unsustainability. Furthermore, results suggest that MFIs age is also positively correlated with sustainability of MFIs. As MFIs get mature, they tend to be independent of subsidies and become more sustainable. MFIs gain several advantages with increase in age. They improve their lending methods through years of experimentations and improved technology and have better understanding of market and customers. Learning by doing help MFIs staff to gain experience and become more competent in the field, which reduce MFIs operating cost and results in higher profitability and sustainability.

Policy implications of this study are manifold. Firstly, to achieve a higher sustainability level, MFIs in Pakistan need to be financially independent, with less or no support from the government or donor agencies. Secondly, MFIs core focus is to increase outreach and reach maximum poor people, they tend not to increase their loan size. Regulatory authorities in Pakistan must keenly observe the loan size as large loans may increase the risk of default due to lack of collateral support. Thirdly, Policy makers in Pakistan needs to understand that sustainability level of MFIs may best be achieved when they increase their focus on double bottom line. MFIs in Pakistan are gradually increasing their outreach over the years. They must focus on targeting very poor clients and increase their target population for long term sustainability. MFIs in Pakistan can achieve their sustainability goals if they increase their focus on staff productivity. MFIs need to focus on developing human resource by providing them on field and off field training. They need to ensure that their staff have clear understanding of the compliance and regulations. Staff needs to be kept motivated and goal oriented by increasing their remunerations. Resultantly, MFIs staff will help them to reduce loan losses, enable savings and deposit, reach maximum poor people, and increase in outreach. Productive staff members will eventually help to better manage their portfolio quality, reduce the average costs of operations, and increase profitability which may lead towards greater sustainability of MFIs in Pakistan.

MFIs in Pakistan are highly equity based, retaining their deposits and not converting loans into deposits. This ultimately resulted in negative return. State Bank needs to facilitate MFIs in successful conversion of their deposit into loans for increased revenues. Furthermore, majority of MFIs in Pakistan are not accepting deposit or are reluctant to take deposit. The policy makers must understand the significance of deposit and their contribution in achieving sustainability.

The current study has several limitations and recommendations. Firstly, theoretical framework for the study is developed from the institutional perspective and lack the impact of external factors such as unemployment, gross domestic product, inflation, interest rate and

growth on MFIs sustainability. Future research may include external factors and other institutional variables to have a better understanding of the proposed model. Furthermore, corporate governance has significant contribution in institutional growth and success. So, future research may determine the impact of corporate governance on MFIs sustainability.

References

- Aban, H., & Zahra, K. (2011). Risks to Microfinance in Pakistan. *Pakistan Microfinance Network*.
- Abate, G. T., Borzaga, C., & Getnet, K. (2014). Cost-Efficiency and Outreach of Microfinance Institutions: Trade-offs and The Role Of Ownership. *Journal of International Development*, 26(6), 923–932.
- Abdulai, A., & Tewari, D. D. (2017). Trade-off between outreach and sustainability of microfinance institutions: evidence from sub-Saharan Africa. *Enterprise Development and Microfinance*, 28(3), 162–181.
- Abdullah, S., & Quayes, S. (2016). Do women borrowers augment financial performance of MFIs? *Applied Economics*, 48(57), 5593–5604.
- Adhikary, S., & Papachristou, G. (2014). Is there a trade-off between financial performance and outreach in south asian Microfinance institutions? *The Journal of Developing Areas*, 48(4), 381–402.
- Adongo, J., & Stork, C. (2005). *Factors influencing the financial sustainability of selected microfinance institutions in Namibia*: Namibian Economic Policy Research Unit.
- Ahmad, U. (2011). Efficiency Analysis of Micro-finance Institutions in Pakistan.
- Ahmed, S., Mehmood, T., & Haq, N. U. (2016). Determinants of Financial Sustainability of Microfinance Institutions in Pakistan. *Journal of Contemporary Issues in Business Research*, 5(4).
- Ammar, A., & Ali, B. (2014). Risks to Microfinance In Pakistan. *Pakistan Microfinance Network*.
- Armendáriz, B., & Szafarz, A. (2011). On mission drift in microfinance institutions *The handbook of microfinance* (pp. 341-366): World Scientific.
- Armendáriz de Aghion, B., & Morduch, J. (2000). Microfinance beyond group lending. *Economics of transition*, 8(2), 401–420.
- Asteriou, D., & Hall, S. G. (2007). *Applied Econometrics: a modern approach, revised edition*. Hampshire: Palgrave Macmillan.
- Asteriou, D., & Price, S. (2001). Political instability and economic growth: UK time series evidence. *Scottish Journal of Political Economy*, 48(4), 383–399.
- Awaworyi Churchill, S. (2018). Sustainability and depth of outreach: Evidence from microfinance institutions in sub-Saharan Africa. *Development Policy Review*, 36, O676–O695.
- Ayayi, A. G., & Sene, M. (2010). What drives microfinance institution's financial sustainability. *The Journal of Developing Areas*, 44(1), 303–324.
- Basharat, B., Hudon, M., & Nawaz, A. (2015). Does efficiency lead to lower prices? A new perspective from microfinance interest rates. *Strategic Change*, 24(1), 49–66.
- Bayai, I. (2017). Financing structure and financial sustainability: Evidence from selected Southern Africa development community microfinance institutions.
- Berger, A. N., & Di Patti, E. B. (2006). Capital structure and firm performance: A new approach to testing agency theory and an application to the banking industry. *Journal of Banking & Finance*, 30(4), 1065–1102.
- Bhanot, D., Bapat, V., & Connelly, J. (2015). Sustainability index of micro finance institutions (MFIs) and contributory factors. *International Journal of Social Economics*, 42(4).

- Bogan, V. (2008). Microfinance institutions: does capital structure matter? *Available at SSRN 1144762*.
- Bogan, V. (2012). Capital structure and sustainability: An empirical study of microfinance institutions. *Review of Economics and Statistics*, 94(4), 1045–1058.
- Bogan, V., Johnson, W., & Mhlanga, N. (2007). Does capital structure affect the financial sustainability of microfinance institutions. *Retrieved on*, 7(04), 2013.
- Booth, L., Aivazian, V., Demircug-Kunt, A., & Maksimovic, V. (2001). Capital structures in developing countries. *Journal of finance*, 87–130.
- Burki, A. K., Sadiq, A., & Burki, H. U. (2018). Financial Sustainability and Microfinance Institutions from an Emerging Market. *Risk Governance and Control: Financial Markets & Institutions*, 8(4).
- Campbell, N. D., & Rogers, T. M. (2012). Microfinance Institutions: A Profitable Investment Alternative? *Journal of Developmental Entrepreneurship*, 17(04), 1250024.
- CGAP. (2003). Microfinance Consensus Guidelines. Retrieved from www.cgap.org
- Chaves, R. A., & Gonzalez-Vega, C. (1996). The design of successful rural financial intermediaries: Evidence from Indonesia. *World development*, 24(1), 65–78.
- Chaves, R. A., & González Vega, C. (1993). The design of successful rural financial intermediaries: Evidence from Indonesia.
- Churchill, S. A. (2019). Microfinance financial sustainability and outreach: is there a trade-off? *Empirical Economics*, 1-22.
- Conning, J. (1999). Outreach, sustainability and leverage in monitored and peer-monitored lending. *Journal of development economics*, 60(1), 51–77.
- Crabb, P. (2008). Economic freedom and the success of microfinance institutions. *Journal of Developmental Entrepreneurship*, 13(02), 205–219.
- Cull, M. (2011). Does regulatory supervision curtail microfinance profitability and outreach? *World development*, 39(6), 949–965.
- Cull, R., & Morduch, J. (2007). Financial performance and outreach: a global analysis of leading microbanks. *The Economic Journal*, 117(517), F107–F133.
- D'espallier, B., Guérin, I., & Mersland, R. (2011). Women and repayment in microfinance: A global analysis. *World development*, 39(5), 758–772.
- Daher, L., & Le Saout, E. (2015). The Determinants of the Financial Performance of Microfinance Institutions: Impact of the Global Financial Crisis. *Strategic Change*, 24(2), 131–148.
- De Aghion, B. A., & Morduch, J. (2004). *Microfinance: Where do we stand*: London: Palgrave Macmillan.
- García Márquez, F. P., & García-Pardo, I. P. (2010). Principal component analysis applied to filtered signals for maintenance management. *Quality and Reliability Engineering International*, 26(6), 523–527.
- Gohar, R., & Batool, A. (2015). Effect of corporate governance on performance of microfinance institutions: A case from Pakistan. *Emerging Markets Finance and Trade*, 51(sup6), S94–S106.
- Gonzalez, A. (2007). Efficiency drivers of microfinance institutions (MFIs): The case of operating costs. *MicroBanking Bulletin* (15).
- Gujarati, D. (2003). *Basic Econometrics Fourth Edition* McGraw Hill Gujarati, DN,(2003). *Basic Econometrics*: McGraw Hill. International Edition.
- Guntz, S. (2011). Sustainability and profitability of microfinance institutions. *CAIFD-Center for Applied International Finance and Development, Research Paper*, 4.

- Gutierrez-Nieto, B., Serrano-Cinca, C., & Molinero, C. M. (2007). Microfinance institutions and efficiency. *Omega*, 35(2), 131–142.
- Haider, V., Tariq, A., Asim, J., & Tariq, S. (2018). Factors Affecting the Financial Sustainability of Microfinance Institutions (MFIs) in Pakistan. *UCP Management Review (UCPMR)*, 2(2), 75–86.
- Hartarska, V. (2005). Governance and performance of microfinance institutions in Central and Eastern Europe and the newly independent states. *World development*, 33(10), 1627–1643.
- Hermes, N., & Lensink, R. (2007). The empirics of microfinance: what do we know? *The Economic Journal*, 117(517), F1–F10.
- Hermes, N., & Lensink, R. (2011). Microfinance: its impact, outreach, and sustainability. *World development*, 39(6), 875–881.
- Hermes, N., Lensink, R., & Meesters, A. (2011). Outreach and efficiency of microfinance institutions. *World Development*, 39(6), 938–948.
- Hudon, M., & Traca, D. (2011). On the efficiency effects of subsidies in microfinance: An empirical inquiry. *World Development*, 39(6), 966–973.
- Iqbal, N., Tufail, M. S., Mohsin, M., & Sandhu, M. A. (2019). Assessing Social and Financial Efficiency: The Evidence from Microfinance Institutions in Pakistan. *Pakistan Journal of Social Sciences (PJSS)*, 39(1).
- Islam, Z., Porporato, M., & Waweru, N. (2014). Cost structure and financial sustainability of microfinance institutions: the potential effects of interest rate cap in Bangladesh. *International Journal of Financial Services Management*, 7(1), 54–72.
- Janda, K., & Turbat, B. (2013). Determinants of the financial performance of microfinance institutions in Central Asia. *Post-Communist Economies*, 25(4), 557–568.
- Janda, K., & Zetek, P. (2014). Macroeconomic factors influencing interest rates of microfinance institutions in the Latin America and the Caribbean. *Agricultural Economics*, 60(4), 159–173.
- Kar, A. K., & Swain, R. B. (2014). Interest rates and financial performance of microfinance institutions: Recent global evidence. *European Journal of Development Research*, 26(1), 87–106.
- Kaur, P. (2014). Outreach and Sustainability of Microfinance Institutions in India in Pre and Post Andhra Pradesh Microfinance Crisis in Context of South Asia. *Global Journal of Finance and Management*, 6(6), 569–574.
- Khan, Z., & Sulaiman, J. (2015). Social and financial efficiency of microfinance institutions in Pakistan. *The Pakistan Development Review*, 389–403.
- Khan, Z. A., Butt, S., & Khan, A. A. (2017). Determinants of Financial Self Sufficiency in Microfinance Institutions: A study of Pakistan, India and Bangladesh. *European Online Journal of Natural and Social Sciences*, 6(2), 296–301.
- Khandker, S. R. (2005). Microfinance and poverty: Evidence using panel data from Bangladesh. *The World Bank Economic Review*, 19(2), 263–286.
- Kinde, B. A. (2012). Financial sustainability of microfinance institutions (MFIs) in Ethiopia. *European Journal of Business and Management*, 4(15), 1–10.
- Kipesha, E. F. (2013). Impact of size and age on firm performance: Evidences from microfinance institutions in Tanzania. *Research Journal of Finance and Accounting*, 4(5), 105–116.
- Kipesha, E. F., & Zhang, X. (2013). Sustainability, Profitability and Outreach Tradeoffs: Evidences from Microfinance Institutions in East Africa. *European Journal of Business and Management*, 5(8), 136–148.
- Kumar Kar, A. (2011). Microfinance institutions: A cross-country empirical investigation of outreach and sustainability. *Journal of Small Business & Entrepreneurship*, 24(3), 427–446.

- Kyereboah-Coleman, A., & Osei, K. A. (2008). Outreach and profitability of microfinance institutions: the role of governance. *Journal of Economic Studies*, 35(3), 236–248.
- Lafourcade, A.-L., Isern, J., Mwangi, P., & Brown, M. (2005). Overview of the outreach and financial performance of microfinance institutions in Africa. *Microfinance Information eXchange, Washington, DC*. http://www.mixmarket.org/medialibrary/mixmarket/Africa_Data_Study.pdf.
- Lenssen, G., Nijhof, A., Roger, L., Kievit, H., Dutta, P., & Das, D. (2014). Indian MFI at crossroads: sustainability perspective. *Corporate Governance*, 14(5), 728–748.
- Lian, J., Lai, X., Lin, Z., & Yao, F. (2002). Application of data mining and process knowledge discovery in sheet metal assembly dimensional variation diagnosis. *Journal of materials processing technology*, 129(1-3), 315–320.
- Manos, R., & Yaron, J. (2009). Key issues in assessing the performance of microfinance institutions. *Canadian Journal of Development Studies/Revue canadienne d'études du développement*, 29(1-2), 101–122.
- Mersland, R., & Strøm, R. Ø. (2008). Performance and trade-offs in microfinance organizations—does ownership matter? *Journal of International Development*, 20, 598–612.
- Mersland, R., & Strøm, R. Ø. (2009). Performance and governance in microfinance institutions. *Journal of Banking & Finance*, 33(4), 662–669.
- Mersland, R., & Strøm, R. Ø. (2010). Microfinance mission drift? *World development*, 38(1), 28–36.
- Meyer, J. (2019). Outreach and performance of microfinance institutions: the importance of portfolio yield. *Applied Economics*, 51(27), 2945–2962.
- Mia, M. A., Nasrin, S., & Cheng, Z. (2015). Quality, quantity and financial sustainability of microfinance: Does resource allocation matter? *Quality & Quantity*, 1-14.
- Millson, H. F. (2013). The Trade-Off Between Sustainability And Outreach: The Experience Of Commercial Microfinance Institutions.
- Mohsin, S., Bashir, M. F., & Bin Tariq, D. (2018). Outreach and Performance Analysis of Microfinance Banks in Pakistan. *Syed Mohsin, Malik Faheem Bashir, Yasir Bin Tariq, (2018) "Outreach and Performance Analysis of Microfinance Banks in Pakistan", Business and Economic Review*, 10(3), 1–28.
- Molyneux, P., & Thornton, J. (1992). Determinants of European bank profitability: A note. *Journal of Banking & Finance*, 16(6), 1173–1178.
- Morduch, J. (1999). The microfinance promise. *Journal of economic literature*, 1569–1614.
- Morduch, J. (2000). The microfinance schism. *World development*, 28(4), 617–629.
- Morduch, J. (2006). Smart subsidy for sustainable microfinance.
- Muhammad, S., Chen, Y., & Ahmad, H. (2019). The Impact of Social Outreach on the Financial Performance of Microfinance Providers in Pakistan.
- Nanayakkara, G. (2012). Measuring the performance of microfinancing institutions: a new approach. *South Asia Economic Journal*, 13(1), 85–104.
- Nasrin, S., Rasiyah, R., Baskaran, A., & Masud, M. M. (2018). What determines the financial performance of microfinance institutions in Bangladesh? a panel data analysis. *Quality & Quantity*, 52(3), 1409–1422.
- Nawaz, A. (2010). Issues in subsidies and sustainability of microfinance: An empirical investigation. *Working Papers CEB*, 10.
- Naz, F., Salim, S., Rehman, R. U., Ahmad, M. I., & Ali, R. (2019). Determinants of financial sustainability of microfinance institutions in Pakistan. *Управление*, 10(4).

- Ngo, T. V., Mullineux, A. W., & Ly, A. H. (2014). The impact of scale of operation on financial performance in microfinance. *Eurasian Economic Review*, 4(2), 177–198.
- Nurmakhanova, M., Kretzschmar, G., & Fedhila, H. (2015). Trade-off between financial sustainability and outreach of microfinance institutions. *Eurasian Economic Review*, 1-20.
- Nwachukwu, J. (2014). Interest Rates, Target Markets and Sustainability in Microfinance. *Oxford Development Studies*, 42(1), 86–110.
- Nyamsogoro, G. D. (2010). *Financial sustainability of rural microfinance institutions (MFIs) in Tanzania*. University of Greenwich.
- Okumu, L. J. (2007). *The microfinance industry in Uganda: sustainability, outreach and regulation*. Stellenbosch: University of Stellenbosch.
- Pasiouras, F., & Kosmidou, K. (2007). Factors influencing the profitability of domestic and foreign commercial banks in the European Union. *Research in International Business and Finance*, 21(2), 222–237.
- PMN. (2015). *Pakistan Microfinance Review*. Retrieved from <https://pmn.org.pk/pakistan-microfinance-review-2015/>
- PMN. (2016). *Pakistan Microfinance Review*. Retrieved from <https://pmn.org.pk/pakistan-microfinance-review-2016/>
- PMN. (2018). *Pakistan Microfinance Review*. Retrieved from <https://pmn.org.pk/pakistan-microfinance-review-2018/>
- Pollinger, J. J., Outhwaite, J., & Cordero-Guzmán, H. (2007). The question of sustainability for microfinance institutions. *Journal of Small Business Management*, 45(1), 23–41.
- Qayyum, A., & Ahmad, M. (2006). Efficiency and sustainability of micro finance.
- Quayes, S. (2015). Outreach and performance of microfinance institutions: a panel analysis. *Applied Economics*, 47(18), 1909–1925.
- Rahman, M. A., & Mazlan, A. R. (2014a). Determinants of financial sustainability of microfinance institutions in Bangladesh. *International Journal of Economics and Finance*, 6(9), 107.
- Rahman, M. A., & Mazlan, A. R. (2014b). Determinants of Financial Sustainability of Microfinance Institutions in Bangladesh. *International Journal of Economics and Finance*, 6(9), 107.
- Rahman, W., Luo, J., Hafeez, A., & Sun, T. (2015). A comprehensive review of microfinance impacts, sustainability and outreach.
- Rai, A. K., & Rai, S. (2012). Factors affecting financial sustainability of microfinance institutions. *Journal of Economics and Sustainable Development*, 3(6), 1–9.
- Rajan, R. G., & Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. *The journal of Finance*, 50(5), 1421–1460.
- Rao, K. R. M. (2014). Concepts And Measures of Outreach and Sustainability in Microfinance Institutions: A comprehensive literature review. *Research Journal of Finance and Accounting*, 5(21), 41–48.
- Report. (2015). Global Monitoring Report. *A WORLD BANK GROUP FLAGSHIP REPORT*, P:42.
- Rhyne, E. (1998). The yin and yang of microfinance: Reaching the poor and sustainability. *MicroBanking Bulletin*, 2(1), 6–8.
- Robinson, M. S. (2001). *The microfinance revolution: sustainable finance for the poor*: World Bank Publications.
- Roden, D. M., & Lewellen, W. G. (1995). Corporate capital structure decisions: evidence from leveraged buyouts. *Financial Management*, 76–87.

- Saad, M., Taib, H. M., & Bhuiyan, A. B. (2018). Remodeling Index for the Microfinance Institutional Sustainability: A Theoretical Review. *International Journal of Business and Tehnopreneurship*, 8(2), 137–140.
- Saad, M., Taib, H. M., & Bhuiyan, A. B. (2019). Re-Evaluating sustainability of Microfinance institutions by using TOPSIS. *Humanities & Social Sciences Reviews*, 7(2), 581–589.
- Saeed, M. S. (2014). Microfinance Activities and Factors Affecting the Growth of Microfinance in Developed & Developing Countries. *International Finance and Banking*, 1(1), 39.
- Saltelli, A. (2007). Composite indicators between analysis and advocacy. *Social Indicators Research*, 81(1), 65–77.
- SBP. (2011). *Strategic Framework for Sustainable Microfinance in Pakistan*. Retrieved from Microfinance Department: <https://www.findevgateway.org/sites/default/files/publications/files/mfg-en-paper-strategic-framework-for-sustainable-microfinance-in-pakistan-jan-2011.pdf>
- Schreiner, M. (2000). Ways donors can help the evolution of Microfinance organizations/comment. *Savings and Development*, 423–437.
- Shlens, J. (2010). A tutorial on principal component analysis, 2005. *Institute for Nonlinear Science, UCSD*.
- Syedah, A., Shan, E., Anum, B. S., Zeshan, A., & Kaleem, K. M. (2013). Budding issues in Microfinance sector of Pakistan. *Science International*, 25(4).
- Tchakoute-Tchuigoua, H., & Soumaré, I. (2019). The effect of loan approval decentralization on microfinance institutions' outreach and loan portfolio quality. *Journal of Business Research*, 94, 1–17.
- Tehulu, T. A. (2013). Determinants of Financial Sustainability of Microfinance Institutions in East Africa. *European Journal of Business and Management*, 5(17), 152–158.
- Townsend, R. M., & Yaron, J. (2001). The credit risk-contingency system of an Asian development bank. *Economic Perspectives-Federal Reserve Bank of Chicago*, 25(3), 31–48.
- Tucker, M., & Miles, G. (2004). Financial performance of microfinance institutions: A comparison to performance of regional commercial banks by geographic regions. *Journal of Microfinance/ESR Review*, 6(1), 41–54.
- Twaha, K., & Rashid, A. (2012). Exploring the determinants of the productivity of microfinance institutions in India. *Munich Personal RePEc Archive*.
- Vinelli, A. (2002). Financial sustainability in US microfinance organizations: Lessons from developing countries. *Replicating Microfinance in the United States, Washington DC, 2002*, 137–165.
- Von Pischke, J. (2007). Methodenstreit and sustainability in microfinance: Generalizations describing institutional frameworks *What's Wrong with Microfinance?* (Vol. 137, pp. 137-148): Practical Action Publishing in association with GSE Research.
- Von Stauffenberg, D., Jansson, T., Kenyon, N., & Barluenga-Badiola, M.-C. (2003). Performance Indicators for Microfinance Institutions. Technical Guide. *MicroRate and Inter-American Development Bank, 3rd Edition*, 51p.
- Wahid, A. (1994). The Grameen Bank and poverty alleviation in Bangladesh. *American Journal of Economics and Sociology*, 53(1), 1–15.
- Wald, J. K. (1999). How firm characteristics affect capital structure: an international comparison. *Journal of Financial Research*, 22(2), 161–187.
- Wijesiri, M., Yaron, J., & Meoli, M. (2017). Assessing the financial and outreach efficiency of microfinance institutions: Do age and size matter? *Journal of Multinational Financial Management*, 40, 63–76.
- Yaron, J. (1992). *Successful rural finance institutions*. Retrieved from

- Yaron, J. (1994). What makes rural finance institutions successful? *The World Bank Research Observer*, 9(1), 49-70.
- Yimga, J. (2015). The Impact of High Microfinance Growth on Loan Portfolio. *Journal of International Development*.
- Zeller, M., & Meyer, R. L. (2002). *The triangle of microfinance: Financial sustainability, outreach, and impact*: Intl Food Policy Res Inst.
- Zopounidis, C., & Kosmidou, K. (2008). The determinants of banks' profits in Greece during the period of EU financial integration. *Managerial Finance*, 34(3), 146–159.

CHAPTER 10

AN ARTIFICIAL INTELLIGENCE-BASED ISLAMIC FINTECH MODEL ON QARDH-AL-HASAN FOR COVID 19 AFFECTED SMEs

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Abstract

The rapid spread of Corona virus 19 (COVID 19) and its associated economic impact has again turned the spotlight on Islamic finance and banking to save the world from its economic consequences. Islamic finance by principle is an ethical finance which intends to help the poor and vulnerable under crisis. It has various financial tools like, *Zakat*, *Sadaqa*, *Awaqaf* and *Qardh-Al-Hasan*, especially designed for this purpose. Among various tools of Islamic finance, *Qardh-Al-Hasan* has emerged as the most viable Islamic finance weapon in the fight against the economic consequences of crises like COVID 19 and financial meltdowns. Against such a backdrop, the present chapter explores the possibility how *Qardh-Al-Hasan* can be used as an Islamic finance tool to help the COVID 19 affected SMEs and individuals. The present study is exploratory in nature as it explores the possibility of *Qardh-Al-Hasan* as the landscape in fighting the economic impact of Covid-19 on small businesses and individuals. The study proposes an Artificial Intelligence-based FinTech model to provide a solution for the affected SMEs and individuals to fight the economic consequences of this pandemic and survive. The findings of the chapter suggest that *Qardh-Al-Hasan* is a beautiful selfless financial service in Islamic finance which must be used in combination with Fintech like Artificial Intelligence to save the poor and affected SMEs from this pandemic.

Keywords: Artificial intelligence, COVID 19, economic effect, FinTech, Islamic finance, SME

1. Introduction

The coronavirus pandemic (COVID 19) continues to take its toll on each section of society. Be it small businesses, large corporates, or private individuals, everybody is being affected and it is almost impossible to measure the economic impact of this pandemic on society. As of 01/07/2020, 3AM GMT there have been more than 10.5 million confirmed cases and more than 500,000 reported deaths around the world. As the countries and the World Health Organisation (WHO) continues to scramble to contain the virus, the economic impact of the pandemic is rising with every second. There is a need for immediate action to be taken to minimise the disruptions on the poor, vulnerable and small business owners. There is a solution available in the form of information technology and Islamic finance. If Islamic finance is combined with technology, the SMEs can be saved (Fink, 1998; Haider et. al., 2020). Information-based technologies are the best bet to bring new corporate strategies and help in the growth of Small and Medium Enterprises (Nieto & Fernandez, 2005). Islamic financial services combined with technology can bring more stability and sustainability (Cihak & Hesse, 2010; Pappas et. al., 2017).

The economic impact of COVID-19 in just 4 months is higher than the global financial crisis, which lasted for about 3 years, indicating that it will have a very long-lasting effect on the world economy, and it may take years to recover from this pandemic. The biggest demand the SMEs would have from the government is to delay the EMI payments on their loan and wave off the interest and not to declare them as NPA. The banks should give them more time and treat them as a normal customer. In this case, the role of Islamic finance becomes extremely important as for this reason, Islamic finance treats interest as a haram commodity and one of the financing methods known as *Qardh-Al-Hasan* (benevolent loan) can be applied to help these SMEs recover from this pandemic. *Qardh-Al-Hasan* is an interest-free loan which is extended by the lender to the borrower and therefore is not contaminated in any way by *riba*.

Sources of fund as QH for SMEs: There are various sources of funds to be advanced by governments, Islamic banks and other charitable institutions as QH to the needy SMEs. The most important source of funding could be the 'charitable fund' held by these institutions as these funds are non-Zakat funds and can be advanced as QH. Usmani (2008) further states that in the case of noncompliance of a Murabaha contract, the client pays a specific amount to the bank as charity. However, the bank must guarantee that it will not use this fund as income from operations and will not use it for any other purpose than charity. After approval from the sharia board the same fund can be used by the bank to advance a QH loan to the SME for fighting this pandemic.

Other sources of funds: Islamic banks and IFI can use the reserve capital of these institutions to finance the urgent need of SMEs. As this is a temporary phenomenon and loans needed by the SMEs are in very small quantity, it will not affect their liquidity. (Saqib 2011) supports this idea for the application of this method and states that it can be applied for giving QH loans to the farmers in need.

Most importantly, the governments in Islamic countries have already announced various economic stimulus packages to negate the adverse effect of this global pandemic. For example, Saudi Arabia has announced \$32 Billion as a stimulus package while Bahrain and UAE have announced packages worth \$4.2 Billion and \$70 Billion respectively. In summary, as of now the governments of GCC countries alone have announced stimulus packages worth more than \$120 Billion (FCCIB 2020). As specified by the respective government departments, these packages will be used for different purposes to support the different sections of the economy based on their need. Therefore, particular sums of money must be allocated by the governments from these stimulus packages to support the SMEs by advancing QH loans either directly or through the Islamic Banks and IFIs. This can prove to be a vital source of finance to support the COVID-19 affected SMEs. It will also bring many benefits to the governments, as the governments could well have the expectation of receiving the principal amount in future. It will not be considered as pure charity like pay and forget.

The core principle of Islamic finance lies in achieving the objective of social justice, inclusion, removal of income inequality and fair and equitable mobilisation and distribution of resources (Rabbani & Khan, 2020b). The key characteristics of Qardh-Al-Hasan as a financing tool for the removal of poverty and financial inclusion are summarised as follows-

1. The primary objective of the Qardh-Al-Hasan is to help poor and affected people to get on their feet and restore their previous position in the least expensive and the most dignified way (Demirguc et.al., 2018). The proposed model can help achieve this objective by linking these people with technology and achieving the objective of inclusion.
2. Qardh-Al-Hasan is the benevolent loan with no expectation of any return and principal repayment also depends on the financial condition of the borrower. The lender will forego the demand to repay the principal amount if despite the best efforts the borrower is not able to pay (Zauro et. al., 2016).
3. The intention of the lender is purely benevolent in the case of a Qardh-Al-Hasan loan as being a Muslim, the belief is that Allah the Almighty is the best to give reward. If not now, then Allah will give the reward on the day of judgement.

4. With the use of Qardh-Al-Hasan, the harmony and cooperation between the rich and poor can be enhanced which in turn would help in the creation of a more caring, cooperative, empathetic and collaborative society.
5. With situations like COVID-19 and the Financial crisis, QH loans can be used more effectively to create job opportunities for the poor leading to the eradication of poverty from them.
6. Finally, the proposed Artificial intelligence based FinTech model can serve as a tool for poverty alleviation and increasing social and financial inclusion. By extending credit to the poor and affected due to the pandemic, they can be brought to the formal financial sector as they will get access to other financial services. Also they will be better integrated and included in society.

The present study is divided into two parts. The first part looks at the possible economic impact of the virus on small businesses and how *Qardh-Al-Hasan*, an Islamic finance tool combined with Artificial Intelligence-based financial technology can help to fight and restore the SMEs. The second part proposes an Islamic FinTech on *Qardh-Al-Hasan* based on Artificial Intelligence and NLP dedicated to Small and Medium Enterprises (SMEs).

2. Literature Review

Small and Medium Enterprises (SMEs) are the backbone of any economic system. This segment needs to be carefully handled because the people associated with it do not have multiple sources of income like corporates. Also, SMEs are important in terms of contribution to the GDP, job creation and the economic development of a country (Ayyagari et al., 2003; Rabbani & Khan, 2020b). Taking care of the needs of small and medium enterprises is essential to boost the economic development of both developed and developing countries. It not only contributes massively to the GDP of the country and job creation, but it also plays a dominant role in the overall wellbeing of the people (Sa'ad & Pitchay, 2020). SMEs represent about 90% of the total businesses and 50% of the total workforce worldwide and it contributes to around 40% of the global GDP (WorldBank, 2020). These numbers could be much higher if informal sector SMEs are also included. In Islamic countries, SMEs have even greater importance and contribute more heavily towards GDP and job creation.

In Islamic countries, there are 53.2 SMEs per 1000 population in comparison to the global average of 25.2 SMEs per 1000 population (IDB, 2020). The SMEs sector is in urgent need of finance due to the great economic downturn; the local and global demand has almost become zero due to the sharp decline in disposable income, travel restrictions, lockdowns in most countries and the halt in the supply chains due to global restrictions. Small and medium

enterprises are playing a dominant role in the development of every economy irrespective of the stage of development. Whether it is a developing or a developed economy, the contribution of SMEs cannot be overlooked. When it comes to developing economies, the role of SMEs increases manifold in the creation of jobs and contribution to the GDP. Therefore the SMEs segment is rightly regarded as the engine of growth in these countries (Man et. al., 2002). The history of economic development is replete with evidence suggesting that the overall development along with the equal distribution of wealth with social justice can only be achieved with a good contribution from SMEs (Abdullah & Owolabi, 2015). However, due to the economic impact of COVID-19, SMEs are struggling for survival. They need to be saved by at least helping them meet necessary expenses like salaries, wages, rent, electricity bills and other expenses. One way for SMEs to survive would be to cut their expenses by laying off the employees. However, it will only worsen the situation as many eminent economists have already warned that there might be over 25 million job losses due to this pandemic (UN, 2020).

Governments all around the world acknowledge the importance of SMEs for the development of their respective countries and for that matter many countries have already announced stimulus packages to bail them out of this situation. If the present situation is not handled properly, it will be a long road to recovery and will result in large scale bankruptcies and massive unemployment. Governments have their own limitations and every government does not have the luxury of reserve funds like USA, Saudi Arabia, Kuwait or Bahrain. Social organisations and NGOs must come forward along with governments to fight this pandemic and help this important section of our economic society to recover and gain lost ground. *Qardh-Al-Hasan* is one such tool in Islamic finance which has the potential to empower the needy SME sector and help them in this pandemic (Selim & Hassan, 2020). Islamic finance is not just a financial system, rather it works on the religious beliefs of honesty, integrity and ethics. Religious beliefs and Islamic work ethics do affect the success or failure of SMEs (Uygur, 2009).

Theories of *Qard Al-Hasan*: The word *Qard Al-Hasan* is an Arabic word which is a combination of two words- *Qard* and *Hasan* which literally mean ‘loan’ and ‘beautiful’ respectively. It is the financing arrangement where one party gives his fungible property to another party to receive the same fungible property back without any addition. It is also defined as the Islamic loan without expectation of any interest from the borrower. *Qardh-Al-Hasan* financing is a traditional financing method in Islamic finance, and it has its relevance even today in the modern world and if applied properly it can help the SME sector in fighting

this pandemic. Allah mentioned *Qardh-Al-Hasan* on six occasions in the holy Quran (Q2:245, Q5:12, Q57:11, Q57:18, Q64:17, Q73:20). On one of the occasions, Allah says that (*Surah Al-Baqarah*, verse No. 245) *Qardh-Al-Hasan* is a beautiful tool in Islamic finance that can be included in monetary policy to eradicate poverty and help the poor (Mishkin, 2009; Selim & Hassan, 2020).

“Who is it that would loan Allah a goodly loan so He may multiply it for him many times over? And it is Allah who withholds and grants abundance, and to Him you will be returned”.

If we try and interpret all these verses from the Quran and Hadith, it can be described as the QH means lending money to another person/organisation without interest or an increase in the value. It is promised by Allah that you will get the reward credited to your account in multiple of the amount lent on the day of judgment. On every occasion, the word “Kaseera” is used, which means ‘many’ in English. When Allah says many there is no limit to his “Rahmah”.

As narrated by Abu Huraira, the beloved Prophet Muhammad ﷺ has said. (Sahih Bukhari, Hadith No. 579)

“Whoever takes the money of the people with the intention of repaying it, Allah will repay it on his behalf, and whoever takes it in order to destroy it, then Allah will destroy him.”

Explanation: The intentions are very important in Islam. If you lend or borrow money with the right kind of intentions, Allah will give you the reward. Don’t expect everything in this world, there is a world after this world and that is more important. Allah is the best to judge what is good for you and he will of course do the best for you.

QH, as practised by the Holy Prophet Muhammad ﷺ, is the informal loan given by the lender to the borrower who is in need of money for charitable purposes. The borrower should not use it as a source of profit otherwise it will violate the basic purpose of QH i.e. to help each other.

(Mohammad Taqi Usmani, 2008) states that the lender can only have the claim on the amount lent or the principal without expectation of any profit from it (Cihak & Hesse, 2010).

Recovery of QH Loan: *Qardh-Al-Hasan* is a gratuitous loan advanced to the person in need for a specified period of time. After the expiry of the period the borrower has to return the amount to the lender the face value of the loan (*asl-al-qardh*). In other words, as per the principles of sharia the lender should not accept any excess amount as it can result in *riba*. However, an excess amount can be given by the borrower as *Hiba* (gift). There can be a

serious problem in the recovery of Qardh-Al-Hasan loans, when the borrower is not able to repay the loan on the due date the lender cannot reschedule the loan repayment. It is to be mentioned here that if the lender reschedules the QH loan without an increase in the principal amount it is not unacceptable to the injunction of sharia (Zafar et. al.,2015). The sharia advises the creditor to ease up the payment terms and due date until the debtor is in a comfortable position to repay the loan. If the debtor is still unable to repay the loan, then the amount of loan is considered as charity. Now, the concern is that dishonest SME owners can use it to their own benefit and avoid repaying QH loans as they know that they are not legally bound to repay the principal amount of loan. In this case, the guidelines by the Holy Prophet should be used for the recovery of a QH loan. Abu-Huraira (Sahih-Al-Bukhari No. 580) narrates:

The holy Prophet once looked at the Mountain of Uhud and said that, If the whole of mountain turns into gold, I would not keep even a single Dinar for more than 3 days except the amount, I have to repay my debt.

Following the above Hadith, if the SME doesn't repay the debt intentionally, it is subjected to harsh punishment. However, those SMEs who are actually not in a position to repay must be duly taken care of, as it is the duty of the Islamic state to safeguard the interest of the poor and needy. People need to be educated more on the need to repay their loan as soon as possible as the Prophet once said-

“Best among the people is one who pays his loan in a handsome manner”

In Summary, with Covid-19 being a pandemic with varied negative consequences, relaxation must be given to the borrowers as per the rules laid down by the sharia. In addition, QH loans should be classified into long-term and medium-term loans and the due dates should be fixed accordingly. It is recommended that the maximum duration for a loan should be from 6 years to nine years. The short-term and medium-term loans should be provided to the SMEs which have small capital requirements whereas long term loans should be provided to the SMEs with large capital needs after due verification.

3. Proposed System and Methodology

Artificial Intelligence has been the conversation piece among computer scientists and non-IT people since the early stage of computer inventions. The history of Artificial Intelligence as an academic discipline can be traced back to 1955. Although not a very successful academic discipline back then, inventors have been trying since (Russell & Norvig, 2003). The overwhelming results of those efforts have been seen in the last couple of

decades. As computing power has increased, the intelligence capability of computing machines has also increased. A machine is considered intelligent if it can learn from the experience and from its environment and improve the likelihood of achieving its objectives or completing its tasks successfully (Russell & Norvig, 2003; Poole et. al., 1998). At the present time, the use of artificial intelligence can be found in a variety of tasks such as the automated translation of one spoken language text to another spoken language text (Khan & Mishra, 2011; Shahnawaz, 2019), understanding the sentiments and opinions of internet users through their social media posts and reviews posted on different e-commerce websites or on micro-blogging platforms (Shahnawaz & Mishra, 2017), automated conversation responsive bots for customer services (Khan & Rabbani, 2020), Blockchain (Rabbani, 2020a), Fintech, self-driving cars, improving machine translation outputs (Shahnawaz & Mishra, 2013, Khan et. al., 2018) and many more. AI machines use a variety of algorithms to successfully complete their tasks or achieve their objectives. These algorithms are developed using a variety of approaches such as case-based reasoning, artificial neural network, statistical approaches, rule-based approaches and many more techniques (Shahnawaz & Mishra, 2015).

The proposed Qard Al-Hasan Lending (QAL) model (see figure 1) uses artificial intelligence and its subfield machine learning and natural language processing to develop a Fintech model for bringing together a small and medium enterprise (SME) (borrower) which is going through bad financial times because of the external factors arisen after a natural disaster such as flood or a pandemic like COVID-19 or riots etc. and a person or investor who is willing to help (lender). The proposed model is compliant with Islamic principles and follows sharia law in its implementation. As discussed earlier, *Qardh-Al-Hasan* is a way of helping needy people or small businesses (borrowers of the funds) in which the lender does not need any guarantee or contract or benefit from the borrowers. However, as per Sharia law, it is mandatory that both the borrowers and the lenders shall follow Islamic principles, the borrower shall utilise the borrowed funds as per sharia law and the lenders shall also ensure that those funds are earned through permissible means as per Islamic principles.

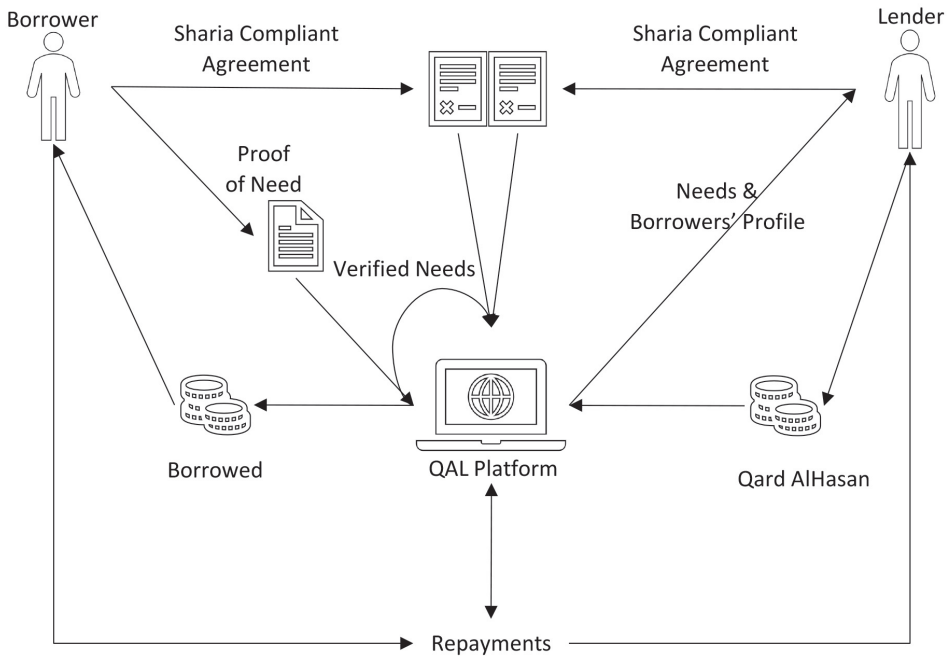


Figure 1. Qard AlHasan Lending Model

The QAL Islamic Fintech model uses natural language processing and a machine learning-based recommender system for recommending the interested profiles to the borrowers and lenders. These recommendations are generated with the help of a machine learning and natural language processing-based automated recommendation system. Natural language processing (NLP) is the subfield of computer science which is used to process the natural language (such as English) text. Some of the application areas of natural language processing are machine translation (Khan & Usman, 2019), sentiment analysis (Shahnawaz & Astya, 2017), conversational chatbots (Khan & Rabbani, 2020), etc. The most popular recommender systems are the ones used in recommending music and videos on websites such as YouTube, Netflix or on the recommender services on e-commerce websites such as Amazon, recommendation service or content recommendation services on social media platforms such as Facebook, etc.

The QAL Islamic Fintech model uses a recommender system for recommending the profiles and projects of the potential parties who need each other. The recommender system analyses the interest areas provided by the lenders and the verified proof of needs submitted by the borrowers. On analysis, the system generates a ranked list of recommendations. These recommendations are ranked based on similarity indexes. The higher the similarity index, the

higher the rank of the recommendation. Ranks of the recommendations are calculated automatically by using machine learning and natural language processing based on various factors such as the interests of the lenders and borrowers, the features and types of project and the amount of funds, etc. The rank is not a static number and is calculated separately for each user. For example, a lender may rank higher in one borrower's list and lower on another borrower's list because of the type of project, interests and the amount of funds and a few other contributing factors. The same analogy applies to the borrowers. A borrower might appear on the top of the recommendation list for one lender and on the bottom of the recommendation list for another lender based on the similarities between the two profiles. Apart from these lists, users can also search and browse to find suitable profiles to connect with. The recommender system generates separate lists for the borrowers and the lenders and each user can access these recommendations for their further actions. The lenders use these profiles to select the borrowers which match with their interests while borrowers use these recommendations to see the potential lenders and may communicate with them to provide more details if the lenders need to be satisfied before providing any funds.

One of the most important conditions to use QAL model is to agree to the Sharia rules and principles. The users can register with the platform only if they agree to utilise the services as per Islamic principles. When a borrower user raises a request for the need of funds, the user will have to provide proof why he/she requires funds. In addition, the user will have to mention specifically if the funds raised will be utilised as per sharia principles. All the submitted proof will be verified to make sure that everything is as per Islamic principles. Once the request is approved by the QAL platform, it is made visible to other users who are willing to help (lenders). Lenders can set their preferences for the type of help they are interested in such as helping a business that has been badly hit because of the crisis such as COVID-19 or because of communal riots or natural disasters such as floods etc. Borrowers also have the option to create their own interest fields which are verified by the QAL system if they are legitimate and conform to Sharia law. The proposed system uses natural language processing and machine learning in understanding the semantic behind the interests of the lenders and recommends the profiles and lists of the needs accordingly. Once the lender is satisfied with the claims made by the borrower, he/she can agree to transfer the funds. However, the lenders also have to declare that the funds have been earned through means which are permissible as per sharia law. The QAL records the transactions and saves it for future use. It can be used as an authentic reference for verifying details such as the date of repayment.

The QAL platform has three primary modules that are needed; the verification module, the recommender system and the transaction & communication manager. The functions of these modules are described below:

Need verification Module: This module is responsible for verifying the borrower's needs and provides the result in one of three categories; valid, invalid and incomplete. The Need verification module uses the sharia-compliant agreement, proof of need submitted by the borrower and the borrower's profile as input to the system. It collects and processes all the input to provide a decision on the need. The sharia-compliant agreement is verified if the user has agreed to all the terms and conditions and is willing to comply as per the Islamic financial principles. If there are any discrepancies and the user does not agree with all the rules mentioned in the agreement, his/her application is rejected without any further processing. The borrower's profile is updated after a decision on each of the requests. Every invalid request made by the borrower decreases the credibility of the borrower. The credibility score is displayed as an integral part of the borrower's profile and is used as an important criterion for funding by the lender. The textual proofs submitted by the borrower are processed using AI and NLP. Key phrases recognition and descriptive analysis are done using machine learning and NLP techniques. The system categorises the need request into valid, invalid or incomplete categories. If the system identifies any request which contains business activities that are not sharia-compliant it automatically categorises the request as invalid and it is not processed further. However, the valid requests are reviewed by the QAL agent to make a final decision about the borrower's need or if further information is required the need requests are categorised as incomplete.

Recommender System: Recommender systems are a type of information filtering system. They are commonly used in commercial applications for recommending the items that a user might like. QAL system uses a recommender system module to recommend the list of the relevant lenders to the borrowers and to recommend the list of the relevant borrowers and their projects/needs to the lenders. These recommendations are generated based on the preferences for needs/projects set by the lenders primarily. This module analyses the projects/needs liked by the lenders or related browsing history on the QAL platform. Key phrases and other patterns recognised by the need verification module are also used by the recommender system to generate the list of the possible recommendations. The recommender system module also uses the information recorded by the transaction & communication manager for generating the recommendation list. The generated list of recommendations is organised based on the similarity of the interests and credibility of the borrower. If two or more items

in the list have the same similarity index, then the profile/item that has a high credibility score is ranked higher. The recommender system module is also used to recommend the list of lenders to the borrower as well.

Transaction & Communication Manager: The Transaction & communication manager module manages and records all the transactions and communications on the QAL platform. When a borrower is interested or willing to collaborate with a lender, he can directly send a request for collaboration to the lender. The lender can accept or reject the request. The rejected collaboration requests decrease the rank in the recommendation lists for each other (the lender and the borrower). On successful collaboration between the lender and the borrower, this module records this as a transaction and generates a unique code for the collaboration. All the information of any further communication and/or financial transactions are linked to this unique code. The lender and the borrower can set up the terms and conditions of the collaborations and store them using the collaboration code. These terms and conditions are useful for resolving any future conflict between the collaborating parties and also serve as reminders in case any time-based conditions have been agreed between them. For example, if the lender agrees that he/she will provide the funds on a specific date, then the lender will be notified by the transaction & communication manager. This also applies to the borrowers as well. For example, if the borrower has agreed to return a specific amount from *Qardh-al-Hasan* on a specific date then this module will send a reminder to the borrower in advance. However, these can be configured based on user preferences. Thus, the QAL records the transactions and saves them for future use such as knowing when the borrower is going to pay. In this way, it can be used as an authentic reference.

4. Results and Discussion

Due to Covid-19, unemployment rates are increasing very rapidly across the globe. This is primarily because businesses are shutting down or at least scaling down their operations. Small and medium enterprises, which are the largest employer, have been hit the hardest. As most of these SMEs run with limited funds and rely on regular cashflows, these businesses are affected the most by the pandemic and subsequent lockdown. SMEs are confronted with the problem of crippled cash flows and a shortage of credit and manpower. Many of these organisations are in urgent need of funds for their survival and to restore their operations back to normality. However in most cases, the normal loan processing takes time and on top of it, many SMEs are not in a condition that they can be given a loan by the financial institutions. Therefore, the proposed *Qard Al-Hasan* model is a silver lining for these dying SMEs.

The proposed model does not add any additional financial burden on the organisation and helps them to raise an interest free loan. Another advantage of the *Qard Al-Hasan* is that there is no fixed monthly payment unlike a normal loan. In a normal loan system, the borrower has to pay monthly instalments (mostly) along with interest which is an additional burden on the borrower. Many borrowers, individuals or business enterprises are not able to bear this burden which ultimately ruins them. To overcome this kind of situation, the *Qardh-Al-Hasan* model will prove to be very useful as it will help the crisis hit organisations to raise funds without interest and without putting any additional regular burden on the organisation. The QAL model brings together needy borrowers and lenders who are willing to help without any strings attached. The proposed artificial intelligence, machine learning and natural language processing based Islamic FinTech model will prove to be a landmark for social and sustainable finance in fighting the adverse effects of a crisis like COVID-19 on small and medium businesses.

5. Conclusion and Future Work

Fintech solutions have become an inseparable part of our lives. There has been an increment of 70% in usage of the FinTech apps during the COVID-19 crisis. The impact of this sort of crisis would be seen for a longer period. Small and medium scale enterprises and poor individuals are the most affected mainly because of the type of business processes and cash flows which almost freeze in these kind of circumstances. However, Islamic finance has many noble and practical solutions to combat crises like COVID-19. *Qardh-Al-Hasan* is one such beautiful concept in Islamic finance. Despite the huge potential of *Qardh-Al-Hasan* to help the poor and vulnerable sections of society, it has remained under used when compared to the other financing methods in Islamic finance. There are many individuals and SMEs affected by COVID 19 who are either not eligible to receive Zakat or they don't want to receive Zakat due to other reasons. *Qardh-Al-Hasan* can solve the problems of such individuals and SMEs without laying any additional financial burden on them (Hassan & Ashraf, 2010). This *Qardh-Al-Hasan* can be given by Islamic banks, rich individuals, governments and private organisations. To make *Qardh-Al-Hasan* a success in the present scenario of social distancing, we have proposed an AI based Fintech model which can prove to be a revolutionary solution for resolving the financial crisis of SMEs and poor individuals. Researchers are working in the direction to further improve the proposed system and also to include the poor and needy people as borrowers who are the primary victims of any crisis arising out of natural disasters, pandemics, riots or wars. The future work will be in the direction of extending the model by inclusion of Zakat along with *Qardh-Al-Hasan* to support and uplift the victims of the crisis more effectively.

References

- Abdullah, M. A., & Owolabi, Y. M. B. (2015). *Small and medium enterprises in Muslim countries*. IIUM Press.
- Ayyagari, M., Demirgüç-Kunt, A., & Beck, T. (2003). *Small and medium enterprises across the globe: a new database*. The World Bank.
- Čihák, M., & Hesse, H. (2010). Islamic banks and financial stability: An empirical analysis. *Journal of Financial Services Research*, 38(2-3), 95–113.
- Demirguc-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). *The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution*. The World Bank.
- FCCIB (2020). Gulf countries pledge over \$120bn stimulus to combat corona fallout. <https://www.fccib.net/news/n/news/gulf-countries-pledge-over-120bn-stimulus-to-combat-corona-fallout.html>. Accessed on 05/04/2020.
- Fink, D. (1998). Guidelines for the successful adoption of information technology in small and medium enterprises. *International Journal of Information Management*, 18(4), 243–253.
- Haider, M., Khan, S., Rabbani, M. R., & Thallasinos, Y.E. (2020). An Artificial Intelligence and NLP based Islamic FinTech Model Combining Zakat and Qardh-Al-Hasan for Countering the Adverse Impact of COVID-19 on SMEs and Individuals. *International Journal of Economics and Business Administration*, 8(2), 348–361.
- Hassan, M. K., & Ashraf, A. (2010). An integrated poverty alleviation model combining zakat, awqaf and micro-finance. In *Seventh International Conference–The Tawhidic Epistemology: Zakat and Waqf Economy, Bangi, Malaysia* (pp. 261-281).
- Islamic Development Bank (2020). President of the Islamic Development Bank Group: Covid-19 and Micro, Small and Medium Enterprises, Saving the Global Economy from the Pandemic: Available at; <https://www.isdb.org/news/president-of-the-islamic-development-bank-group-covid-19-and-micro-small-and-medium-enterprises-saving-the-global-economy-from-the-pandemic>. Accessed on 4 April, 2020.
- Khan, S. and Rabbani, M.R., (2020a), Artificial Intelligence and NLP based Chatbot as Islamic Banking and Finance Expert, *International Journal of Information Retrieval Research (IJIRR), Special Issue On: Optimization and Convergence of Machine Learning Algorithms for Leveraging IoT, Block chain and Artificial Intelligence*.
- Khan, S. N., & Usman, I. (2019). A model for English to Urdu and Hindi machine translation system using translation rules and artificial neural network. *The International Arab Journal of Information Technology*, 16(1), 125–131.
- Khan, S., & Mishra, R. B. (2011). Translation rules and ANN based model for English to Urdu machine translation. *INFOCOMP*, 10(3), 36–47.
- Khan, S., Mir, U., Shreem, S. S., & Alamri, S. (2018). Translation Divergence Patterns Handling in English to Urdu Machine Translation. *International Journal on Artificial Intelligence Tools*, 27(05).
- Man, T. W., Lau, T., & Chan, K. F. (2002). The competitiveness of small and medium enterprises: A conceptualization with focus on entrepreneurial competencies. *Journal of Business Venturing*, 17(2), 123–142.
- Mishkin, F. S. (2009). Is monetary policy effective during financial crises? *American Economic Review*, 99(2), 573–77.
- Nieto, M. J., & Fernández, Z. (2005). The role of information technology in corporate strategy of small and medium enterprises. *Journal of International Entrepreneurship*, 3(4), 251–262.
- Pappas, V., Ongena, S., Izzeldin, M., & Fuentès, A. M. (2017). A survival analysis of Islamic and conventional banks. *Journal of Financial Services Research*, 51(2), 221–256.

- Poole, D., Mackworth, A., & Goebel, R. (1998). *Computational Intelligence: A Logical Approach*. New York: Oxford University Press. ISBN 978-0-19-510270-3.
- Rabbani, M. R. (2020a). The competitive structure and strategic positioning of commercial banks in Saudi Arabia. *International Journal on Emerging Technologies*, 11(3), 43–46.
- Rabbani, M. R., & Khan, S. (2020b). FinTech, Blockchain and Islamic Finance: An Extensive Literature Review. *International Journal of Economics and Business Administration*, 8(2).
- Russell, S. J., & Norvig, P. (2003). *Artificial Intelligence: A Modern Approach (2nd ed.)*, Upper Saddle River, New Jersey: Prentice Hall, ISBN 0-13-790395-2.
- Sa'ad, A. A., & Pitchay, A. B. A. (2020). Financing SMEs Through the Islamic Qard al-Hasan: A Proposal of Islamic FinTech Interest-Free Lending for Government Initiatives. In *Impact of Financial Technology (FinTech) on Islamic Finance and Financial Stability* (pp. 54-64). IGI Global.
- Selim, M., & Hassan, M. K. (2020). Qard-al-Hasan-based monetary policy and the role of the central bank as the lender of last resort. *Journal of Islamic Accounting and Business Research*.
- Shahnawaz, K. & Astya, P. (2017). Sentiment analysis: Approaches and open issues. *2017 International Conference on Computing, Communication and Automation (ICCCA)*, Greater Noida, 2017, pp. 154–158. doi: 10.1109/CCAA.2017.8229791.
- Shahnawaz, K. & Mishra, R. B. (2013). Rule-based approach for handling of case markers in English to Urdu/Hindi translation. *International Journal of Knowledge Engineering and Soft Data Paradigms*, 4(2), 138–165., Inderscience Publishers, doi: 10.1504/ijkesdp.2013.058128
- Shahnawaz K., & Mishra, R. B. (2015). An English to Urdu translation model based on CBR, ANN and translation rules. *International Journal of Advanced Intelligence Paradigms*, 7(1), 1–23.
- Shahnawaz, M. R. (2011). ANN and rule-based model for English to Urdu-Hindi machine translation system. In *Proceedings of National Conference on Artificial Intelligence and agents: Theory & Application (AIATA 2011)* (pp. 115-121).
- UN(2020). Coronavirus pandemic: UN report claims nearly 25 million jobs could be lost worldwide: Available at; <https://www.msn.com/en-in/money/news/about-25-million-jobs-could-be-lost-worldwide-due-to-coronavirus-warns-un/ar-BB11oX20>; Accessed on 4 April, 2020.
- Usmani, M. T. (2008). *An Introduction to Islamic Financial System*, Maktaba Maariful Qurān, Karachi, pp. 10-221.
- Uygur, S. (2009). The Islamic work ethic and the emergence of Turkish SME owner-managers. *Journal of Business Ethics*, 88(1), 211–225.
- Worldbank (2020). Small and Medium Enterprises Finance. Available at; <https://www.worldbank.org/en/topic/sme/finance>; Accessed on 4 April, 2020.
- Zafar, M. A., Khan, K., Roberts, K. W., & Zafar, A. M. (2015). Local agricultural financing and Islamic banks: is Qard-al-Hassan a possible solution? *Journal of Islamic Accounting and Business Research*.
- Zauro, N. A., Saad, R. A. J., & Sawandi, N. (2016). The moderating effects of financial inclusion on Qardhul Hassan financing acceptance in Nigeria: a proposed framework. *International Journal of Economics and Financial Issues*, 6(7S).

