Financial Innovation and Engineering in Islamic Financial Institutions

SAMIR ALAMAD

Doctor of Philosophy

ASTON UNIVERSITY
December 2015

Thesis Summary

Drawing from work found in the financial innovation literature, the main objective of this research is to explore the effect of religious orientation towards financial innovation and engineering in Islamic Financial Institutions (IFIs). The research also examines what constitutes this religious orientation and how it is enacted in the innovation process. Religious orientation towards financial innovation is conceptualised and defined, as a system, in this research study. In order to achieve this objective, the study employs multiple theoretical perspectives to develop its theoretical framework. It combines innovation orientation theory with the theory on boundary objects to explore the role of religion in the financial innovation processes in IFIs. Religious orientation towards financial innovation and the role of Shariah as a shared boundary object is portrayed as a multidimensional knowledge and philosophical structure. This qualitative study provides two important theoretical contributions to existing theories in the innovation literature. First, it extends the existing literature of innovation orientation to a completely new field and construct that is based on a religious imperative as a framework within which financial innovation is constrained. It explains how an innovation orientation in IFIs can be directed within religious rules, which indicates that innovation orientation in IFIs is a learning philosophy. Second, the research introduces and examines the plasticity of Shariah as a shared boundary object and its dynamic role in managing tension and conflicting values in the financial innovation process. Furthermore, building on the empirical results, the study illustrates the insights that each theoretical lens affords into practices of collaboration and develops a novel analytical framework for understanding religious orientation towards financial innovation. This practical contribution, of the developed framework, could form the basis for a standardised framework for the Islamic finance industry. The study concludes by noting the policy and managerial implications of its findings and provides directions for further research.

Keywords: Innovation, Religious Orientation, Shariah, Boundary Objects, Islamic Banking and Finance.

Dedication

I dedicate this academic work to God almighty, then my family, my mother and my late father who always encouraged me and to those who seek knowledge.

Acknowledgement

My deepest gratitude goes to Almighty God for His countless and continuous blessings on me, who guides me in every part of my life, including this PhD process. Without His help, protection and *tawfeeq*, I would not be able to accomplish my goals in this amazing learning process.

I am deeply grateful to my wonderful supervisory team Dr. Nunung Nurul Hidayah, Professor Alan Lowe, Professor Andrew Mullineux and also Professor Omneya Abdelsalam, who partially supervised my research in its early stages, for their patience and passion in guiding me during the research process. Their invaluable advice and suggestions, as they provided their time, wisdom and guidance, enabled me to accomplish and exceed the main objectives of my PhD. It has been a great honour for me to go through this endeavour with their supervision.

To have loved ones to support you and share in your success is a tremendous blessing. My dearly beloved wife Lara and my two daughters Faith and May have always been there for me with support, love and endless patience with my busy schedule.

To my beloved parents, I owe a debt of gratitude for their love, enduring support, and prayers for me. It was my father who inspired me to follow this path, although he is no longer with us, his belief in me and the motivation it provided continues to fuel my work. It is to him that I dedicate this work

This PhD process would not be possible without the support and assistance of the bank I work for, Al Rayan Bank (formerly Islamic Bank of Britain). Also, the Islamic banks and individuals around the world who completed the survey and those individuals in the Islamic finance industry who gave their time generously for the interviews and to share their experience and knowledge with me. Two individuals in particular, Dr. Abdul Sattar Abu Ghuddah and Sheikh Nizam Yacooby, were especially supportive and I am hugely appreciative of their guidance.

Table of Contents

List of Tables

List of Figures

List of Common Abbreviations

AAOIFI: Accounting and Auditing Organisation for Islamic Financial Institutions.

IFSB: Islamic Financial Services Board.

IFI: Islamic financial institution.

IB: Islamic banking.

FCA: Financial Conduct Authority, UK.

PRA: Prudential Regulatory Authority, UK.

A.H: After the Hijra: referring to the migration of the Prophet Muhammad to Madina from Makka. The Islamic lunar calendar starts from this event.

GCC: Gulf Co-operation Council (Saudi Arabia, Kuwait, Bahrain, United Arab Emirates, Qatar, and Oman).

NPD: New Product Development

OIC: Organisation of the Islamic Conference.

(PBUH): Peace Be Upon Him

(RA): Blessing Upon Him, short for the Arabic ‘radi Allah anhu’.

SSC/SSB: Shariah Supervisory Committee/Board

Glossary

Akhlaq
Moralities and ethics.

Amanah
Refers to deposits in trust. A person can hold a property in trust for another, sometimes by express contract and sometimes by implication of a contract. Current accounts may be regarded as Amanah (trust).

Bai
Sale or exchange.

Bai' al-Dayn
A transaction that involves the sale and purchase of securities or debt certificates.

Batil
Invalid (contract).

Commutative contract
A contract of exchange for value between two parties.

Daman/Dhaman
A guarantee or security.

Darura
The Shariah principle of necessity which may be applied in extenuating circumstances to achieve approval for a concept.

Fasid
Voidable (contract).

Fatwa (pl. Fatawa)
A legal pronouncement in Islam provided by an Islamic legal specialist.

Fiqh
The science of Islamic jurisprudence or Islamic law.

Fiqh al Muamalat
Islamic commercial jurisprudence or the rules of transacting in a Shariah-compliant manner.

Gharar
It means any element of uncertainty in any business or a contract which is otherwise preventable or avoidable.

Hadith (pl. Ahadith)
Words of the Prophet (SAW), traditions. The narrative record of the sayings and actions of the Prophet Muhammad (PBUH).

Halal
Anything permitted by the Shariah. Lawful; one of the five major Shariah categorisations of human acts.

Hanbali

One of the Islamic schools of jurisprudence.

Hanafi
One of the Islamic schools of jurisprudence.

Haram
Anything prohibited by the Shariah. Unlawful; one of the five major Shariah categorisations of human acts.

Hawala/Hawalah
Literally, it means transfer; legally, it is an agreement by which a debtor is freed from a debt by another person accepting to receive a transfer of the obligation, or the transfer of a claim of a debt by shifting the responsibility from one person to another – contract of assignment of debt. It also refers to the document by which the transfer takes place.

Hijra
The emigration of the Prophet Muhammad (PBUH) and his followers to Medina.

Ijara/Ijarah
Leasing. Sale of a definite usufruct of any non-monetary asset in exchange for definite reward.

Ijara Mawsoofa Bil Thimma
A lease agreed upon, perhaps even with a deposit, for delivery and use of an asset in the future.

Ijara Muntahia Bi Tamleek
This is a form of leasing contract used by Islamic financial institutions which includes a promise by the lessor to transfer the ownership of the leased property to the lessee, either at the end of the term of the lease period or by stages during the term of the contract. The undertaking or the promise does not become an integral part of the lease contract in order to make it conditional. The rental, as well as the purchase price, is fixed in such a manner that the bank gets back its principal sum along with some profit, which is usually determined in advance.

Ijma/Ijm'a
Consensus of all or majority of the leading qualified jurists on a certain Shariah matter in a certain age.

Ijtihad
This refers to an endeavour (literally toil) of a qualified jurist to derive or formulate a rule of law to determine the true application of Shariah in a matter on which the Holy Quran and the Sunnah is not explicit.

Illah
Underlying rationale.

'Inan (A type of Sharikah)
It is a form of partnership in which each partner contributes capital and has a right to work for the business, not necessarily equally.

Istihsan
Judicial preference for one legal analogy over another, usually to give preference for the public welfare.

Istijrar

A contract between a supplier and a client whereby the supplier supplies a particular item on an on-going basis on an agreed mode of payment until they terminate the contract. It is also applied between a wholesaler and a retailer for the supply of a number of agreed items.

Istisn'a
This is a contractual agreement for manufacturing goods and commodities, allowing cash payment in advance and future delivery or a future payment and future delivery. A manufacturer or builder agrees to produce or build a well-described good or building at a given price on a given date in the future. Price can be paid in instalments, step by step as agreed between the parties. Istisn'a can be used for providing the facility for financing the manufacture or construction of houses, plants, projects and building of bridges, roads and highways.

Manfa'a/Manfaa
Usufruct or benefit derived from an asset.

Maqasid
A contract which is unenforceable until authorised.

Muamalat
Activities which are not explicitly governed by the Shariah with respect to worship.

Mudaraba/Mudarabah/Mudharabah (Trust Financing)
This is an agreement made between two parties one of whom provides 100 per cent of the capital for a project and has no control over the management of the project; another party, known as a Mudarib, manages the project using his entrepreneurial skills. Profits arising from the project are distributed according to a predetermined ratio, and financial losses are borne by the provider of capital.

Mudaraba al Muqayyada
Restricted Mudaraba – applies when the agreement relates to a specific business or place and it is contractually limited by time, place, partner and deal type.

Mudaraba al Mutlaqa
Unrestricted Mudaraba – where the Mudarib is free to act within traditional Shariah parameters.

Mudarib
Mudarib manager in a Mudaraba contract. The Mudarib does not invest capital but provides skill and effort. The Mudarib is a co-investor in a bilateral Mudaraba.

Murabaha (cost plus financing)
This is a contract sale between the bank and its client for the sale of goods at a price which includes a profit margin agreed by both parties. As a financing technique it involves the purchase of goods by the bank as requested by its client. The goods are sold to the client with an agreed mark-up.

Musawamah
Bargaining. A general kind of sale in which the price of the commodity to be traded is bargained between the seller and the purchaser without any reference to the price paid or cost incurred by the former.

Musharaka/Musharakah
This Islamic financing technique involves one or more parties who both provide capital towards the financing of a project or business. Both parties share profits on a pre-agreed ratio, but losses are shared on the basis of contributed capital. Management of the project may be carried out by both the parties or by just one party. This is a very flexible arrangement where the sharing of the profits and management can be negotiated and pre-agreed by all parties.

Musharaka Muntahiya Bittamleek/Diminishing Musharaka or Musharaka Mutinaqisa
A form of partnership whereby one partner buys out the shares or units of the other according to a specific schedule.

Muwaada/Mua'hida
Bilateral promises, two unilateral promises/undertakings extended by two parties on the same subject matter.

Naseeyah
Delay.

Parallel Salam
A contract taken out to offset the delivery implications of the Salam contract.

Qard Hassan
A form of loan identified in the Quran as a means of charity or helping others in need; an interest-free loan that would be paid back on demand or at the agreed time.

Qimar
Speculation.

Qiyas
Literally this means measure, example, comparison or analogy. Technically, it means a derivation of a rule on the analogy of an existing law if the basis ('illah) of the two is the same. It is one of the tools of Islamic law.

Quran
Text of God, the primary source for jurists. The Book of Divine Revelation that was delivered to humankind by the Prophet Mohammed (PBUH).

Rab al Mal
The party providing the finance, the investor.

Riba
An excess or increase, interest. Technically, it means an increase over the principal in a loan transaction.

Riba Al-Fadl (Riba al-Quran/Riba al-Jahiliyyah)
Riba Al-Fadl (excess) is an exchange of similar commodities, defined as money or certain foods, in unequal amounts. Its prohibition is meant to close the door to riba in lending.

Riba Al Naseeyah/Riba Al-Nasiah (Riba Al-Quran and Riba Al-Jahiliyyah)
Riba Al-Nasiah or riba of delay is due to an exchange of money today for more at a later date. Interest, in all modern banking transactions qualifies as Riba Al-Nasiah.

Ribawi
Susceptible or containing riba.

Ribawi commodities
Gold, silver, wheat, barley, dates, salt; anything which is used as money.

Sadaqat
Voluntary charitable donations.

Sahih
Valid (contract).

Salaf
In its widest application, Salaf is another name for Salam (described below).

Salam
A contract for the purchase of a commodity for deferred delivery in exchange for immediate payment according to specified conditions.

Sarf
Literally this means exchange. The 'rules of sarf' restrict the methods of exchanging and depositing money in order to prevent riba. These rules are based on the Hadith.

Securitisation
The conversion of assets into financial instruments which may be sold in a manner that cuts the asset off from the seller, making it truly the property of the buyer of the financial instrument.

Shariah
Islamic canon law derived mainly from the Quran and the Hadith practice and traditions of the Prophet Mohammed (PBUH).

Shirkah
An alternative term for Musharakah. A partnership or company.

Shirkat al Aqd
Partnership by mutual agreed contract.

Shirkat al Milk
Partnership of two or more owners of a property held in common.

Sukuk
The is a document or certificate evidencing an undivided pro rata ownership of an underlying asset. Usually referred to as an Islamic bond.

Sunnah/Sunna
Custom, habit or way of life. Technically, it refers to the utterances of the Prophet Muhammad (PBUH) other than the Holy Quran known as Hadith, or his personal acts, or sayings of others, tacitly approved by the Prophet.

Ta' Awun
Co-operation, an Islamic insurance scheme is based upon cooperation for mutual protection of the members.

Tabarru'
A donation/gift the purpose of which is not commercial. Any benefit that is given by a person to another without getting anything in exchange is called Tabarru'. The concept of Tabarru' has been applied within Takaful (Islamic insurance) schemes.

Takaful
A Shariah-compliant system of mutual protection, insurance, in which the participants donate part or all of their contributions to a common fund. These may be used to pay claims for damages suffered by some of the participants. The company's role is restricted to managing the insurance operations and investing the insurance contributions.

Tawarruq
A form of reverse Murabaha which is tolerated as it involves three sales contracts and three independent parties, frequently used to deliver money to a person wishing to avoid borrowing at interest. Considered objectionable by most Muslim scholars.

Ummah
The collective nation of Islamic states. The Islamic universal community.

Underlying asset
An asset which is the object of a contract, a specific Sukuk issuance, derivative, or guarantee.

Usufruct
The right to enjoy the benefit of property which is vested in another person.

Usul al-fiqh
Sources of law.

Wa'd
Promise, an undertaking by one party regarding future actions.

Wadia/Wadiah
Safe custody/resale of goods with a discount on the original stated cost.

Wakala/Wakalah
A contract of agency in which one person appoints someone else to perform a certain task on his behalf, usually against a certain fee.

Wakil /Wakeel
Agent, representative for commercial purposes with a capacity similar to a power of attorney.

Waqf (pl. Awqaf)
Waqf investments or properties are charitable grants with infinite life which may be used to support specific beneficiaries designated by the grantor.

Wujuh
Literally, face. This may be interpreted in commercial environments as goodwill or credit for partnership or accounting purposes.

Zakat/Zakah
A religious obligation of alms-giving on a Muslim to pay 2.5% of certain kinds of his wealth annually to one of the eight categories of needy Muslims. Literally, it means blessing, purification, increase, or cultivation of good deeds. In Shariah, it is an obligation to pay Zakat on wealth above a specified minimum for defined beneficiaries, as noted in the Quran.

Chapter 1: Introduction

1.1 Background

Since the global financial crisis of 2008, interest in the Islamic banking and financial system has sharply increased. After the near collapse of the world financial system and the bankruptcies and government bailouts of several long established financial institutions (see e.g. Plosser, 2009; Poole, 2011; Duska 2009 and Jameson 2009), attention has shifted to the newly emerged Islamic banking system. The focus of examination is whether Islamic banks have been impacted by the financial crisis in a similar manner to the conventional banking system.

The question always asked was how Islamic banking and its financial products were and are different from its conventional counterpart. Also, what underpins the financial innovation and engineering processes to make this banking system immune, to some extent, from the recent financial crisis?

Comparisons between Islamic and conventional banking have also surfaced in other arenas. In Anti-Capitalist protests around the world, there was considerable anger towards the conventional financial institutions.

These events were thought provoking and raised many questions about Islamic finance and banking that need to be seriously considered. Does the Islamic financial system really hold a solution, or at least a partial solution, to our financial problems for people who have lost faith in capitalism and the current practices of the financial system and its institutions? What shielded the Islamic financial and banking system from the financial storm that destroyed significant parts of our conventional financial and banking system? How did the Islamic financial system develop its principles and foundations in relation to financial innovation and engineering, where did Islamic finance come from and what are the characteristics that this system represents?

Recent academic research (Plosser, 2009; Poole, 2011; Duska, 2009; and Jameson, 2009) has suggested different reasons for the failure of the financial and banking systems that triggered the financial crisis in 2008. Kling (2010) summarises that the main focus was on two competing narratives: moral failure and cognitive failure. The capital regulations played a fundamental role in fostering the behaviour that created the financial crisis. Occurring in parallel to this under-regulation were subprime mortgages, underwriting criteria, the sophisticated financial innovation and engineering, principles of financial product development and debt securitisation.

These dual processes combined to trigger the 2008 financial crisis, which is still affecting the economy and society as a whole (Plosser, 2009; Poole, 2011; Duska, 2009; and Jameson, 2009). Yet the role of banks and their practices in causing the current financial crisis is underplayed and under analysed. This lack of scrutiny has occurred in spite of a colossal sum of taxpayers' money being injected to save banks, which themselves have played crucial part in the current financial crisis.

By examining the banking practices that were the root cause of the recent financial crisis as outlined in the literature, they all lead to two intertwined, overriding concerns, namely cultural and behavioural failures. These failures impacted the processes of initiating new financial innovation, financial engineering, the new financial product development (NPD) and the way these products were introduced and sold in the market by circumventing legal rules and regulations.

New, light touch regulatory changes, according to Turner (2012), were introduced by financial regulators into banks in order to address this issue. As an example, the UK government has introduced the separation of commercial and investment banking functions, which will come into effect around 2019. However this does not represent any real reform of the financial system and banking system, because it does not fully address the working culture underpinning banking practices.

This research, therefore, adopts the view that the cultural and behavioural failures are the overriding concerns, as the basis for exploring and explaining these issues in the context of the Islamic finance and banking. The behavioural approach and culture of the financial innovation and engineering processes are crucial elements to be assessed in order to explore what constitutes a religiously guided process towards financial innovation and engineering.

1.2 Importance of Financial Innovation: Realising the potential

Growth of the Islamic finance is in progress with key players pioneering new ways for consumers to generate a profit from their wealth in a Shariah compliant way. However, the challenge does not end here. Whilst product innovation needs to keep pushing the boundaries, consumer education and awareness must also be increased to drive product take-up for an increased market share. The industry's success so far proves that this is not mission impossible (Iqbal, 1999).

Rapid surge of financial innovations in international financial markets was witnessed in the 1980s. Financial innovations transformed the traditional financial and banking markets into highly sophisticated markets featuring high degrees of liquidity and a wide-array of instruments to share and transfer various sources of risk. Such financial instruments are believed to be contributable factor to the recent global financial crisis (Philippe and Da Silva, 1995: 5). The bank for International Settlement (BIS, 1986) identifies three types of financial innovation activities with the most significant impact on the markets innovations to enhance liquidity, to transfer risk (price and credit), and to generate revenues (from credit and equity).

Financial engineering can be viewed as a process of building complex instruments utilising basic building blocks or unbundling and repackaging different components of existing financial instruments, e.g. return, price risk, credit risk etc. Most of financial innovations today are financial ideas that are engineered to incorporate highly liquid instruments and derivatives that are nothing but a structure based on simple and basic set of instruments (Iqbal, 1999).

A close scrutiny of instruments underlying Islamic financial system reveals that such instruments have similar characteristics of many of today's basic building blocks. It is a matter of designing more complex instruments without violating any of the boundaries defined by Shariah rules (Iqbal, 1999). Therefore, based on the above discussion and for the purpose of defining key terms used in this research, this study adopts the following meaning when referring to, financial innovation, financial engineering and new product development (NPD):

a) Financial innovation is the generation of new idea for a financial product with the objective of securing market competitiveness, addressing risk, generating revenue or enhancing liquidity.

b) Financial engineering, on the other hand, is the process of employing basic financial tools to build what may appear as a complex structure in order to provide a suitable design for the new financial innovation.

c) New product development process (NPD) is the overall process that sets the steps for taking a new financial innovation from the concept or initiation phase, through the financial engineering and design phase, by following the different phases and governance controls. This would lead to a complete financial product that complies with all applicable Shariah rules, in order to be introduced in the market. This involves taking into account all operational, market, system and distribution channels and sales requirements. The requirement of a financial engineering would determine whether the NDP requires such phase or not, if it is designed on a simple single financial instrument.

The above technical meaning and definition of the three identified terms that this research study revolves around, would be the approach used herein and throughout this research when referring to any of them. The Shariah principles, rules and ethics that should be observed are incorporated into the processes of those technical terms in this research.

1.3 What makes a bank Islamic

The basis for Islamic finance lies in the principles of the Shariah, or Islamic Law, which is taken from the Qur'an and from the example of Prophet Muhammad (peace be upon him). The Islamic form of finance is as old as the religion of Islam itself (Visser, 2009: 34).

Central to Islamic finance is that money itself has no intrinsic value. As a matter of faith, a Muslim cannot lend money to, or receive money from someone and expect to benefit from this alone. This is why interest (known as *riba)* is not allowed and is considered effortless profit (Ahmed, 1976; Siddiqi, 1981). Therefore, the exclusion of interest from its activities is the founding principle of an Islamic bank.

Instead, according to Islam, money must be used in a productive way and wealth can only be generated through legitimate trade and investment. It is also essential that all parties share the business risk involved in the activity. As a result, the parties concerned are each entitled to a share in the profits that are generated (Iqbal, 1999).

Islamic banking therefore uses various principles recognised as Shariah compliant such as *Ijara* (leasing), *Musharaka* (partnership) and *Mudaraba* (profit sharing agreement), full explanation of all common principles is provided in Chapter 2, section 2.4. Islamic banks use these, and other, Islamic finance principles to develop Shariah compliant financial products, such as savings accounts, investment, commercial and development finance and home finance, which allow Muslims to conduct their finances in an Islamic and ethical way.

1.4 Values embedded in the Islamic banking products

Islamic banking and conventional banking are based on different values and the absence of interest in Islamic banking is one of the key differentiators. However, there are other important differences:

a) Islamic banking (IB) is asset-backed (Ahmed, 1976; Siddiqi, 1981); see Appendix 3, section 7.4 for a detailed discussion about asset-backed and asset-based Shariah compliant financial products, which means that Islamic banking should not conduct business unless it has the funds or assets to back the transaction. As a result, Islamic banking should avoid putting its customers' assets at risk through the use of sophisticated financial instruments (used in the conventional banking system) that involve speculation.

So, for home finance e.g., Islamic banks use their own funds, or the savings deposits from their customers, to provide finance (Al Zarqa, 2012: 48-51). The customer and the bank buy the property jointly under one of the financing structures (this structure is based on a diminishing co-ownership with lease) used by Islamic banks for that purpose. The monthly payment increases the customer's share in the property and includes rent on the share that the IB owns. At the end of the finance term the customer will own the property outright and the IB will transfer the legal title to the customer.

For savers, Islamic banks invests their depositors' money in low risk commodities trade in inter-banking deposits placements with counterparty Islamic banks, or conventional banks with an Islamic trade desk, and in the IB's assets products. The return received from both of these activities is shared and distributed as profits to savings customers. By following this asset-backed system (as there must be an underlying asset for any financial transaction), Islamic banking as a whole, is not exposed to the same risks as conventional banks.

b) The values underpinning Islamic banking stipulate that the source of funding, profits and business investments cannot be in/from businesses that are considered unlawful under Shariah, i.e. companies that deal in interest, gambling, pornography, speculation, tobacco, arms and other commodities contrary to Islamic values (Visser, 2009: 34).

c) The principles of fairness and transparency play a large role in Shariah compliant banking, although it might not be fully implemented in practice. For customers this translates itself in different ways. For example, a customer taking out a home finance product would only be charged a fee that reflects the administrative costs the bank incurs to arrange the finance. Small print of associated risks, extra terms and conditions that shift risk unfairly to customers and hidden charges that are not clear upfront are practices against Islamic teachings for financial transactions (Iqbal, 1999).

d) The whole premise of Islamic banking is to provide a way for society to conduct its finances in a way that is ethical and socially responsible. Interest is forbidden in Islam because it is considered effortless return that does not serve the real economy (Al Zarqa, 2012: 36). Conventional financial instruments, for example short-selling, futures and options contracts and derivatives, are also not permitted as they would create risks that do not promote the financial well-being of the parties involved, and society as a whole. In addition to, some of those financial products lack certain requirements to be acceptable as Shariah compliant financial products (Al Zarqa, 2012: 36).

However, trade, entrepreneurship and risk and profit sharing activities are encouraged, and these are the financial principles that underpin the products and financial innovation offered by Islamic banking. These are complemented by ethics and values such as inclusivity, transparency, integrity, respect and fairness. The two are combined to offer a banking system that is built on a different and possibly more ethical footing, than conventional banking.

1.5 If all banks adopted Islamic values, would there have been a banking collapse?

The principles of Islamic banking, is believed to have been designed to, promote a stable economic environment (Wilson and El-Ashker, 2006: 38; Green, 1993). Importantly, speculation is not permitted and all activities must be asset-backed. Further, the replacement of trade over interest as the founding principle in Islamic banking introduces a level of equity between the customer and the bank. Therefore, IB was better protected from the credit crunch crisis affecting mainstream banks in 2008. Essentially, as an asset-backed structure, it is believed that Islamic banking was not impacted by its root cause, i.e. 'toxic assets' (Al Zarqa, 2012: 48-51).

In contrast to the conventional banking sector today, Islamic banking is claimed to be based on traditional values and is very prudent in its approach to managing its risks and its customers' assets. If lessons are to be learned by the conventional banking sector from the 2008 financial crisis, then the principles of Islamic banking would, perhaps, be a good place to start. They would possibly provide a useful framework to establish a resilient process for the development of financial innovation in banking system that could sustain and minimize the effects of future financial crises (Al Zarqa, 2012: 48-51). Thus, this research aims to explore what constitutes a religiously guided process towards financial innovation and engineering.

1.6 Significance of the Study

The issue of financial innovation and engineering in the product development process in Islamic banking and the basis that it should be built on to be fully compliant with Shariah is not yet matured and identified. This study explores financial innovation in Islamic finance and the product development process for Islamic financial institutions (IFIs) in order to understand its characteristics and guiding principles. The design of this research aims to explore the current financial innovation and product development process in IFIs, by articulating the financial innovation and engineering constructs and components from an Islamic finance perspective.

This theoretical framework is important because it serves the real economy as described in the classical books of the Islamic Commercial Law. Furthermore, this study also evaluates the current practices of Islamic banks, in relation to financial innovation and engineering, in light of the developed theoretical and practical framework. It also extended the theoretical framework for innovation orientation to another level by identifying and conceptualising religious orientation towards financial innovation and the plasticity and role of Shariah as a boundary object in that process.

The research has not been able to locate, following an extensive literature review, any specific research conducted regarding this very specialised and important subject. Some researchers (see El Gamal, 2006), argue that Shariah compliant financial products offered by IFIs mimic the conventional counterparts and are labelled as Islamic. Therefore, this research attempts to demarcate the boundaries and role of Shariah as a boundary object in the financial innovation and financial engineering process. It introduces the concept of plasticity of Shariah by extending the boundary object theory.

Therefore, this study is vital in examining, evaluating and exploring this issue by developing a theoretical framework for Islamic financial innovation and product development process from an Islamic finance perspective. This could ensure that financial innovation and engineering in IFIs is following a robust framework that meets all the Shariah requirements and can be congruent with current financial regulations. This is in order to avoid financial fragility by circumventing these requirements and regulations as happened with its conventional counterpart for various reasons.

1.7 Motivation of the Research

Although Islamic banking has been evolving for the last four decades or so, which is relatively a short period compared to the conventional banking system, there has been a justified increased criticism from some Islamic academia. These critiques relate to the issue of whether the Islamic finance industry has gone off course from its original principles, and started mimicking the conventional banking system and products. The Islamic finance industry is also criticised for not having a framework for financial innovation and engineering or structure that is rooted in the Shariah principles and objectives, which will protect the characteristics and identity of Islamic finance and banking. Being an interest-free financial and banking system, Islamic banking products have a different structure than those in the conventional banking system.

However, the literature review revealed that the issue of financial innovation and engineering, as part of the overall product development process, for Islamic banking and finance and its Shariah roots has not been adequately researched or addressed. What would constitute a good financial innovation and engineering that meets all Shariah requirements and objectives as far as Shariah is concerned. This is a question that does not currently have any answer and would require one. In contrast, conventional financial innovation and engineering, as argued in the literature (Plosser, 2009; Poole, 2011; Duska 2009 and Jameson 2009; Mullinuex, 1997 and Persons and Warther, 1997) has been the cause of financial fragility and eventually, the trigger of financial crises.

Nevertheless, this subject is a cornerstone for the Islamic finance industry’s growth and for it to be a sustainable system that offers a model of an alternative, ethical, faith-based approach for banking and finance. Therefore, this study aims to address this problem and offer a possible insight that could address this gap in the literature by developing a conceptual framework for financial innovation and engineering as theorised by Shariah. It would be rooted in the core principles and spirit of Shariah, while also meeting the higher Shariah objectives.

1.8 Research Objectives

Bearing in mind the discussion above, the literature review shows that there are hardly any studies that address the phenomena of religious orientation towards financial innovation and engineering as prescribed from an Islamic perspective. This is the main objective of this study from which the objectives below are derived. Therefore, the research has the following two objectives:

1. To explore and explain the dynamics of what constitutes a religious orientation towards financial innovation and engineering in the Islamic finance industry.
2. To identify the basis of how a theoretical framework for financial innovation and engineering from an Islamic finance perspective could be constituted.

1.9 Research Questions

The objectives above will be achieved through answering the following questions:

1. How is religious orientation enacted in financial innovation and engineering processes in IFIs?

    1.1 How does Islam encourage financial innovation?

    1.2 What are the instruments and challenges of financial innovation in Islamic finance?

2 What are the key components and processes that underpin a possible conceptual framework for financial innovation and engineering in IFIs?

    2.1 What drives financial innovation in Islamic banking and finance?

    2.2 What are the current practices of Islamic banks regarding financial innovation and engineering?

    2.3 What is the dynamic role of Shariah in the financial innovation and engineering processes in IFIs?

1.10 Contribution of the Research

This research study offers an opportunity to develop theoretical, empirical and practical contributions that demonstrate the novelty and validity of the underlying research. The underlying theoretical framework of what constitutes Shariah-induced financial innovation and engineering is the primary theoretical contribution of this research study. It provides a conceptualised framework to understand the nature of what constitutes religious orientation towards financial innovation and the dynamics of its implementation in the Islamic finance industry.

The concept of religious orientation helps to explain the empirical consequences of the absence of a clear definition of religious orientation towards financial innovation in the existing context of the Islamic finance industry. It also addresses the challenge to have a clear concept of what constitutes a religious orientation towards financial innovation as a new phenomenon within the innovation orientation field. Therefore, the main research contribution could be outlined as follows:

a) The research extends the existing literature of innovation orientation to a completely new field and construct that is based on a religious imperative as a framework within which financial innovation is constrained. It explains how an innovation orientation in IFIs can be directed within religious rules.

b) The research introduces and examines the plasticity of Shariah as a shared boundary object and its dynamic role in managing tension and conflicting values in the financial innovation process

Furthermore, building on the empirical results, the study illustrates the insights that each theoretical lens affords into practices of collaboration and develops a novel analytical framework for understanding religious orientation towards financial innovation. The conceptualised framework provided here would help IFIs to formally identify and develop organisational conditions and competencies needed to fulfil their objectives as guided by their faith. This practical contribution provides an evaluative and measurement tool, provided by the research findings and the developed framework, to examine existing financial products on offer. The findings of this research study would enable IFIs to reflect on their current practices, processes, Shariah compliance framework for financial innovation and engineering and NPD.

1.11 Potential Implications of the Study

As Islamic finance and banking continues to develop rapidly in many countries, the main implication of this study is that it would shed light on the financial innovation and product development process. Thus, helping to create a theoretical framework and identify some areas for future reserach. If this proves to be the case, greater scrutiny and analysis of the financial product development and financial engineering would ensure that IFIs, in particular, and conventional financial institutions at large could be following the ethical Shariah practices when introducing a new financial innovation or developing financial products. Hence, this would reflect on the whole financial system resulting in a more sustainable and stable financial system in the face of future harmful financial crises.

1.12 Difficulties

This empirical study has been subject to certain difficulties and it is important to highlight them in this section. It is generally believed that secondary research is easier to carry out than primary research as it is based on already published available data rather than raw, newly collected data. However, there are still some drawbacks, which should be considered. These shortcomings are related to the accuracy of the data which was originally collected through primary research before it became available for publishing.

There could be a certain degree of bias and lack of reliability in the original sources of data. Also filtering certain variables related to product development processes in Islamic banks was a challenge. This is because not all banks follow the same processes, or the information cannot be provided due to corporate confidentiality. Therefore, the only possible solution for this would be finding a source from other databases, if available, which might take a longer period of time.

That also was proven to be difficult as the subject of this study is a new one and any literature is very limited, in particular empirical literature as there is not any previous academic work, which could be identified, that this study could build on. Therefore, it was important to design the research in a manner that provides a solid ground to achieve the objective of this research by collecting athe required primary data using mixed-methods approach as detailed in Chapter 8. Networking within the Islamic finance industry has helped encouraging key Islamic scholars and practitioners in the Islamic finance industry to complete the research questionnaire and encourage their colleagues to do the same. The same strategy also helped obtaining very important primary data through the subsequent interviews. The importance of this study and how it would help the Islamic finance industry, also implication of its findings, which would be based on the data provided by them, was explained to all respondents. Therefore, accuracy and reliability of the data, is pertinent for this study. Maintaining a relatively objective, or impassionate, view throughout this research study was also challenging, although all possible efforts were made to achieve that.

1.13 Outline of the Research Chapters

In pursuit of the research objectives and in order to answer the above research questions and their sub-questions, the research is made up of the following chapters:

Chapter 1: Introduction

As detailed in this chapter, chapter 1 provides an overview and background of the research, its objectives, questions, motivation and contribution. It also provides an outline of the research chapters and briefly describes their contents.

Chapter 2: The Research Context

The objective of this chapter is to outline and discuss the underlying context of this research subject. It addresses the nature and characteristics of Islamic finance and banking, and the core principles which underpin their operation. It shows the comparison between Islamic banks with their conventional counterparts, the differences of principles, products, services, governance structure and the control system. The chapter focuses in particular on the issues of Shariah governance around financial innovation and engineering in the product development cycle in IFIs.

Chapter 3: Literature Review

This chapter provides an understanding of Islamic finance, financial innovation and product development from a research perspective. It concludes by identifying gaps in the literature presented in a table format and highlights the relevant gaps to be tackled in this research. It shows that religious orientation towards financial innovation and the subject of financial engineering and product development in Islamic finance is very limited in the academic literature.

Chapter 4: A Historical Analysis of Financial Innovation in Islamic Economics

This chapter provides an analysis of financial innovation and engineering as part of the historical development of Islamic finance from its inception as a concept over 1400 years ago. It then describes the main influencing factors and elements that played a critical role in its development until the modern days. Thus, it is very important, as this chapter concludes, to study Islamic finance in its historical context in order to have a correct understanding and appreciation of its history and the different development phases that it has gone through.

Chapter 5: Traditional Theory of Financial Innovation

This chapter aims to explore financial product innovation from a conventional perspective and its consequences that are often ignored, by highlighting three Schumpeterian schools of innovation. In order to do so, it approaches this goal by focusing first on the role played by financial innovation in creating financial crises. This will provide a theoretical understanding of what would have caused the current (i.e. 2008) and previous financial crises and their effects. Most of the analyses conducted have focused on the nature of financial innovations with exploring and contrasting the current financial system with the Islamic financial system, and extracting some lessons to be learned. This chapter further explains what would happen following a financial crisis, and brings to light that the resilience of the banking system is a crucial element for a strong financial system. It also argues that there is an innovation bias across the academic research and that financial market is under regulated, and more robust regulations are required. It also critically discusses financial innovation, its theory, schools and its impact on society through uncalculated risks.

Chapter 6: Financial Innovation Theory from an Islamic Perspective

This chapter attempts to articulate the distinctive features and characteristics on which a financial innovation theory, from an Islamic economic thought perspective, could be developed and built. This theory then will be the cornerstone for the cycle of any financial engineering and product development in the financial system. This chapter endeavours to set the foundations for financial innovation and engineering concepts as rooted in the traditional Economic thoughts in Islam. It links the religious compliance in observing an overall divine power as guided in Islamic finance to the application of normativity through social practices theory as articulated by Bourdieu. It, further, articulates the thoughts of the Islamic school in relation to innovation as an addition to the 3 Schumpeterian schools of innovation that were discussed in Chapter 5.

Chapter 7: Theoretical Lens for the Research

This chapter explores theoretical concepts that could provide a useful tool for understanding what constitutes religious orientation towards financial innovation from an Islamic finance perspective. It concludes with the need to set up a theoretical framework to facilitate the understanding of the nature and dynamics of religious orientation towards financial innovation in Islamic finance. The chapter develops a framework of analysis by employing the theories of innovation orientation and boundary object in order to formulate a theoretical lens for religious orientation towards financial innovation. This chapter also presents the theoretical perspective for this study, thus becoming the basis of possible tool to signify and support the empirical data that represents the phenomena in the field.

Chapter 8: Research Methods

This chapter introduces and outlines key aspects of the research design, research philosophy, research strategy, and the empirical techniques applied based on the philosophical assumptions underpinning the thesis. It also explains the processes of the field research conducted by survey and interviews that took place in different countries, also the process of negotiation for an access, in order to ensure the research trustworthiness. Collection and variety of data, the analysis undertaken for each type of primary data collected are also discussed to show the novelty of the research process. Moreover, it explains the efforts made in order to ensure and maintain trustworthiness and ethical considerations which enables the reader to build trust on the rigour of the undertaken research processes, findings and the conceptual framework of the research.

Chapter 9: Analysis of Data Collected via Survey Questionnaire

This chapter is concerned with the analysis of the primary data collected through a survey. The survey questionnaire is conducted in order to provide an insight into financial innovation and engineering practices in Islamic financial institutions. It aims to produce simple summaries about the sample and about the observations that have been made. Such summaries are presented as either or both, statistics or visual, i.e. simple to understand graphs. These summaries form the basis of the initial description of the data, as part of a more extensive analysis that is complemented by the analysis of the semi-structured interviews and its findings.

Chapter 10: Analysis of Data Collected via Interviews

This chapter provides an analysis of the semi-structured interviews that were conducted with key Islamic finance experts and influential Islamic scholars in the Islamic banking and finance industry. The aim of this chapter is to ascertain if the responses of the interviewees can contribute to the basic objective of finding relevant, authentic, reliable and satisfactory answers to the main research questions and their sub-questions. It provides more in-depth insight to the two main research questions and their sub-questions. It also focuses on finding more insight into issues emerged from the analysis of the data collected in the questionnaire survey in relation to the theoretical framework of religious orientation towards financial innovation and engineering. In addition, it sets what constitutes this theoretical framework from a religious perspective in IFIs. Moreover, this chapter summarises the emerged themes, then analyses those themes and their sub-themes by linking them to the relevant theories. It substantially contributes towards building the theoretical framework for financial innovation and engineering from an Islamic perspective.

Chapter 11: Discussion and Conclusion

This chapter presents a discussion and conclusion of the findings of the data collected by both methods survey and semi-structured interviews. As part of the discussion, this chapter articulates the definition for a religious orientation towards financial innovation. It describes the research policy and managerial implications and suggests avenues for future research. It also demonstrates the theoretical, empirical, and practical contributions of the research and concludes with a reflection on the whole research process, and the resulting analysis.

Chapter 2: The Research Context: Innovation in Islamic Finance and Banking

2.1 Introduction

The previous chapter (Chapter 1) provided an overview of this research study setting out the research objective, questions, contribution and outlines of the research chapters. This chapter, however, aims to provide the underlying context, nature and basic understanding of Islamic finance and banking, and its financial principles. It explores the main differences between Islamic banks and their conventional counterparts.

In addition, the role of Shariah governance and an overview of the role of the Shariah Supervisory Committee (SSC), in the innovation and financial engineering process, are discussed. It also provides a definition of Islamic finance and explains the prohibition of usury. It goes further, then, to explain the main classical modes of Islamic finance highlighting the major differences with conventional banks. Financial innovation and engineering in Islamic finance are also discussed to provide a brief context to this research study.

2.2 Defining Islamic finance

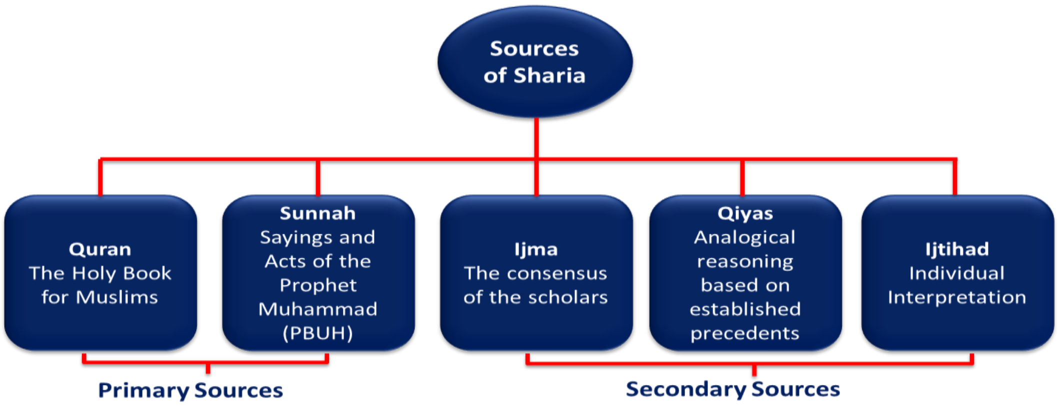
It is known that Islamic finance revolves around the prohibition of usury (Qur`an, 2: 275), however, that is not the only reason for avoiding conventional finance products. Islamic finance provides a comprehensive approach to undertake financial activities that are linked to the overall religious philosophy in Islam (Visser, 2009: 26). Therefore, it is useful to start with defining Islamic finance. Definitions of Islamic finance range from the very narrow definition of ‘interest-free banking model’ to the very broad one of ‘financial operations conducted by Muslims’. Warde (2000) suggested the following definition: ‘Islamic financial institutions are those that are based, in their objectives and operations, on Qur`anic Principles’. They are thus set apart from ‘conventional’ institutions, which have no such preoccupations.

This definition goes beyond simply equating Islamic finance with 'interest-free' banking. It allows taking into account operations that may or may not be interest-free, but are nonetheless imbued with certain Islamic principles: the avoidance of *riba* (in the broad sense of unjustified increase) and *gharar* (uncertainty and speculation). Although Warde stated that this definition is for Islamic finance, but he started the definition defining Islamic banks. Therefore, his definition could be accepted for Islamic banking, but not for Islamic finance.

This is because, simply, Islamic finance goes beyond the boundaries of banking operations as financial intermediaries and providers of financial products and services. It includes all financial institutions and transactions, such as *takaful* operators, *zakat*, fiscal policy and endowments. Another issue is noted with the definition suggested by Warde is that, he limits the operations of IFIs to be only based on the Qur`anic principles, rather than Shariah (see Figure 2.1 below for illustration about the sources of Shariah and what it includes), which includes the *Sunnah* as well. It is known that most of the issues related to Islamic finance are founded and illustrated in the *Sunnah* of the Prophet.

Figure 2.1: Main sources of Shariah

(Based on Al-Bouti, 2005)



Thus, this research suggests the following definition for Islamic finance, it is an approach to finance and undertaking financial activities as founded, governed and illustrated under Shariah. This definition combines the principles of Islamic finance and associated ethics, excludes all prohibitions under Sharia, includes all possible forms of finance whether practiced on a state, organisational or individual levels. Figure 2.1 above illustrates the main sources of Shariah that Islamic jurists and scholars employ to reach an opinion about the compliance of a financial innovation or product and their processes.

2.3 The Prohibition of *Riba* in Islamic finance

This specific prohibition in Islamic finance has been singled out as being the distinguishing element of the Islamic finance. Any financial transaction that leads to *riba* would be rendered impermissible. The ban on *riba* is based on a number of verses of the Qur`an, such as 2:275-278, 3:130, 4:161 and 30:39. Therefore, all forms of interests are prohibited without any question.

This Islamic view on *riba* was observed in the early days of Islam and was taken for granted by medieval Islamic scholars, such as Al Ghazali (Ghazanfar and Islabi, 1990). According to Lisan Al Arab (Ibn Mandhur, 2009), *riba* means ‘increase or addition’. In Shariah it means an addition to the principal, which implies a monetary, or any other benefit, payment for the use of money which has been fixed at the outset. It is a form of excess of unjustified portion of income, and thus, it at variance with the principle of *tawheed* (monotheism), brotherhood and Islamic concepts of income distribution (Choudhury, 1986: 11).

2.4 The Ethical Basis of Islamic Finance

Islam is both a religion and a civilization that spans over fourteen centuries of human history, and a geographical presence in vast areas stretching over the Asian and African continents and even parts of Europe. It is also a spiritual and metahistorical entity that has transformed the inner and outer life of numerous human beings in very different temporal and spatial circumstances. Around 1.6 billion people from different racial and cultural backgrounds identify themselves as Muslim (Nasr, 2003).

Historically, Islam has played a significant role in the development of certain aspects of other civilizations, especially Western civilization. Not only is Islam a major presence in today’s world, but its influence is also evident in the history of the Christian West, not to mention that of India and other regions of Asia and Africa. This influence posits Islamic finance as a somewhat new financial model in undertaking finance and business activities (Nasr, 2003).

The appropriate development of human life, as articulated in Islamic economics, requires two things: (1) the resources needed to maintain life and fulfil the material needs of both the individual and society; (2) the individual's knowledge of the principles of individual and social behaviour to allow individual self-fulfilment on the one hand and the maintenance of social justice and tranquillity on the other (Ahmad, 1971). Islam emphasises the need for balance between the demands of this world and the demands of the afterlife (Chapra, 1992). However, worship is not confined to these since worship also requires that Muslims serve God through good behaviour in all aspects of their daily life, even in their financial activities, work and business life. Many passages in the Qur'an encourage commercial and economic activity (Lewis, 2001).

2.5 The Concept of Growth and Purification in Finance

As part of the Islamic teachings, every individual is required to work (Rahman, 1994). However, any work or activities should follow clear guidelines for the benefit of all stakeholders in the society. The concept of *Tazkiyah* (growth and purification) requires active participation in the material world in order to build the earth and innovate to satisfy worldly needs (Gambling and Karim, 1991: 33).

However, all forms of productive work can be considered as an act of worship, provided that they are accompanied with pure intention to fulfil God's instructions, and that material enhancement and growth leads to social justice and spiritual enhancement. According to Al Ghazali (1987), 'Shariah as a law and code of conduct aims to improve the welfare of individuals in society, and adherence to this law will benefit people and the whole society, not only in this life, but also in the Hereafter'.

Therefore, it is very important that social welfare and the intention and motive of any financial innovation are for the greater good and benefit of individuals and society. If so, (Williams and Zinkin, 2010) they are performed in accordance with the injunctions of God. Thus, the concept of worship, in

Islam, is defined very broadly and recognises that mankind can be rewarded by performing both ritual acts and daily works.

However, for daily actions to be regarded as part of worship there are three conditions: (1) the action must be undertaken wholeheartedly for the sake of God, and not for another reason (e.g. the love of money or profit maximisation), although achieving worldly ends and making money in accordance with the guidance of Shariah is legitimate and the person would be rewarded for that, however, it has to be primarily for the sake of God; (2) the action must be in accordance with the Shariah (the Islamic Law), thus, the role of a religious body as a part of the governance of IFI; (3) it must not cause a Muslim to neglect existing obligations (Williams and Zinkin, 2010). Also this act should not cause harm to others in the society (e.g. financial innovation that does not comply with Shariah or result in financial fragility and harm to the economy and society).

2.6 Islamic Finance Instruments

Islam is not only about prohibitions, it also provides alternatives that would have a better impact on society as a whole. Islamic finance is based on financial principles that promote partnership and risk and reward sharing instruments. Some of those instruments are briefly outlined below (Visser, 2009: 54).

Mudaraba is a profit sharing contract, also known as *qirad* and trustee finance. The capital provider would provide the entire capital to the trustee who will provide labour and expertise to invest the capital in approved and acceptable investments under Shariah. A profit sharing ratio is agreed at the outset and the capital provider would bear the risk of any loss in the capital (Visser, 2009: 54).

Musharaka, is a profit and loss sharing agreement that is based on a partnership financing, it is a form of equity participation agreement. Profit is shared according to a pre-agreed ratio and losses are shared according to the capital ratio of each participant. *Musharak* has different forms, it can be amortised as a reduced equity over time or open-ended partnership (Yahia, 2010: 76).

Murabaha is a cost plus profit or mark-up contract. *Murabaha* is a trade contract which stipulates that one party buys a commodity for its own account and sells it on to the other party at the original price plus a mark-up. The mark-up is considered as a payment for the services provided by the financier and a guaranteed margin of profit (Abo Zaid, 2004: 23). The sale price is paid then according to the agreed intervals, in most cases over a period of time, as agreed between the parties to the agreement. This form of finance is very popular currently and heavily used by Islamic banks. A sub-contract of *Murabaha* called *Tawarruq*, which is translated as monetisation, is also used by Islamic banks. Under this contract the Islamic bank sells the commodity to the client on a *Murabaha* basis who then, sells it in the market on the spot price to generate the required cash (Visser, 2009: 57).

Ijara is a lease agreement, under which the financier purchases the required commodity and leases it to the other party, in this case, the client of the Islamic bank. On expiry of the lease term, the commodity could be sold to the lessee with the transfer of the legal title (Al Gamal, 2006: 67). This would be subject to the agreed terms between the parties.

Wakala is an agency agreement for a fee. The capital provider (*Muwakkil*) would provide the entire capital to the trustee (*Wakeel* or agent) who will provide labour and expertise to invest the capital (Ramadan, 2005: 86). The realised profit will be then paid to the investor i.e. the capital provider. The *Wakala* fee is agreed between the parties in advance as a flat fee and paid regardless of the generated profit from the investment.

Bai' al Salam is a sale contract where the buyer pays in advance for the goods for a future delivery. The goods do not need to exist at the time of the contract as long as it is described exactly and known as to both quality and quantity (Al Bouti, 2005: 134). The exact date and place of delivery should be also known. If the seller is unable to deliver, they may agree to postpone or the seller may provide the same goods as specified from another supplier for the same agreed price. This contract is, usually, applied to agricultural products or fungible manufactured goods that could be financed by an Islamic bank (Visser, 2009: 58).

Istisna', is a contract of manufacturing with progressive financing or a contract of ordering specified goods where the price is paid progressively according to delivery. Under this contract Islamic banks provide finance to a client by commissioning a supplier to manufacture the goods or complete a building work that is already specified and agreed with the bank's client. Payments are paid according to the progress of the job. This type of contract is also used for development finance products (Yahia, 2010: 116).

Qard hasan is a beneficence loan, on which no financial payment or otherwise is charged (Visser, 2009: 62). This principle is used, usually, by Islamic banks to provide current accounts where the client would deposit their money in the current account as a loan to the Islamic bank. The account does not pay any return or interest to the client.

Based on the above main principles of Islamic finance, many products and financial innovations are engineered and developed. This could be achieved by using one single principle or a combination of two or more in order to reach the desired outcome that complies with Shariah. However, in order to do that, Islamic financial institutions would require guidance from scholars and experts in Islamic commercial law and Shariah. This leads us to the next section that explains Sharia governance.

2.7 Shariah Compliance and Governance (SCG) of Islamic Financial Institutions (IFI)

The organisational structure of the Shariah supervision is formalised in various forms in different IFIs, we can assign the SCG as the generic framework for, the Shariah Control Committee (SCC), Shariah Supervisory Board (SSB) or Shariah Supervisory Committee (SSC). Different names, but the role is the same. The work of the SSC, which is chosen here as the most common name, includes all the supervisory elements and activities that are used to ensure the compatibility of IFIs with Shariah. The SSC ensures that the operations and all activities of an IFI are in accordance with Shariah requirements and rules according to the accredited and agreed legal opinions (*fatwa*), (Qattan in Khan & Muljawan, 2006: 273).

The SSC is an independent body that does not report to the board of directors or management of the IFI. The members of the SSC are appointed by a general meeting of the shareholders of the financial institution. This is in order to maintain their independence and credibility in supervising the IFI in its activities. They have the power to block any attempt to develop or launch a financial product that would be considered harmful to the society or not compliant with Shariah. Figure 2.2 below illustrates the Shariah compliance governance and structure of an IFI.

Figure 2.2: Shariah compliance governance and structure in IFIs

(Based on AAOIFI, 2014 Governance Standards)

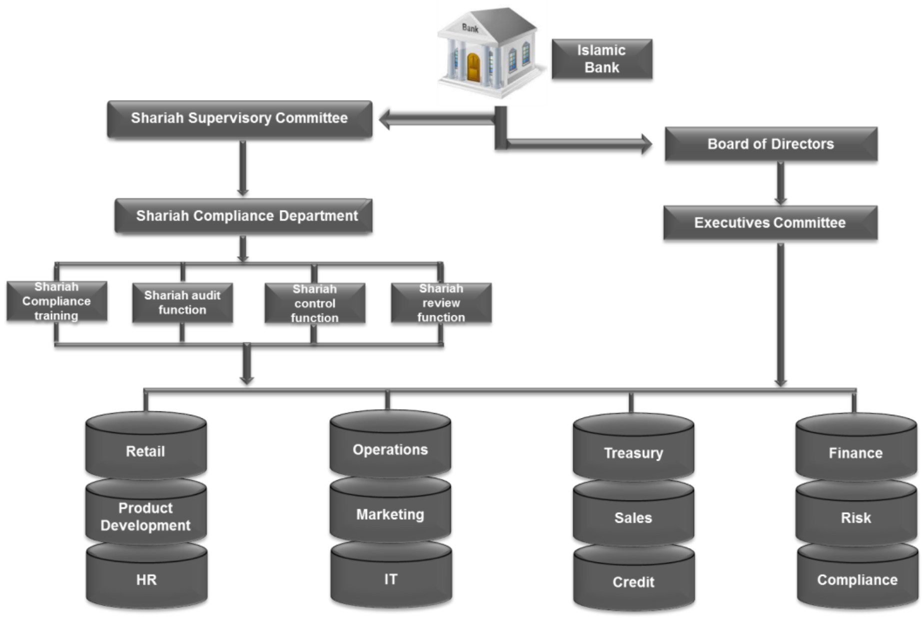


Figure 2.2 above shows the typical Shariah compliance governance structure in an IFI, and its independence as a supervisory and audit function in order to maintain its credibility. Due to the relatevely small size of most IFIs, they may not all have the sub-functions of the the Shariah compliance department, as shown in Figure 2.2 above.

2.8 Duties and Responsibilities of the SSC

The primary objectives of establishing the SSC as the Shariah governance framework are to advise IFIs in their operations, and to analyse and evaluate Shariah aspects of new products and services submitted by the IFI. In general, the main duties and responsibilities of the SSC can be summed up as follows.

2.8.1 Concept and structure of financial products

The SSC will evaluate the concept and structure of the new proposed financial innovation or product and will review the existing products. This would include approval of the financial innovation and product development cycle with their associated processes (Qattan in Khan & Muljawan, 2006: 273).

2.8.2 Documentation

The Shariah governance does not stop at the concept stage of the new product, it extends to its documentation as well. The SSC will vet meticulously and endorse all documents involved and these include the terms and conditions contained in the proposal, contracts, and agreements or other legal documentation used in executing the transactions. This would also include the product manual, marketing advertisements, sales illustrations and brochures used to describe the product (Nik, 2001). In doing that, the SSC is supported and assisted by a Shariah compliance department or internal adviser who will monitor the daily activities. They will, then, give their comments in order to ensure the compliance with the Shariah principles.

2.8.3 Shariah advisory

The SSC is required to advise the IFI on all Shariah related issues to concerned parties. This would entail detailing the Shariah position and formally communicating their opinion to the IFI (Qattan in Khan & Muljawan, 2006: 273).

2.8.4 Providing Shariah legal opinion

The SSC role is to provide their formal opinion as to matters of Shariah, or when approving new financial products, which can be made public for customers and the general public, who wish to know the basis of this Shariah opinion (Rammal, 2006).

2.8.5 Undertaking Shariah compliance audit

The SSC is responsible for undertaking a regular Shariah compliance audit that covers all operational and business activities in the IFI. They could do that themselves or by appointing someone else with the required qualifications to perform this task (Rammal, 2006). This task is, usually, fulfilled by the internal Shariah compliance department or adviser, the findings of the audit review will be reported to the SSC, who then provide their report to the shareholders and the board of directors of the IFI. This report is then made publicly available.

2.9 Major Differences Between IFIs and their Conventional Counterpart

Table 2.1 below summarises the main differences between Islamic banking and traditional banking as shareholder-owned for profit financial institutions. It does not aim to provide an exhaustive list or compare different structures of financial institutions, such as mutual institutions. It rather explains the major basic differences in relation to the approach of operations between Islamic banking and its counterpart, as commonly referred to, conventional banking, for a reader who does not know anything about Islamic banking or know very little.

Table 2.1: Main differences between IFIs and conventional financial institutions

Conventional banking	Islamic banking
Generation of profit	
Generates its income and profits from interest-based and speculative products. Has been criticised for not monitoring the effects of its activities and their effects on the customer and/or society as a whole.	Generates money in a productive way using trade, entrepreneurship and investment. Works in partnership with the customer and its activities help to promote economic growth and stability for society as a whole.
Speculation and risk	
Uses speculative instruments which can encourage excessive risk-taking. This can promote a culture of greed and creates 'toxic assets' where the value of the end commodity is not clear or has been over-valued. The result of these activities recently de-stabilised the global financial system, during the 'sub-prime'/ credit-crunch crisis, putting consumers, businesses and the global economy at risk (Plosser, 2009).	Avoids toxic assets and speculation by being asset-backed, resulting in a more stable financial system that was relatively unaffected by the recent credit-crunch crisis. Deposits are managed in a prudent way with investments only taking place in stable commodities and assets, such as property.
Transparency	
Has been criticised for not being transparent enough about its business and does not always explain to the customer how its money is being used by the bank.	Is committed to transparency and fairness, integrity and respect, putting the customer at the heart of its business. To illustrate: 1. IFI customers are made aware that savings accounts offer 'expected profits' and that the IFI uses their money in trades of low risk commodities (metals) and in the property finance products. 2. The whole premise of Islamic banking is that the customer and bank work together as trading partners towards a mutually profitable end. This is monitored by an expert independent body, the Sharia Supervisory Committee (SSC), to ensure that the IFI's activities do not only serve its own purposes but benefit the customer as well.

Use of customers' deposits	
Uses deposits in a range of activities that are not always in the interest of society. For example, it may fund a casino or betting shop even though this may be of detriment to the people that it serves.	Considers the impact of its activities on society and does not permit investment in certain industries such as tobacco, alcohol, pornography, gambling and arms.
Regulation	
Does not have a system of independent internal regulation to ensure that its products and activities meet minimum moral and ethical standards. Does not go above and beyond industry regulation to ensure that it is 'doing the right thing' for its customers and the society in which it operates. As a result, conventional banks may develop a culture that principally considers their own needs rather than those of their customers too.	Acts in a socially responsible way and, in general, has a culture of 'doing the right thing'. This is monitored by an independent panel of Sharia Scholars and an internal Shariah officer. Their work is similar in nature to an ethics committee/officer. Together they ensure that the IFI's operations, products and structure meet strict standards and its activities are genuinely 'good', not just for customers but for society as a whole.

As we have seen in Table 2.1 above, there are key differences between Islamic and conventional banks in terms of governance structure, product design and structure, profit, risk and transparency. The above table does not aim to provide a detailed list; it rather highlights the key differences.

2.10 Financial Innovation and Engineering

As the operations and financial products offered by IFIs are different to those of conventional banking, it is also the same regarding financial innovation and engineering. The processes and cycle of which might overlap and have common grounds with conventional innovation cycle, however, it differs and would undertake some additional processes and requirements to the traditional innovation and development concept. This is, clearly, due to the nature of the IFIs financial products and the required Shariah compliance structure and governance that they adhere to, as explained above.

IFIs have to meet the demands in the market and maintain their competitiveness by innovating and developing new financial products. This, however, has to be subjected to rigours processes to ensure any new financial innovation or new product idea fits with the framework of Shariah. The processes and framework for that would differ from an IFI to another. The aim of this study is to explore the current practices of IFIs regarding financial innovation and new product development and the Shariah governance around it.

This governance and control, as discussed above, could be the answer to many loopholes in the current practices of the conventional system, as discussed in Chapter 5, in relation to financial innovation and engineering. Financial innovation and engineering, therefore, is driven by three things: changes in demand conditions, changes in supply conditions and changes in regulatory requirements. Such changes promote financial institutions, in general, to devise innovative new products that would allow them to remain in the market and be profitable. This process is called financial innovation or engineering (Iqbal and Khan, 2005: 2).

2.10.1 Scope of financial innovation and engineering

Financial products offered by IFIs have, so far, been substantially limited to the classical principles of Islamic finance that were developed over 1400 years ago. While they have been very useful and provided the foundations for IFIs, there is not any reason for the Islamic finance industry to be restricted to those principles (Iqbal and Khan, 2005: 11). Shariah provides the flexibility for more innovation and engineering of new financial contracts that meet the market demands, such instruments are e.g. *ijtihad* (scholarly interpretation and efforts) analogy and other possible instruments (see figure 2.1for the sources of Shariah and methods used to interpret Shariah rules).

2.10.2 Innovation and new product development in finance

Financial innovation surged in the 1970s, as a result of consistent global economic growth, and since then has transformed the dynamics of the financial industry (Podolski, 1986:105); see Chapter 3, section 3.7.3 for more details. The stream of innovation increased post a long period of stagnation, which started during the great depression and stayed until 1950s (Miller and Freisen, 1982). Factors determining innovation in Islamic finance would be similar to those of the conventional system; however the nature of innovation could be more complex due to the Shariah requirements.

As Islamic banking is relatively new, innovation in functional terms would take two forms, the inert type and the creative innovation type. The former implies that the industry has to provide an array of products to fulfil financial functions, such as mobilising resources, allocating capital and managing risks. These products already exist in conventional forms and inert innovation helps IFIs to catch up with their conventional counterparts. This is in order to meet the existing market needs, that already created by conventional banks, in a Shariah compliant way. The latter would enable the Islamic finance industry to develop new innovative products (Ahmed, 2011: 9) that are unique to the financial market.

2.11 Conclusion

This chapter provides the context for the research by explaining key aspects related to the phenomenon in question. Providing the context of the research would pave the way for simplifying the complexity of the phenomenon and put the reader on a smooth path to facilitate easy understanding of the chapters that follow.

Islamic finance is unique in its characteristics and nature as it provides a new approach to finance and undertaking financial and banking operations. Financial products offered by Islamic banks should be asset-backed and generated from trading rather than a lending/borrowing transaction. This approach and the Shariah governance, which regulates the financial innovation and engineering cycle, would offer an insight that could be very valuable. It provides a new perspective and conceptual framework to the existing financial innovation literature.

Current financial products of IFIs can be one of two types, existing conventional products that were reengineered and structured to meet Shariah requirements, which is the dominant type, or new innovation that does not have precedence. This process is still ad hoc and would require a clear theoretical framework and processes, which this study has attempted to achieve. The next chapter (Chapter 3) will provide the relevant review of the academic literature, with an account of previous work and identified gaps in the literature. This research attempts to address such gaps as applicable and set out in the research objective.

Chapter 3: Literature Review

3.1 Introduction

The previous chapter (Chapter 2) provided the context of this research by discussing issues related to Islamic finance, its definition, governance in IFIs, main differences with traditional banks and the role of the SSC. Having established the context of this research, this chapter reviews the existing theoretical and empirical works on Islamic finance and banking, reflecting on conventional theories where relevant, in relation to financial innovation and engineering, product development, Islamic commercial law and other related topics. The aim is to highlight the weaknesses of existing work, with a view to identifying the areas that can be explored for this thesis.

It is important, however, to give a brief explanation about what Islamic finance is as a starting point. Islamic finance is a way to put Islamic principles and teachings about the economy into practice. It attempts to develop a specific Islamic version of economics, which is based upon the precepts of the holy book of Muslims, the Qur'an, and on the *Sunnah*[1] (Visser, 2009:1).

This research aims to explore to explore what constitutes a religiously guided process towards financial innovation and engineering. Also what makes the financial innovation process different from conventional interest-based financial products? The study explores in-depth the process and factors of product development and innovation in Islamic finance and the role of Shariah as a boundary object in the innovation process. In order to do that, a literature review is required to critically review existing work and theory that can be built on and identify gaps in the literature.

This chapter is divided into themes, each theme concentrates on a particular issue within the field of Islamic finance and banking as a whole. Themes covered in this review are: product development, financial engineering and innovations and its relation to financial crisis, regulatory implications, risks,

---

[1] The *Sunnah* is the practice and sayings of Prophet Muhammad (peace be upon him) and is the second source of authority and legislation in Islam after the Qur'an.

corporate governance, Islamic financial principles and techniques, structuring Islamic financial transactions, usury (*riba*), critics and defenders of Islamic finance and banking, the emergence of Islamic finance, Islamic economics and ethics, legal stratagems, financial exclusion, Islamic banking in the West.

Therefore, the above themes are believed to be related to this subject directly or indirectly. Hence, it was important to critically review previous writings in this domain.

3.2 Differences Between Islamic and Conventional Banking

Ahmad (1993) argues that Islamic banks, like all conventional banks, are in the business of financial intermediation to perform a socially useful role in managing financial resources. The difference is conventional banks carry out these functions on the basis of interest. Unlike conventional banks, Islamic banks seek to perform the same functions by developing a new relationship with their clients, without indulging in interest baring transactions which are prohibited in Islam. Wilson (2010) has argued that the Islamic financial system is not simply about prohibitions, it provides guidance on how to do business in line with religious teachings, which can be considered positively from an ethical perspective.

It is important, however, to mention that commercial activities under Shariah are subject to the ban on *riba* (interest) in addition to other restrictions. These other restrictions include, but are not limited to, the ban on *gharar* (uncertainty) and *maysir* (gambling and speculation) in financial transactions (Obaidullah, 2005:29).

Visser (2009:81) further argues that when discussing what makes Islamic banking different from its conventional counterpart, we should discuss the financial instruments offered by Islamic banks, their funding and their sources of funds. As Islamic banks have to follow the teachings of Shariah for Islamic finance, this requires that not only their financing (lending) but also their funding should be from Shariah compliant sources and transactions. Return cannot be guaranteed on money deposited with Islamic banks as savings account are based on profit sharing instruments, unlike conventional banks. Islamic banks are, therefore, permitted to issue shares, but not conventional interest bearing debt.

3.3 Islamic Finance Principles and Techniques

Visser (2009) discusses Islamic finance and its principles in general, highlighting their use and operation in Islamic banking. He argues and questions whether the restrictions in Islamic finance on some financial activities, such as derivatives, options and future contracts would enable Islamic finance to provide a wide spectrum of financial instruments that sufficiently serve the needs of a developed, or even at least developing, economy without compromising its principles. Visser (2009: 140) suggests that a country considering the adaptation of Islamic finance, across-the-board, and the operation of the economy exclusively according to its principles, might be condemned to permanent low growth rates.

Visser (2009: 5), controversially, attributes the origins of Islamic finance as known and applied to Abu Al A'laa Al Mawdudi in 1941, which most of the Arab writers would strongly disagree with. Smith (2006) has addressed this issue by conducting a case study on three Gulf States tracing the origins of Islamic finance and the pioneering Arabs behind its emergence. Al Qaradaghi (2010) also disagrees with Visser's claim as he discusses in his work this argument by stating that the beginning of Islamic economics in the modern days is attributed to the pioneering Arabs in setting up Islamic banks, its theories, system and its relationship with the conventional economic system.

Visser (2009) argues that the efforts by Muslims to establish a well-recognised Islamic economics system have been a frustrating experience with little success even across other religions. He asserts that Islamic finance is a mere facet of important Islamic teachings, with implications for finance. It is something that he shares with Ramadan (2009) who argues that there is nothing called Islamic economics or Islamic finance as an actual system rather; it is a set of ethics that govern the conduct of business transactions.

3.3.1 *Murabaha* (cost plus profit sale agreement) contract

Islamic finance has developed different techniques that are rooted in Shariah to offer Shariah compliant financial products. The most common techniques that are used frequently by Islamic banks are *mudaraba* (profit sharing agreement), *musharaka* (partnership agreement), *wakala* (agency agreement) and *ijarah* (lease agreement). However, Abdul Azeem (2004) discusses specifically the *murabaha* (cost plus profit or credit sale agreement) technique in details, due to its widespread use in IFIs, and its applications in contemporary financial transactions as practised by Islamic banks. He argues that as the *murabaha* technique is widespread and used by Islamic banks as a tool for liquidity and inter-banking placements, it was very important to discuss *murabaha* in detail. He discusses the critiques of this type of sale among jurists and the Shariah adjustment to the simple *murabaha* transaction and the newly devised version of it, *murabaha* for the purchaser order, which is practised widely in Islamic banking.

Abdul Azeem (2004) suggests that a bilateral promise between the Islamic bank and the client in the *murabaha* for the purchaser order is acceptable under Shariah as it forms the introduction to a valid sale contract. A bilateral promise in this case is where the bank promises the client that it will sell the commodity to the client; in return, the client will promise the bank that he/she will buy the commodity from the bank on a *murabaha* contract after the bank purchases it from the supplier. This is something that many Shariah jurists (see e.g. Zuhaili, 2005) disapprove of, as a mutual bilateral promise is considered a binding forward sale contract which is not permissible under Shariah. Shariah may only permit a unilateral (one-sided) promise in the case of the *murabaha* for the purchaser order agreement.

3.4 The Difference Between Usury (*Riba*) and Interest

Mews and Abraham (2007) discuss the concept of usury; they argue that in the Christian tradition, usury always meant the concept of extra money demanded in excess of a loan. Whereas, interest is perceived as a just compensation to the lender for the loan. They tried to draw a distinction between usury as illegitimate predatory lending and interest as an acceptable compensation in order to form a common ground between this distinction and the ethical financial principles in both Islam and Christianity. Mews and Abraham (2007) argues that this is an old argument dressed in a contemporary way to legitimise interest as a compensation payment to the lender. This argument has been clearly rejected by the majority of Muslim scholars and jurists, such as Al Zuhaili (2005) who argued that usury and interest is the same thing and is prohibited in Islam.

Hassan (1992:107) defines usury as a return that someone gets from another which is not a gift and not a compensation of work performed, without facing any risk for the money invested. This definition is very broad and does not reflect the definition in the classical books of jurisprudence (*fiqh*) that define usury or interest as any benefit (this includes money and otherwise) received by the lender over the loan or for an extension of time for the payment of the owed sum. According to Mujahid (d. 722 C.E), *riba* of the pre-Islamic period was that "if a person took a loan from another he or she would say: I would give you so such money if you grant me extension of time" (Mannan, 1980).

Arrif (1982) clarifies that the argument concerning the distinction between interest and usury in the late middle ages in Europe had its impact on some writers, who applied it as it is to make a distinction between *riba* and interest on the basis that interest is not regarded as *riba* as long as its rate is not usurious. There is a controversy over the differences between *'al riba'* or usury and 'interest'. Khan (1995) makes it clear that there is no difference between forbidding *riba* and interest, and they are the same thing. He defines interest simply as "it is any increase (large or small, nominal or real) received on a loan".

Mannan (1980) has explained that if the meaning of *riba* is viewed in its correct historical perspective, there appears to be no difference between *riba* and interest. An overall view of all modern theories of interest has revealed that the economists have failed to discover a clear answer as to why interest is paid, on the other hand, the Islamic theory of capital does recognise the share of capital in national wealth only to the extent of its contribution, to be determined as a variable percentage of profits rather than the fixed percentage of capital itself (Khan, 1995).

Concerning this issue, Khan (1994) has argued that this claim does not deserve serious attention, because it is clearly stated in the Qur'an that at the expiry of the time limit of a loan, the lender is only permitted to receive his principal without any addition. Actually, this distinction does not have any theoretical base; however, it is more or less a pragmatic attempt to 'Islamize' the un-Islamic situation existing today in Muslim countries.

3.5 Emergence of Islamic Banking

Smith's (2006) study develops an analytical framework to explain the emergence of Islamic banking. She argues that her approach in conducting the study cannot be fully understood without recognising Islamic finance as a constructivist project. Then she builds on this argument by studying Islamic banks, their origins and development in the Gulf States, their negotiation with the global conventional finance and their relationship to political Islam. The author employs multi case studies method in collecting her data, the three Gulf Countries included as case studies are Saudi Arabia, Bahrain and Kuwait.

She defines Strategic Constructivism as the act of making an institution work towards alternative political objectives via symbolic action. Conceptually, the study tries to introduce a framework for incorporating symbolic power into the study of institutions with the aim to generate a political theory of institutional change.

Smith (2006) implies that the emergence of Islamic banking enabled the Islamists to put capital in this industry and use it with a hidden agenda for political gains. The study ignores the fact that the Islamic finance principles and techniques existed over 1400 years ago and developed over time to accommodate different commercial needs (El-Gamal, 2006 and Visser, 2009). The study focuses on the post-colonial period of the history of the Gulf States, it was very normal, after having gained their independence, to develop their financial system in a way that complies with Shariah and is compatible with the existing conventional finance and banking system. However, the author believes that this development was for political reasons with ulterior motives.

This shows that the study was heavily subjective rather than objective as it ignored some facts in the development of the Islamic banking, as mentioned above, which would argue against the author's theory. This view would imply that this argument permeate Western studies of Islamic finance. A counter argument would state that there is, generally, a strong link between politics and financial policies. Moreover, countries have the right to determine their own political ideologies and destinies without needing the approval from their colonial rulers, hence, to suggest otherwise it would imply a colonial attitude.

Hence, Smith (2006) in her study addresses the political motive in the development of Islamic banking and the relationship between petro-dollar industry in the Gulf States and the emergence of Islamic banking.

3.6 Islamic Banking and Finance: Critics and Defenders

Al-Bouti, (2005); Al-Zuhayli, (2002); and Usmani, (2005) discuss different financial transactions, sales and other financial activities in Shariah in a generic way, but do not go into details with their current application in Islamic banks. They do not offer any sort of Shariah framework for Islamic financial engineering, this is understandable and expected from such writings as they do not draw on the practical banking and finance expertise. They offer glimpses of different juristic opinions of the four schools of thoughts with regards to sale contracts and other financial transactions. However on the other hand, Abdul Rahman, (2005) and Dwabeh, (2004) have tackled the issue of Islamic financial transactions in general, they discuss them from their applications in Islamic banks such as basic savings accounts, letter of credits and insurance.

It is worth mentioning that Al-Zuhayli's (2007a) work has discussed all financial transactions that are addressed in the classical books of *fiqh* (jurisprudence). It discusses different juristic opinions on wide variety of financial transactions. This, however, could be a critique at the same time of his work as not being specialised and does not focus in-depth on specific pressing issues in Islamic finance and banking. Furthermore, Al-Zuhayli (2007b) discusses the differences between Islamic and conventional interest-based banks and suspicions surrounding Islamic banks and their operations. He, as an advocate of Islamic banking, analyses their functions, objectives and role in social growth and development.

El-Gamal (2006), on the other hand, has been a voice of criticism and suspicion of current practices of Islamic banks. He argues that Islamic banks have diverted from the objectives of Islamic finance and the ultimate aim of the Islamic banking pioneers. He correctly points out that Islamic banks are mimicking the financial products offered by conventional banks by labelling it as 'Shariah compliant' or Islamic; rather than creating a distinctive Islamic financial products that serve the real economy. In his opinion, Islamic banks are driven by profit maximisation in focusing more on the legal form of the financial transactions instead of following the spirit of Shariah in ensuring that these transactions are just and fair. He continues criticising financial institutions for using the designation of 'Islamic' in branding their financial products, which are normally more expensive than their conventional counterparts, to create a monopoly in a competitive market.

Kamali (2000) raised the issue of permissibility of options in Islam whilst discussing the opinion of mainstream scholars. His argument states that in the light of Shariah rule of permissibility which renders all commercial transactions permissible in the absence of a clear prohibition. This is the opinion of the Mecca-based *Fiqh* Academy and also of many Islamic scholars who have proscribed futures trading and declared it totally forbidden. This body of opinion is founded on the analysis that futures' trading does not fulfil the requirements of Islamic law of sale contract. This opinion, according to Kamali, did not give a due consideration to the fact that futures trading are a new phenomenon which has no parallel in the conventional Islamic code of transactions. Therefore, it should be governed by a different set of rules. This approach also fails to relate the issue at hand to the normative guidance of the Qur'an and *Sunnah*, which can support different calibre research and an affirmative ruling on the subject.

Alchaar *et al* (2009) has also contributed with selected subjects of Islamic financial transactions including financial techniques, *sukuk*, *takaful*, corporate governance and financial reporting, without a clear and informative focus on the issue of financial innovation and engineering. Al-Barwari (2005), on the other hand, discusses analytically the financial market from an Islamic perspective. He discusses the nature and functionality of the financial market analysing its activities in line with Shariah, and how some unacceptable transactions can be adjusted to meet Shariah requirements. He attempted to offers a brief vision on how the financial market can interact with Islamic finance and investment approach.

Although the above literature offers a wide variety and understanding of the Islamic financial transactions, it is still very similar to some extent and does not tackle the issue of financial innovation and product development and the role of Shariah in setting its requirements. There is clearly a gap in the literature in dealing with the subject of Islamic financial engineering from both commercial and Islamic jurisprudence perspectives that deal with the issue in detail incorporating the higher Shariah objectives.

3.7 Innovation

3.7.1 Definition of innovation

Innovation is defined as a management process that is extremely driven by the organisational structure and context, in addition to, the influence of the macro system in which the organisation exists (Trott, 2008). However, Kumar and Phrommathed (2005) are of the view that 'innovation' is a repeated process which is commenced by the perception of a new market or service opportunity for technology-based innovation, which results in development, production and marketing tasks in hunting for commercial success. This definition includes two distinctions: the innovation process comprises technological development combined with the market introduction, and the innovation process is iterative. Freeman (1982) put it clearly that the survival of the financial system is by keeping innovating financial products that are compatible with the new economic and financial changes in the world. To not innovate is to die.

Academic research has explored the design of financial innovations and their impact on the financial system in recent decades, see e.g. Allen and Gale (1988, 1994); Bahattacharyya and Nada (1996); and Duffle and Rahi (1995). However, according to Boot and Thakor (1997), this academic research tackled the issue from three perspectives; the first is the research in addressing financial innovation which attempted to explain factors that motivate financial innovation and structuring securities. The second perspective in the literature has addressed the question of the functionality of the banking system, and whether we should look into separating banking functionality, i.e. investment and commercial, or not.

Finally, as Boot and Thakor (1997) summarise that, others looked into it from a more generic perspective with a focus on financial system design, which leads us to the third perspective in the literature. The key parts of this literature, which adopted a more holistic approach are markets, institutions, how risk-sharing ventures are affected by the design of financial system, corporate governance, the structure of a financial system, cost of funds and structure of financial contracts.

Hence, Frame and White (2010: 3) define financial innovation as: something new which helps reduce costs, risks or provide an improved product, service or instrument that better meets the satisfaction of participants in the financial system. Financial innovation can be categorised as new products (e.g. subprime mortgages), new services (e.g. internet banking), new production processes (e.g. credit scoring) or new organisational forms (e.g. internet only banks).

3.7.2 Nature and theory of financial innovation

Anderloni *et al* (2009: 4) argue that financial innovation is a reflection, and partly a cause, of structural changes evident in many financial systems since the early 1990s. During this period a general trend towards securitisation (financial intermediation with a counterpart of tradable financial assets) has emerged, and the use of derivative, instruments and contracts. Product innovation, as a type of innovation, is the creation of new financial instruments, techniques, contracts and markets.

Innovation has been a subject of debate for many years; Schumpeter (1934, 1939 and 1942) was the first economist among others to highlight the necessity for new product development as stimuli to economic growth. According to Trott (2008) the cyclical innovation view can be traced to Marx who was the first to mention that innovations could be related to waves of economic growth. This is because; early observations concluded that economic growth does not take place in a regular manner. It seems to happen in waves of activity, signalling the critical impact of external elements on economic development.

Thereafter, others like Schumpeter (1934, 1939); Kondratieff (1935/51); and Abernathy and Utterback (1978) have debated the long-wave theory of innovation. A number of studies (see e.g. Simon, 1957; Woodward, 1965) of innovation were conducted that focused on the internal features of the innovation process within the economy. These studies aimed to look at economics, organisational behaviour and business management. This has included the generation of new knowledge, the application of this knowledge in the product development processes and the commercial exploitation of these products in relation to the generation of financial return. A new theoretical framework was developed as a result of these studies with the objective of understanding how organisations managed the features above and why some of them seemed to be more successful.

3.7.3 Three Schumpeterian schools of innovation

The literature on innovation, according to Tzeng (2009), is not limited to the Schumpeterian tradition. There are other important schools as well that established their theories on classical sociologists, philosophers, and the natural sciences. The configuration school (e.g., Miller & Friesen 1982), derived from the Weberian tradition of ideal type, provides efficient ways to help classify innovative organisations.

The knowledge management school (e.g., Nonaka, 1994), based on Polanyi's theory of personal knowledge, explores the conversion process between tacit and explicit knowledge. The cluster school (e.g., Porter, 1990), for its part, draws from Marshallian externalities to study how geographical proximities between firms and its suppliers, customers, and competitors can lead to more innovative products (Tzeng, 2009).

Moreover, the complexity adaptive systems school (e.g., Anderson, 1999), which originated from physical science, aims to better understand the nonlinear and dynamic relations between the innovative agent and its environment. The population ecology school (e.g., Aldrich & Martinez, 2001), which is built on biological science, researches on the process of variation, selection, and retention to calculate the aggregate survival rate of firms in the evolution of technological innovation (Tzeng, 2009).

Since Schumpeter's work the debate has evolved with more recent studies (Chandler, 1962; Nelson and Winter, 1982; Cohen and Levinthal, 1990; Prahalad and Hamel, 1990; Pavitt, 1990; Patel and Pavitt 2000) with relation to what enhances innovative performance, which also offered a better understanding of innovative management.

Financial innovation has been a concomitant of economic development from the beginning of the modern financial system. Economists failed to isolate financial innovation as a subject deserving serious attention (although they were aware of it), until it started to be blamed for causing parametric instability in the demand for money function. The topic of financial innovation was neglected up to 1970s, and more concerted consideration to this subject did not develop until after the mid-1970s (Podolski, 1986:105).

Pawley (1993: 2), argued the issue of whether financial regulations are driven by financial innovation as responding to the changes in the financial and banking system or *vice versa*. He discusses the issue of financial innovation and offshore banking transactions as an objective for avoiding regulations.

Sinkey (1992) also argues that product innovation is driven by the desire of circumventing prudential and monetary regulations imposed by financial authorities and central banks.

This argument is worth researching its applicability on financial innovation in Islamic finance and banking system. Innovations in Islamic finance are meant to follow the principles of Shariah and Islamic business ethics to be acceptable as Shariah compliant financial activities. Moreover, in the case of Islamic finance, new taxation and financial regulations have played a vital role in the development of Islamic financial innovation by responding to this change in order to create a level playing field for Islamic finance. This has resulted in a regulatory-induced innovation which is all about adhering to regulations and Shariah law rather than circumventing them, as the case may be with its conventional counterpart.

3.7.4 Innovation orientation

Few studies within the large spectrum of the innovation literature have addressed the concept of innovation orientation. This research did not find, as far as it is aware, any study in the innovation literature that addresses a religiously-oriented innovation concept. The earliest of these articles, that addressed innovation orientation as a concept, is from Manu (1992: 334), who explains innovation orientation as encompassing ‘‘the total innovation programmes of companies and is strategic in nature because it provides direction in dealing with markets’’. Manu and Sriram (1996: 81) conceptualise innovation orientation as a multicomponent construct (see also: Worren, Moore, and Cardona, 2002: 1127; Amabile, 1997; Keller and Warrack, 2002: 18). A further dimension of innovation orientation is the social impact. This poses potential difficulties of supporting a social issue that organisations identify with a desire to support it, but they do not always act on that desire (Sonenshein, et al., (2014).

Berthon, Hulbert, and Pitt (1999: 37) define innovation orientation in relation to technological superiority: firms that ‘‘devote their energy toward inventing and refining superior products.’’ This conceptualisation consists of both openness to innovation (Zaltman, Duncan and Holbek, 1973) and a capacity to innovate (Burns and Stalker, 1977). This latter perspective of innovation orientation, according to Siguaw, Simpson and Enz (2006), overlaps Hurley and Hult's (1998: 44) conceptualisation of innovativeness as ''the notion of openness to new ideas as an aspect of a firm's culture'' and Hult, Hurley, and Knight's (2004: 430) view of innovativeness ''as the capacity to introduce some new process, product, or idea in the organisation.'' Innovation requires, according to Scarbrough, et al., (2015), collaboration among groups possessing specialised expertise in order to coordinate the innovation process, which poses a real challenge for the organisation.

3.7.5 The relation between innovation and financial crisis

Academic research has also explored the main causes of financial crises in recent decades, (see e.g. Persons and Warther, 1997; Bahattacharyya and Nada, 2000; Finnerty, 1992; and Duska, 2009). However, these researches tackled the issue of financial crises from different perspectives. Some examined separating banking functionality i.e. investment and retail, others looked into it from a financial innovation perspective, for example, competition in the financial market and complexity of this innovation.

Some academic research (see Kaminsky and Reinhart, 1999, 2000), states that, there is a major problem with the current financial system in the new capitalist era, namely that this financial system is under regulated and requires a fundamental reform. In contrast, there are some emerging financial systems, such as the Islamic finance and banking system, which has survived the recent financial crisis, in 2008, with minimum effects due to the characteristics of this system.

The empirical literature on banking practices have mainly focused on the U.S. banking system (Berger, 1995; Angbazo, 1997; De Young and Rice, 2004; Stiroh and Rumble, 2006; Hirtle and Stiroh, 2007) and other banking systems in the Western and developed countries only, e.g. New Zealand (To and Tripe, 2002), Australia (Williams, 2003), Greece (Pasiouras and Kosmidou, 2007; Kosmidou et al., 2007; Athanasoglou et al., 2008; Kosmidou and Zopounidis, 2008). Given the relation between the well-being of the banking sector and the growth of the economy, knowledge of the underlying factors that influence the financial sector's stability is therefore essential not only for the managers of the banks, but for numerous stakeholders such as the central banks, governments, and other financial authorities. Knowledge of these factors would also help the regulatory authorities and banks formulate policies going forward for improved stability of the banking sector and financial innovation.

Overall in the literature, both interpretive and positivist epistemologies were adopted, qualitative and quantitative methods were employed with dominance of the latter, and data collection involved case studies, financial sampling, surveys, financial reporting and official statistics. Kling (2010), however, argues that the main focus in the literature was on two competing narratives: moral failure and cognitive failure. The capital regulations played a fundamental role in fostering the behaviour that created the financial crisis, because they discouraged traditional mortgage lending and instead encouraged securitization.

3.8 Product Development

3.8.1 Definition of product development

Product development is defined by Smith and Reinertsen (1998: 167), as ‘a process of gradually building up a body of information until it eventually provides a complete formula for manufacturing a new product’. However, Ulrich and Eppinger (2008: 2) look at the definition of product development from a market angle and define it as ‘the set of activities beginning with the perception of a market opportunity and ending in the production, sales and delivery of the product’.

These definitions outline the product development process in general however; one may say that the development process may differ subject to requirements of different industries. Therefore, product development in financial services has also its requirements and characteristics, which would be different from other industries. The same view would also apply on product development in Islamic finance due to its structure and requirements.

3.8.2 Importance of product development

Product development is a key requirement for Islamic banks to compete and offer alternatives to conventional banks. This is because one of the important tactics of product differentiation that many firms in general and banks in particular have implemented in order to have a competitive advantage in the marketplace; is efficient new product development and the successful introduction of new products into markets (Kumar and Phrommathed, 2005).

Ahmed (2011) criticises the current practices of Islamic banks, of mimicking the conventional products and labelling them as Shariah compliant products, he quotes authors who have raised the same issue of criticism, such as El-Gamal (2006).

3.8.3 Product development process

Ahmed (2011) describes the product development cycle as designed for conventional financial product development, then, he adds the Shariah controls steps in the cycle. He refrains from diving deeper into the tools and techniques of Shariah, mainly the principles of jurisprudence (*usoul al fiqh*). This is essential in extracting new Shariah rulings to address arising issues in Islamic finance. He briefly touched on certain aspects of the objectives of Shariah (*maqased al* Shariah) without clearly incorporating those objectives in the product development cycle.

This is, also, a key and main differentiator of Islamic financial product development process in developing products that meet the objectives of Shariah. The cycle of product development and its different stages should be identified clearly. A stage in product development, as Li *et al* (2006) sate, is simply portrayed as a black box, which inputs are built on and flow from the previous stage, and which outputs flow as inputs for the next stage.

Ahmed (2011) divides the process of product development into three phases, idea generation and acceptance, converting concept to product and commercialisation. He shows a good understanding of the product development process when he discusses these three phases. However, one may argue that this division is not accurate and does not reflect the full cycle of product development as there are some other aspects that need to be considered, such as post product launch.

The commercialisation phase does not reflect what it entails. It normally refers to the marketing stage of the product cycle which includes the product management stage. Hence, a clear distinction here with regards to this matter would be helpful. McGrath (1996), in contrast, divides the product development cycle into seven stages; although someone may argue that he combines product development with product management. These stages, as McGrath (1996) argues, are decision making, project team organisation, development activity structure, development tools and techniques, product strategy process, technology management and pipeline management.

3.8.4 Product development in Islamic banking

El-Gamal (2006) critically evaluates the expression of “Islamic finance” suggesting two competing forces at work. The noun ‘finance’ suggests that Islamic financial institutions deal with the allocation of financial credit and risk. Therefore, this means that Islamic finance must be, in essence, similar to other forms of finance. However, the adjective ‘Islamic’ suggests some fundamental differences between Islamic finance and its conventional counterpart. Commentators on the theory and practice of Islamic finance and the product engineering process sense a tension between being essentially similar to conventional finance (in terms of competitiveness and efficiency) and attempts to preserve its unique Islamic character. One of the key differentiators between Islamic and conventional product development, is that Islamic product development is either asset based or asset backed products, unlike its conventional counterpart.

Katila and Ahuja (2002) argue that a competitive advantage can be obtained by Islamic financial institutions through a process of strategic innovation, which in addition to other factors, will require the development of at least some new knowledge and capabilities. Govindarajan and Trimble (2005) also added that this will have high potential for income growth. Lyons *et al*. (2007) further discusses that new ideas must be developed, implemented and delivered to customers to create commercial revenue.

There has been a major impact on Islamic financial services industry and its development and challenges that enhanced product development. This impact resulted from globalisation, transparency and capital movement. The main challenge is the Islamic financial services industry's ability to develop financial products that fully comply with Shariah. Therefore, as Islamic finance and banking is a new industry, it is critical that products and services continue to be developed on regular basis. This also will require great emphasis on the quality and diversity of these financial products and services provided by Islamic financial institutions and the challenges that they face in that regard (Al-Salem, 2009).

El-Gamal (2006) correctly states that there is a gap in addressing the processes of financial engineering, as the Shariah supervisory committees of IFIs put more emphasis on the wording of the legal contracts, rather than ensuring that these contracts meet the spirit of Shariah.

3.8.5 Islamic ethics and financial product development and engineering

There are two primary sources of normative business ethics and code of conduct for financial activities in Islam. These two sources are Qur'an (the Muslim Holy Book) and *Sunnah* (the tradition of Prophet Muhammad (peace be upon him)). When examining financial engineering and product development from Islamic ethical point of view, we should view it from following main criteria, justice and balance, transparency, honesty, trust and benevolence (Beekun and Badawi, 2005). With these criteria in mind, Islam permits the contracting parties of a developed financial product to agree on any conditions as long as they are within the tenet of Shariah, and do not violate any Shariah ruling with regards to financial contracts (Iqbal and Khan, 2005).

Beekun and Badawi (2005) rightly argue that Islam is a full way of life, not just a religion. Therefore, business ethics and the Shariah objectives cannot be ignored or separated in financial engineering and product development. The Islamic ethical system demands for the rights of both the primary and derivative stakeholders, in the process of developing and offering financial products, to be respected. This approach will not allow exploitation, nepotism and other human ills and unethical business practices. Instead of working towards maximising profits by any means, as an objective of financial engineering, Islam seeks value maximisation within the parameter of ethical principles in Islam as mentioned above.

It is clear from the literature review that Islamic finance is trying to take its place in the global financial market by making some concessions to catch up, to some extent, with its conventional counterpart. This will, essentially, include by default the financial engineering and product development methodology, which may eventually result in Islamic finance losing its identity. Therefore, it is important that Islamic finance emphasises its unique characteristics manifested in its product development approach to preserve its identity.

Hence, it is vital, in order to achieve this objective, to address this identified gap in the literature to structure a possible unified framework for Islamic financial product development. Therefore, this study aims to address this gap in the literature by developing a framework for financial innovation and engineering that incorporates both Shariah and business requirements. This framework will help forming the basis in standardising the process of Islamic financial product development across the industry. It will further protect Islamic banking and finance from losing its unique identity and going astray from its main objectives and role; providing financial stability as a model for resilient financial system.

3.9 Regulatory Challenges

Archer and Abdel Karim (2007) discuss the regulatory challenge dimensions that are required for the development of Islamic finance and its economic needs. They argue that the challenge is wider than what the regulators would expect, which is to some extent a slight exaggeration, if we take e.g. the case of the UK and the regulatory adjustments that were issued to accommodate Islamic banking.

They, rightly, highlighted the challenge that faces the experts in the Islamic commercial jurisprudence to raise awareness of the requirements for a viable legal and regulatory structure for Islamic finance.

Alexakis and Tasikouras (2009) state that the main regulatory issues faced by Islamic financial institutions are due to its unique characteristics compared to conventional financial institutions. They assert that Islamic banks due to their particularities are better to adhere to the existing capital adequacy standards and build on them, adjusting where necessary, rather than adapting the Basel Accord for capital adequacy. This is an approach taken by the Accounting and Auditing Organisation for Islamic Financial Institutions (AAOIFI). This is in addition to, the issues of lack of transparency, consistency and rating agencies.

Archer and Abdel Karim (2007) also argued that one of the main regulatory issues for Islamic banks operating in highly developed financial markets, such as the UK is the treatment of *mudarabah* investment accounts as deposit accounts. Banks are defined in these markets as “deposit- taking financial institutions”, whereas from banking regulatory perspective and legal status deposits are considered debt and being ‘capital certain’.

Islamic banks take deposits on a profit sharing basis, where the bank invests the available deposits in the investment accounts and then shares the generated profit with the depositors. The profit sharing contracts do not guarantee the capital as this will render the contract non-Shariah compliant. However, this issue is not new with regards to Islamic banks as deposit-taking, and was dealt with before in different writings (see Kamali, 2000). So, the authors did not provide any new contribution or possible solution rather than articulating an existing concerns for deposit-taking in Islamic banks which could be the first step towards a possible solution.

3.10 Risks in Islamic Banking

Greening and Iqbal (2007) discuss the risk element in banking in general. They, then, focus on extra risks that Islamic banks have to consider due to the nature of their operation and products. They state that a financial review would take into account a review of financial conditions and certain issues with regards to the bank exposure to risk and the management of this risk. The main technique used to analyse financial risk is by undertaking a robust review of a bank’s balance sheet. This will also include important qualitative factors, and view financial ratios within a wide spectrum of risk assessment, risk management, trends and changes to such risks.

For Islamic banks however, as Greening and Iqbal (2007) state, such assessment must consider the nature of the contracts and principles underlying financial products to understand how risk is shared and allocated. The authors go on in explaining the extra risk analysis required for Islamic banks by focusing on a key contract in Islamic banking. The fund's mobilisation and utilisation in the *mudarabah* contract is based on profit sharing among the parties to this agreement. The authors use a descriptive approach of the risk assessment for Islamic banks. This account is informative in general but lacks flow and coherence and does not offer any new contribution.

Although Sundararajan (2007) agrees in general with Greening and Iqbal (2007) in their approach of analysing risks for Islamic banks, he disagrees with the method used. He suggests that a risk measurement framework tailored to Islamic banks should be created. He argues that empirical evidence shows that the sharing of risks model is very limited in practice. Even though, ideally, well-structured risk sharing contracts for the profit-sharing investment accounts would be a powerful tool for risk mitigation in Islamic banks. Some researchers, who are critical of Islamic banks such as El Gamal (2006), would disagree with Sundararajan’s (2007) statement as they would consider this to contravene with the nature of such contracts and may render them void from a Shariah perspective.

Al-Amine (2008: 1) outlines different risks that need to be managed by financial institutions whether Islamic or not. They include among others market risk, litigation risk, credit risk, operational risk, interest rate risk, liquidity risk and foreign exchange risk. The management of risk in Islamic banking is more challenging due to its peculiar nature and characteristics and the requirements to comply with Shariah.

Al-Amine (2008: 3) argues that the Basil II initiatives on the identification on market, credit and operational risks, can be assimilated into Islamic banking. However, the initiatives have to be complemented with the other dimensions of risks that are inherent in Islamic financial transactions. There is also the need for the Islamic banking industry to develop a derivative market as a risk management tool. Moreover, there is the risk of maturity mismatch between the assets and liabilities due to a lack of long term funding for Islamic banking. This will require a development of instruments that provide long term funding to match the long term asset, such as home finance, in order to mitigate this risk.

3.10.1 Credit and market risks

Haron and Hock (2007) further discuss the credit and market risks for Islamic banks. They are of the view that credit risks with the possibility of counterparties not meeting their pre-agreed financial obligations is something that both Islamic and conventional banks share. They nicely list the most common contracts of Islamic banks and the credit risks they are exposed to. However, they do not follow on by discussing or offering solutions for how Islamic banks would deal with and address these credit risks. The approach that would be taken by Islamic banks to deal with credit risks is, obviously, different from what would be the process in conventional banks. This is because of the special characteristics of the Islamic banking products. Although, this is an important issue that would benefit Islamic banks greatly, it was not addressed by the authors.

Haron and Hock (2007) also tackled the issue of market risk which is according to them, the risk of losses in on- and off-balance sheet positions caused by market pricing. They correctly assert that conventional financial institutions are, unlike Islamic financial institutions, exposed to market risks due to the various instruments they used for short term profit from price and interest rate variations. Islamic banks are less exposed to such risks due to Shariah restrictions on such financial instruments. The authors failed to show an understanding in distinguishing between what would be considered speculative instruments that are prohibited and what would be a legitimate profit generating instrument from Shariah perspective.

3.10.2 Operational risk exposure of Islamic banks

Archer and Haron (2007) have addressed the issue of operational risk for Islamic banks in light with the Basel II definition. Basel II defined operational risk as "the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events … [including] legal risk … but [excluding] strategic and reputational risk".

Archer and Haron (2007) divide the operational risks that Islamic banks would face into three categories:

(a) operational risks that would result from different sorts of banking activities, and which is shared among all financial intermediaries,

(b) Shariah compliance risk, this would be attributed to non-compliance with Shariah requirements and rules in the bank's operation; and the risk related to the bank's fiduciary responsibilities as fund manager (*mudarib*) towards funds providers in a *mudarabah* contract in the case of misconduct and negligence by the bank,

(c) legal risks, this would arise from the Islamic bank's operations or legal uncertainty related to the interpretation of Shariah related clauses and its enforceability.

The authors missed other contracts that have similar nature to the *mudarabah* contract referred to in the Shariah compliance risk above, such as *wakala* (agency agreement). Further, they also failed to mention some very common operational Shariah compliance risks related to the *murabaha* contract; in terms of, e.g., processing the transaction of buying and selling the commodities in the right sequence.

3.10.3 Impacts of Basel III on Islamic banks

3.10.3.1 Current scenario

Basel III concerns approaches to enhance the quality of capital. The enhancement changes the demographic of debt based capital to one of equity. Islamic banks already have a higher proportion of equity as capital. Basel III covers buffer capital ratios introduced via the Capital Conservation Buffer and Counter Cyclical Capital Buffer. The Islamic banks have introduced Investment Risk Reserve and Profit Equalisation Reserve.

3.10.3.2 Capital impact

Islamic banks are required to hold much more of the best form of capital while some of the existing capital will cease to count. Deductions from capital will increasingly be made from core tier 1. Dividends and bonuses will be constrained to boost core tier 1. Islamic banks will have to hold purer liquidity in larger amount and match closely between their financing and deposit base. A large part of the Islamic banks' profits over the next decade will go into the new standing funds according to these regulations.

3.10.3.3 Leverage ratio

PSIA (Profit Sharing Investment Accounts) cannot be included in additional Tier1 capital because they do not meet the criteria set out by the Basel III. Assets financed by the PSIAs are excluded from the exposure measure because the PSIAs are not included in the Tier 1 capital. Generally, Islamic banks are not highly leveraged due to the strict prohibition of 33% debt to equity ratio[2].

In summary, there is no noticeable impact on Islamic banks positions by adapting the requirements of Basel III.

3.10.4 Liquidity in Islamic banks

According to the Islamic Financial Services Board (IFSB, 2012) in Islamic banks (IBs), various types of risks interact with liquidity risk in a variety of ways, both in normal and stressed conditions. Credit risk in an IB can transform into liquidity risk if it faces major defaults in its financing and investment portfolio. Uncertainty about the creditworthiness and quality of an IB's financing portfolio can make it difficult to obtain funding from the market or to resell an eligible asset portfolio to other IB. In

[2] Taken from Abdulla Haron, (2010), *Basil III: Impacts on IIFS and the Role of IFSB*, working paper, presented in AAOIFI conference on 23-4 October 2010, Manama, Bahrain.

many IBs across different jurisdictions, a large part of their financing portfolio consists of *Murābahah* or other debt-based modes of financing.

Hence, this portfolio cannot be re-sold in the market due to Shariah restrictions on the selling of debt unlike conventional banking. The lack of depth in Shariah compliant instruments and Sukūk (Islamic certificates) in many jurisdictions increases the market risk of IBs. During the stressed conditions, the IB may find it difficult to sell or collateralise these assets to generate liquidity. Further, any reputational problem experienced by an IB due to perceived Shariah compliance or fiduciary risk may result in the withdrawal of funds by the fund providers, resulting in heightened liquidity risk for the IB. The liquidity risk management framework of the IB should factor in these and similar relationships and interactions between liquidity risk and other risks while setting limits, performing stress testing and executing its risk management strategy and policies in its operational environment[3].

3.11 Corporate Governance

Corporate governance is about how public companies are structured and directed (Monks and Minow 2011: 1). Greuning and Iqbal (2008: 31) argue that corporate governance provides a disciplined structure through which a bank sets its objectives, determines the means of attaining them, and monitors the performance of those objectives. There has been, in the last few years, a growing interest in the corporate governance of banks and more studies have emerged (see e.g. Macy and O'Hara, 2003; Caprio and Levine, 2002; Levine, 2003; Charkham, 2003).

However, Levine (2003) questions the need for a separate analysis for corporate governance of banks as this would require justification, as banks like any other organisations have the same corporate structure of shareholders, boards of directors, competitors etc. Caprio and Levine (2002) mention three characteristics of the governance of banks to support the claim that no separate analysis is required for banks. They argue that banks are, in general, more opaque than other financial

[3] IFSB (Islamic Financial Services Board -12 Guiding Principles on Liquidity Risk Management (Mar 2012), p.20.

institutions, which completely intensifies the agency problem. Second, banks are exposed to very robust regulations in the financially developed countries and, third, the widespread government ownership of banks raises some governance issues. Charkham (2003:15) argues this point as in his view, banks are different from other companies as their collapse would affect the society, furthermore, it may also impact the financial system with a domino effect to the economy as a whole.

The debate in the literature about corporate governance has mainly focused on whether corporate governance should concentrate on protecting the shareholders' interests or it should be broader in taking into account the interests of other stakeholders (Macy and O'Hara, 2003). Instead of interest-bearing deposits, Islamic banks invest deposits in profit and loss sharing investment accounts.

However, investment account holders lack rights of governance that shareholders enjoy, although they are (legally speaking) a type of equity holder with residual claims to their share of the bank's assets. The law provides a governance structure for debt holders in case of default. While in case of investment account holders in Islamic banks, neither the Shariah nor the secular law makes any such provision according to Archer and Abdel Karim (2007).

Archer and Abdel Karim (2007) further argue that this would raise a possible conflict of interests between the two groups of equity holders. This is because of the type of these investment accounts and the underlying Shariah principle. They also highlighted the risk of available adequate information to the investment account holders about the activities in which their deposits are invested in and the associated level of risk.

Blum (2002) and Cordella and Yeyati (1998) argue that a conventional bank's risk choice will be efficient if the bank deposits are uninsured, because they factor the impact of their risk choice on their depositors. This is because, normally, higher risk is associated with higher return, so, depositors will be demanding higher compensation. However, according to Baumann and Nier (2003) if the bank's risk choice is not observable by depositors or deposits are insured, the bank would choose higher risk at the expense of depositors.

3.12 Islamic Economics and Ethics

Ramadan (2009) discusses three fundamental propositions that the modalities of the reform process should be reconsidered by all Muslims based on the changing world as we know it today. He distinguishes between ‘adaptation reform’ and ‘transformation reform’. His third proposition is that it is not sufficient to rely only on scriptural sources when examining the relationship between human knowledge and applied ethics. He suggests that text and context scholars must work together to achieve the higher objective in combining human knowledge and applied ethics.

Ramadan (2009) argues that there is no ‘Islamic economy’ and if we look into it differently, we find a set of principles for an ethical framework. These ethics are a general philosophy of the economy’s aims, but there is nothing called an ‘Islamic economy’, it is just mere ethics that govern business transactions. However, the author completely dismisses a whole section in the Islamic classical books of jurisprudence (*fiqh*) called Islamic commercial law (*fiqh al-mu’amalaat*). This section outlines all Islamic contracts, agreements and principles that can be used in structuring financial and business activities. Ethics, as part of Shariah, articulate how business can be conducted in terms of manners when Muslims undertake different activities and interact with each other and with non-Muslims.

There is a clear difference between the principles and contracts such as *Ijara* (lease), *Musharakah* (partnership), which form part of the Islamic economics system and ethics, such as the seller is obliged to disclose all hidden defects in the commodity being sold, not to cheat and not to overstate the benefits of the product being sold. There are other elements, such as *Zakat* (the poor due), taxes, international business principles and the rules that govern the state financial system in deploying the state’s income and taxes. All the above and more form the Islamic economy, the Islamic finance and banking system is part of this economy. The author correctly asserts that Muslims should reform the instruments of deducting the legal rulings to address contemporary issues as required. However, it could be argued that his dismissal of the fact that an ‘Islamic economy’ exists and it is just a mere series of ethics is not supported by Islamic Scriptures.

Tripp quoted the argument by Abd al-Rahman Yusri (Director of the Higher Institute of Islamic Economics in Egypt) who argues that an Islamic economy can be established by inculcating Islamic values into a successful programme of economic development. He cites the fundamental respect within Shariah for capital and its productive use in a market designated as free and competitive, but nevertheless under the moral guidance and supervision of the institution of the *hisbah*: 'all wealth belongs to God and must be spent on whatever can bring a profit for Islamic society'.

3.13 Legal Stratagems (*Hiyal*) in Islamic Commercial Law

Ismail (2010) discusses the issue of legal stratagems (*hiyal*) in Islamic jurisprudence broadly, and then focuses on the *hiyal* used, in an attempt, to legitimise some controversial financial transactions by avoiding the prohibition of usury in Islam. He focuses in his study on the Islamic finance industry and the leading role played by these stratagems in introducing some financial products as Shariah compliant. He argues that the subject of *hiyal* should be examined within its historic context to clarify the role of those *hiyal* as portrayed in the discourse of the classical Islamic jurists. His argument is based on the fact that *hiyal* are envisaged to be established upon a teleology which describes *hiyal* as a way of avoiding controversial matters (*makharij)*.

As a follower of the Hanafi school of thought, Ismail (2010) uses this for his advantage in discussing the subject of *makharij* which are limited to the systematic reasoning of the Hanafi jurists, who set out the parameters of its use and its acceptance. He correctly, asserts that the use of *hiyal* has proven to have been mainly applied as an alternative to philanthropy. He draws a historical example from the Ottomans period where the extensive practice of usurious *hiyal* had negative socio-economic effects which are normally associated with interest-based economies.

Ismail (2010) dismisses the idea of an Islamic financial institution that operates with the objective of making profit and tries to compete in a conventional financial system. His work studies the theoretical account of the subject of *hiyal* from the classical point of view of the Islamic Commercial Law, without relating that to Islamic financial sector. It is clear that his religious background limits the scope of his study, he does not reflect on the other side of knowledge i.e. economics in terms of how we may relate this to address the current financial issues and practices.

Balala (2010) argues that as the interpretation of the Quran and *Sunnah* form a central role in Shariah. It is important to be undertaken in accordance with the spirit and principles of the primary sources of so as to uphold the requirements of contractual fairness and bring about social justice. The spirit of equity and justice, as a centrepiece of an Islamic society, necessitates that adherence to the substance of any undertaking to be in the forefront of any form it serves or mimics.

Ismail's (2010) inquiry argues to establish a framework for the *hiyal* as a jurisprudential instrument. It is a good attempt to explain the legitimate remit of using *hiyal,* in order to provide better understanding and prevent its misuse in the Islamic finance sector. The study aimed at answering the question of *hiyal* in the Hanafi school of thought from three perspectives the theory of usury, the concept of usury as a polemic and legal genre and lastly the *hiyal* as a historical practice. The study is rooted in the Islamic jurisprudence dealing with *al-Shaybani* contribution about *hiyal* who was one of the early Hanafi scholars.

The study does not examine the theology as a measure for the current practices of Islamic financial institutions in using *hiyal* to expand and offer more financial products that are compatible with its conventional counterpart. It is also important to highlight that the practical implication of the study would have been better if the study have provided a practical guide for the legitimate use of *hiyal* to address some pressing financial issues.

He concludes by stating that the usage of the *hiyal* was far more extensive during the era of Ottomans, and was even officially endorsed via a royal decree of the Sultan and the *fatawas* (Islamic legal opinions) of the leading Ottoman jurists at that time. This raises a question of 'what' and 'why' that happened, is it possible that the public interest from Islamic perspective at that time required these concessions, and under what circumstances and to what extent? The answer to these questions was clearly provided in the study.

3.14 The Role of Islamic Finance in Tackling Financial Exclusion

According to Sinclair (2001: 9) financial exclusion can be defined in either a narrow or a broad way. It has been defined, in a narrow sense, as exclusion from particular sources of credit and other financial services (including insurance, bill-payment services and appropriate deposit accounts). However, it relates, in broader sense, to elements that result in shutting out of the less well off from mainstream money services. Delving (2005: 30) asserts that financial exclusion is where a proportion of the population has a limited access to the mainstream financial services. It can be manifested in various shapes and forms by different groups.

Hersi (2009) discusses the subject of financial exclusion in the UK and the benefits have been introduced to the financially excluded Muslims by tackling this issue and paving the way for Islamic financial institutions to operate in the UK. According to him, the UK financial system does not cater to the financial needs of the British Muslims. This is because of the religious prohibition on dealing with any type of interest-based financial transactions and the restrictions on dealing with conventional banks.

Hersi (2009) examines the argument that the UK government has addressed the issue of financial exclusion in the UK by encouraging Islamic finance. Hence, this argument implies that the financially excluded Muslims in the UK will be encouraged and by large numbers to take up the Shariah compliant financial products offered by Islamic banks. However, his findings show that this has not been the case, as the actual demand for Shariah compliant financial products is currently not as expected.

Carbo *et al* (2007: 7) argues that there is almost an agreement among experts that financial exclusion is mainly associated with the issue of accessibility, which can be limited by affordability or self-exclusion due to negative perceptions about available services. There were hopes that the authorisation of Islamic banks will address this issue in relation to Muslims. However, it is argued that is not the case and Islamic banks are catering to professional segment of the British Muslims.

Hersi (2009) attributes this as revealed in his analysis to many reasons such as lack of awareness of the Shariah compliant financial products, poor demand for such products in the market, lack of trust and scepticism about its compliance with Shariah, financial illiteracy and the affordability and accessibility of such products by the less affluent Muslims in the UK.

The above reasons might be factors that impacted the growth and demand for Islamic financial products. However, Hersi ignored the UK Muslims' religious attitudes towards the Shariah compliant financial products and what would be their main driver in making financial decisions. The UK Muslims' religious attitudes can be divided into three categories: the first is fully practicing Muslims who would take up Shariah compliant financial products only regardless of pricing or other financial aspects. The second category is, practicing Muslims but a bit more lenient, for them the Shariah compliant financial products would be their first choice, then, the conventional financial products with religious commitment to supporting the former. The third category is Muslims who are less practicing and more rate/pricing driven as a determinant element for any financial decision (Dar, 2005).

A question can be raised here whether Islamic banks are looking to cater for a niche market in order to cater for the demand of Muslims in addressing their financial needs or aim to obtain a share of the market by competing with conventional banks?

3.15 Empirical Account on Islamic Banking in the West

Abdul-Rahman (2010) started a financial adventure with group of friends to provide interest-free financial products and services in the US. The project started with a modest beginning and kept growing to become the current American Finance House LARIBA.

It is interesting to find a book about Islamic finance written by a person from a chemical engineering background. However, the author also has a relative experience of 22 years in the field of Islamic financial services as one of LARIBA's founders. Contrary to what the book's title would imply, the book does not offer a contribution about the art of structuring and developing the tools and techniques of Islamic finance. Rather, the author utilises his book to offer us an insight of the Islamic banking and finance in the US through his own experience which is an interesting one.

The author argues that Islamic finance and banking is a 'community-based banking' model. This might be true in the context of the US, but that would not be the case with respect to the Gulf Region, Malaysia and other Islamic countries where the Islamic banking system is very dominant. This approach limits the Islamic finance and banking system to being viewed as a community-based banking rather a competitive financial approach. The author discusses in details the issue of interest (*riba*) and lending from cross-religious perspective based on the Judeo-Christian-Islamic values in light of the laws of America. Abdul-Rahman (2010) goes on explaining the steps to establish interest-free banking in the USA based on the LARIBA model highlighting different legal and financial challenges.

The author in his conclusion and vision for the future of interest-free banking suggests that, this model should only employ well trained bankers who believe sincerely in this model. He also recommends, based on his experience with Bank of Whittier as an extended branch of LARIBA, to avoid the branch model of banking because it is costly without real benefit. Instead he believes that using internet and modern communication channels is the solution for the fixed cost approach of branches.

3.16 Conclusion

This literature review attempted to cover all possible related subjects to this research. The review is divided into different themes to identify theoretical and empirical work on this subject to point out weaknesses and strengths and identify gaps in the existing literature. The review has covered research in both English and Arabic languages. In conclusion, this review shows that the area of financial product development and financial innovation and engineering in Islamic finance and banking is under-researched and under-represented.

Exploring financial innovation and engineering within a religious framework and the role of Shariah in-depth is very important to address this gap in the literature. This is because articulating these

Shariah fundamentals and principles in relation to what constitutes religious framework for financial innovation and product development in IFIs would provide a step forward for academic and practical research in that field. Furthermore, the conventional financial system would also benefit from the findings of this research in order to modify their financial innovation and engineering processes, in an ethical way for a more resilient and stable financial system.

The literature review identifies a gap in the literature that needs to be addressed adequately in order to close this gap, this study attempts to provide the first building block in addressing this gap. The gap in existing literature suggests that Islamic banking does not currently have a financial innovation and product development process that its theory is rooted in the literature (see Table 3.1 below), which also embeds the core Shariah principles, ethics and objectives. Moreover, there has not been anything in the literature that addresses the theory of financial innovation from Islamic finance and banking perspective. This is very important as this issue underpins Islamic finance and banking as a possible alternative financial theory that has the potential to address some of the current financial problems. The table below provides a summary of various gaps identified in the literature review and possible relevance to the research objective.

Table 3.1: Summary of the gaps identified in the literature review

Item No.	Identified Gap in the Literature	Relevance of the Literature Gap to the Research Questions
1	Are financial regulations driving Islamic financial innovation?	Partially relevant
2	Discussing the role and drivers of innovation in both the conventional and Islamic financial system, and whether product innovation in the Islamic financial system is created to circumvent financial regulations and Shariah requirements as the case may be with some innovations in the conventional financial system?	Relevant
3	Exploring whether the objective of Islamic banking is to address the financial exclusion of Muslims due to the lack of Shariah compliant financial products, or to compete with conventional banks to gain a share of the market?	Non-relevant
4	How can Islamic banking and finance preserve its identity and avoid drifting from its core principles by mimicking conventional banks in everything they do and every product they develop?	Relevant

5	Defining what constitutes religious orientation towards financial innovation and engineering	Very Relevant
6	Explaining the required framework for Islamic financial product development that achieves the objectives of Shariah in relation to IFIs?	Relevant
7	Discussing if an Islamic economics or financial system exist or are all Islamic financial principles and teachings merely a form of business ethics?	Relevant
8	Can Islamic banks adopt Basil III and what is its impact on capital adequacy and leverage ratio?	Non-relevant
9	How can Islamic banks achieve the regulatory requirements for stress testing?	Non-relevant
10	What is the relation between Islamic finance and politics in Islam and whether if the development of Islamic finance and banking been for political reasons with ulterior motives?	Non-relevant
11	Is an Islamic state a requirement or pre-requisite for the operation of IFIs?	Non-relevant
12	Identifying the steps and requirements for creating a risk measurement framework tailored to Islamic banks?	Non-relevant
13	Is Islamic economics and finance able to provide for a country that wishes to adopt it across the board; a full spectrum of financial and economic instruments without negatively affecting the growth rates of that country?	May be relevant
14	Exploring if the current spread and growth of Islamic finance and banking across the world an approach of adopting, or transforming the current conventional economic and finance systems?	May be relevant
15	Exploring the concept, philosophy and theory of financial innovation in Islam?	Relevant

Table 3.1 above summarises the gaps found in the literature review. Some of these gaps, as stated in the research objective and questions, would be addressed by this research study and other identified gaps would provide avenues for future research. The following chapter (Chapter 4) provides an analysis of the history of financial innovation in Islamic finance from its inception as a concept over 1400 years ago. It also studies the main influencing factors and elements that played a critical role in its development until the modern day.

Chapter 4: A Historical Analysis of Financial Innovation in Islamic Economics and Finance

4.1 Introduction

The previous chapter (Chapter 3) reviewed the relevant literature, provided an account of previous work and identified gaps in the literature. This research attempts to address such gaps as applicable and as set out in the research objective.

There has been a lack of research into the history and development of innovation in Islamic finance. This is due to the relative deficit of documents and sources that describe the financial activities and instruments used in the early stages and how they evolved during different periods of its history (see e.g. Al Omar, 2003; Lewis, 1970 and Hitti, 1963). Historical perspectives of Islamic finance are particularly important in comprehending the new development and concepts that have emerged in recent decades in order to establish the credibility and originality of Islamic finance.

This is carried out with a view to explore Islamic Finance as a potential ethical alternative to traditional financial methods. Most of the current studies, particularly, in the last two decades looked at the subject of Islamic finance from the point of view of the emergence of Islamic banking and the provision of Shariah compliant financial products, which goes back to the 1960's. Such academic research viewed the emergence of Islamic banking in isolation of its historical context which goes back to the birth of Islam as a religion.

This chapter provides an analysis of the history of Islamic finance from its inception as a concept over 1400 years ago. It then studies the main influencing factors and elements that played a critical role in its development until the modern day. Thus, it is very important, as this chapter concludes, to study Islamic finance in its historical context in order to have a correct understanding and appreciation of its history and the different development phases that it has gone through. Islamic finance as a concept and practice has existed for over 1400 years, however, it has only begun to offer financial products via a banking system, such as savings and investment accounts, home and commercial finance products, in the last half of the Twentieth century.

The importance of studying the history and development of Islamic economics and finance is due to the significant role played by the economic system in building and developing society. It is also vital to explore the main elements that have contributed to the development of Islamic economics and the different phases it has gone through. Therefore, the study of Islamic economics and finance would provide an economic framework from which ethical principles and foundations for establishing a comprehensive Islamic economic and financial system flow.

Thus, one of the most important concepts that this chapter endeavours to demonstrate is that, the principles and foundations of Islamic economics and finance, which were practised through its various historical phases, could provide the basis for a comprehensive economic and financial system which is compatible with modern life.

4.2 Phases of the History of Islamic Finance and its Innovation

The history of innovation in Islamic finance is discussed in the sections below and is divided into 7 phases. Each phase covers a critical period of the history of Islamic finance and its financial innovation in the context of economic, social, political, regional and global influencing factors.

4.2.1 Phase One: Formation (622 – 661)

Some of the Islamic finance principles, as known today, existed in the pre-Islamic era in the Arabian Peninsula and practiced by the Arabs. Prophet Muhammad himself traded according to these principles before Islam. Ibn al Atheer and Ibn Hishaam narrated that Khadija, the first wife of prophet Muhammad, used to hire men to travel with her goods and merchandise to Syria to trade there. The contract between them used to be a profit sharing agreement. When she heard about the good characteristics and honesty of Muhammad Ibn Abdullah, she hired him to trade with her goods for a share of the profit (the agreement was based on the Islamic finance principle of *Mudaraba*). His honesty and honourable dealings when trading with her goods, was the reason for her to ask him for marriage (al Bouti, 1991: 80).

Fifteen years later, Muhammad (pbuh) received his first revelation to call people to Islam and worship the One and only God. After 13 years of struggle in Makkah, Muhammad (pbuh) received another revelation instruction to migrate to Madinah where the dawn of the Islamic state started (Al Omar, 2003: 100). During that time, usury (interest), which was widely spread in Arabia, was addressed in the Qur'an as an unethical financial practice and as a result was forbidden with very strong wording. The Qur'an says "Those who swallow usury cannot arise except as one whom Satan has prostrated by (his) touch does arise. That is because they say trading is only like usury; and God has allowed trading and forbidden usury", (Qur'an, 2: 275).

Also, "O you who believe! Be careful of (your duty to) God and relinquish what remains (due) from usury, if you are believers. But if you do (it) not, then be apprised of war from God and His Apostle; and if you repent, then you shall have your capital; neither shall you make (the debtor) suffer loss, nor shall you be made to suffer loss" (Qura'an, 2: 278-279). Therefore, the price of capital, in Islam, is not the rate of interest; it is the rate of return generated from the capital as mainly a profit.

The question of interest on theoretical grounds is not a recent concern. Plato considered it as a means whereby the rich could exploit the poor, and Aristotle believed that money was to be 'used in exchange and not to increase at interest'. Prohibitions on usury is manifested clearly in both the *Old Testament* (including Exodus 22:25, Deuteronomy 23:19 and Nehemiah 5:7) and the *New Testament* (Matthew 25:26-27 and Luke 19:23). Many Jews, however, have interpreted the prohibitions as applying only to loans made between Jew and Jew, not between Jew and Gentile (El Diwany, 2010: 25).

The Church's representatives stood firm on the issue of usury. For many centuries a consensus ruled against the practice of usury. Nonetheless, some time before 1220, the canonist Hispanus identified a charge that would be paid by a borrower who did not repay his usury-free loan on time (Noonan, 1957: 14-56). This charge was to compensate the lender for the loss of use of his money in between the initial repayment time and the time the loan is actually repaid. It would be called "interesse", derived from the Latin for “in between”, and was to give rise of the modern term “interest” as we know it today (Noonan, 1957: 14-56).

The main focus of Muhammad (pbuh), and the first caliph his companion Abu Bakr al Siddiq after him, was to establish the social justice and growth of the public resources of the emerging Islamic state on interest-free foundations (Al Omar, 2003: 100). The social justice in the Islamic society is backed by religious obligations and Islamic teachings rather than a legal system. Muslims at that time were busy waging wars and fighting battles for the survival of their young state. Therefore, the focus was on the importance of public money, rather than the management of the financial system which started to take its shape during that period (Al Omar, 2003: 100). The modern concept of social justice emerged in the West out of the early industrialisation movement in France and Britain in the 1840s. Then, social justice became the rallying cry of social democratic parties everywhere in Europe and backed by the legal system as it has developed (Barry, 2005: 5).

During his life, Muhammad (pbuh) was the point of reference to his followers in any financial matters or activities that they faced at that time. He established the foundations for an Islamic economic and financial system and its instruments to address any finance related matters, or otherwise, after his life.

One of the main landmarks established by Muhammad in the new Islamic state is when he planted the seeds of social solidarity in society by establishing the brotherhood concept between the people of Madinah (the original inhabitants of Madinah) and the people of Makkah (the emigrant Muslims, *Muhajireen*) who migrated and left everything behind escaping with their belief from torture (al Bouti, 1991: 150-180). The people of Makkah easily assimilated into the new society that became one society working towards one goal. The concept of social solidarity then developed to include even non-Muslims who lived under the umbrella of the Islamic state.

As a result, new financial relationships were created between the people of Makkah and the people of Madinah. Partnerships in businesses, profit sharing agreements and farming contracts. This brotherhood initiative was with the aim to help the people of Makkah settle down in the new society and start their new life. Muhammad did not rely on the social solidarity as the only source of economic and financial stability to meet their financial needs; he also focused on other factors such as labour and production.

The first caliph Abu Bakr al Siddiq focused on preserving and growing the state funding by collecting *zakat* (obligatory alums giving). He also fought the war of *riddah* (apostasy) against tribes who refused to pay *zakat* to the state. He ruled for two and a half years, he then appointed Umar Ibn al Khattab as the second caliph before he died. During his rule, Abu Bakr signed many strategic treaties with tribes in northern Arabia, and hence maintained unity, peace and order in the Islamic state (El Diwany, 2010: 4).

During the time of Umar Ibn Al Khattab, the second caliph, the Islamic state expanded as Muslims conquered Iraq, Syria and Egypt and applied fare taxes, which was less than what they used to pay their rulers before the conquest of Muslims, on lands and its resources as a state's revenue (Al Doori, 1982: 18). Although, those lands were owned by the state, its return was distributed to the people and from that dual ownership (public and private ownership of resources) concept was established. Trade also flourished with non-Muslim states on the basis of Islamic finance principles (Katibi, 1994: 110). This required the development of a comprehensive tax system due to the new finance and trade structures, where a financial management of the generated wealth from trades to the state was required. Therefore, a state treasury (called *bait al maal*) for the management of public money was established, and a record keeping of all financial affairs in relation to its utilisation and distribution was maintained (Katibi, 1994: 110).

During the time of the third and fourth caliphs Uthman Ibn 'Affan and Ali Ibn Abi Talib, they maintained and built on the economic and financial system they inherited. They favoured the public financial interests over private interests; they also developed the financial system with future generations in mind and society as a whole (Al Sawwaf, 1989: 249-290). More attention was given to poor people and their financial needs. These caliphs also paved the way for open commercial trade with other nations and developed financial methods and instruments that other nations were more familiar with. They also established the public finances department in the Islamic state's treasury to manage the state's financial matters (Al Sawwaf, 1989: 249-290).

The Islamic economy, in this phase, moved from an economic system that relied on livestock to an agricultural system after gaining many lands as a result of conquest of new regions. The income of the Islamic state also shifted from relying on charity collections and spoils of wars, to generating this income from collecting different types of tax and trade (Al Omar, 2003: 98). The growth of the economy of the conquered countries in North Africa and Spain (*Andalus*) also contributed to the development of the overall economy of the Islamic state. During this period, laws and rules governing the tax system and the treasury (*bait al maal*) and record keeping of all financial affairs of the state and public ownership were established (Al Doori, 1982: 28).

During this phase most of the Islamic financial principles were established, those principles were mainly captured in the Prophetic Sayings, some of which are summarised below.

a. Currency Exchange

Abu Al-Minhal narrated, I used to practice money exchange, and I asked Zaid bin 'Arqam about it, and he narrated what the Prophet said in the following: Abu Al-Minhal said, "I asked Al-Bara' bin 'Azib and Zaid bin Arqam about practicing money exchange. They replied, 'We were traders in the time of Allah's Apostle and I asked Allah's Apostle about money exchange. He replied, 'If it is from hand to hand, there is no harm in it; otherwise it is not permissible", (Al Bukhari, Volume 3, Book 34, Number 276). Abu Al-Minhal narrated that: I asked Al-Bara' bin 'Azib and Zaid bin Arqam about money exchanges. Each of them said, "This is better than I," and both of them said, "Allah's Apostle forbade the selling of silver for gold on credit", (Al Bukhari, Volume 3, Book 34, Number 387).

b. **Credit Sale and Mortgage**

'Aisha narrated that: The Prophet purchased food grains from a Jew on credit and mortgaged his iron armour to him, Al Bukhari, Volume 3, Book 34, Number 282). Hakim bin Hizam narrated that: Allah's Apostle said, "The seller and the buyer have the right to keep or return goods as long as they have not parted or till they part; and if both the parties spoke the truth and described the defects and qualities (of the goods), then they would be blessed in their transaction, and if they told lies or hid something, then the blessings of their transaction would be lost", (Al Bukhari, Volume 3, Book 34, Number 293).

c. ***Murabaha* Sale**

Tawus narrated that: Ibn 'Abbas said, "Allah's Apostle forbade the selling of foodstuff before its measuring and transferring into one's possession." I asked Ibn 'Abbas, "How is that?" Ibn 'Abbas replied, "It will be just like selling money for money, as the foodstuff has not been handed over to the first purchaser who is the present seller", (Al Bukhari, Volume 3, Book 34, Number 342).

d. **Forward Sale (*as-salam* contract, sales in which a price is paid for goods to be delivered later)**

Ibn 'Abbas narrated that: The Prophet came to Medina and the people used to pay in advance the price of dates to be delivered within two or three years. He said (to them), "Whoever pays in advance the price of a thing to be delivered later should pay it for a specified measure at specified weight for a specified period", (Al Bukhari, Volume 3, Book 35, Number 443).

e. **Transference of a debt from one person to another (*Al-Hawaala*)**

Abu Huraira narrated that: The Prophet said, "Procrastination (delay) in paying debts by a wealthy man is injustice. So, if your debt is transferred from your debtor to a rich debtor, you should agree", (Al Bukhari, Volume 3, Book 37, Number 486).

f. **Representation, authorisation and business by a proxy via agency (*Wakala*)**

Ali narrated that: Allah's Apostle ordered me to distribute the saddles and skins of the *budn* (camels) which had been slaughtered, Al Bukhari, Volume 3, Book 38, Number 496). Abu Musa narrated that: The Prophet said, "An honest treasurer who gives what he is ordered to give fully, perfectly and willingly to the person to whom he is ordered to give, is regarded as one of the two charitable persons", (Al Bukhari, Volume 3, Book 38, Number 512).

g. Partnership

Jabir bin 'Abdullah narrated that: The Prophet established the right of *Shu'fa* (i.e. Pre-emption) in joint properties; but when the land is divided and the ways are demarcated, then there is no pre-emption, (Al Bukhari, Volume 3, Book 44, Number 675). Anas narrated that Abu Bakr As-Siddiq wrote to him the law of Zakat which was made obligatory by Allah's Apostle. He wrote: 'Partners possessing joint property (sheep) have to pay its Zakat equally, (Al Bukhari, Volume 3, Book 44, Number 667).

Those financial principles were practiced in their simple forms as we would expect in that era and its lifestyle regarding financial transactions. Other contracts that we discussed during this period were also established such as profit sharing and lease of services. The use of the above financial principles and contracts has evolved and expanded in the phases that followed.

4.2.2 Phase Two: Growth and Stability (7^{th} – 10^{th} century)

This period was a time of political stability (the Islamic state had established itself as a very powerful state among other nations at that time and the ruling system was very stable) and economic growth. It covers the Omayyad era and the first Abbasid era and the beginning of the second Abbasid era until the rule of the Abbasid caliph Almuttaqi Billah.

The Islamic economic and finance system was largely dependent on agriculture and its produce during this phase. The private ownership of the conquered farming lands was a clear landmark during the Omayyad era. Muslims kept people of the lands and gave them the same status they held before the conquest in order to maintain and grow the lands for an agreed share of the production (Al Omar, 2003: 104). The methodology followed by the Islamic state, at that time, was to make political treaties with other nations when possible to avoid a war if a nation showed hostility towards the Islamic state.

This approach enhanced the continued economic growth. The Omayyads also maintained the *al kharaj*[4] (land tax) system that was established by Umar Ibn Al Khattab with some amendments that

[4] ***Kharàj*:** land tax. *Kharàj* tax was introduced by Caliph Umar to replace the system of distributing conquered land among Muslim warriors, and became the first tax to be introduced to the Islamic tax system outside those

were required due to changes in the circumstances and time, such as allowing the collection of *al kharaj* in the form of money rather than a proportion of the same production of the lands. They also standardised the system of *al kharaj* in all cities of the Islamic state (Al Omar, 2003: 104).

The Abbasids however, realised the necessity to review the system of calculating *al kharaj* to be based on the amount of production instead of the size of land. This is due to the important role of *al kharaj* as an income to the state and *bait al maal* (Katibi, 1994: 197). The Abbasid caliph Haroon al Rasheed (170-193H, 786-808 CE) asked the judge Abu Yousuf (a *Hanafi* jurist and judge) to write a book to address the issues of the state finances and the issue of *al kharaj*. Abu Yousuf in his book supported the approach of taking a share of the production of the land in either form money or crops, as he deemed this better for the volatility in the market prices (Abu Yousuf, 1985: 49-50).

A big role was played, in this phase, by natural disasters, such as the Plague of Basra in 684 CE which killed a large number of people and farmers. Such disasters affected economic growth and political instability on labour which became a dear need. The need to ensure security and safety in the state required the establishment of a police force that was formed from non-local foreign people who were brought from other states (Shalaq, 1997: 270). A big number of those foreigners were Turkish slaves who assumed security jobs during the 8th to the 10th centuries. Growth in agriculture pushed the rulers to import labour force from Africa. Nevertheless, there was not a huge dependence on slaves in the agricultural sector as it was still managed by local farmers (Shalaq, 1997: 270).

One of the main features in this phase is growth in the export of local goods and the wide expansion of commercial dealings and trades with other nations that was based on different Islamic finance principles. This generated a huge wealth and prosperity to the Islamic state with the exception of very short periods of political instability (Al Omar, 2003: 105).

---

stipulated in the Qur'an and the Sunnah. The tax was imposed on land, not individuals, with the tax base being the cultivable land and a proportional tax rate.

In Central Asia, the expansion of Islam from the 7th century onward brought a stop to Chinese expansion towards the West following the Battle of Talas in 751. Further expansion of the Muslim Turks in Central Asia from the 10th century brought an end to disrupting trade in that part of the world. For much of the Middle Ages, Islamic Caliphate (in the Near East) often had a monopoly over much of the trade conducted across the Old World including the Silk Road routes as shown in Figure 4.1 below (Bentley, 1993: 32).

Aston University

Illustration removed for copyright restrictions

During this phase Muslims were able to conquer and take control of many strategically important trade routes as shown in Figure 4.1 above. They fully conquered North Africa after they built a huge fleet of ships that successfully pushed the Byzantines out of the Mediterranean Sea (Katibi, 1994: 192). They kept control of the Mediterranean Sea for many centuries and their ships dominated the sea trade routes and transport until the 12th century. They also started to expand their trade with China since the middle of the 9th century (Shalaq, 1997: 270).

This expansion in trade and the use of different financial transactions played a big role in the development of Islamic finance and its instruments such as *Istisna'*[5] and *Suftajah*[6] instead of *Sukuk*[7]

[5] ***Istisna'*: an order to manufacture.** A purchase order contract of assets whereby a buyer places an order to purchase an asset that will be manufactured and delivered in the future. In other words a buyer will require a seller or a contractor to deliver or construct the asset that will be completed in the future according to the

and money transfer (Al Doori, 1995: 70). '*Istisna, as an Islamic finance principle, was innovated by the Hanafi School of jurisprudence*' (this quote is from an interview with a prominent Shariah scholar). However, the other three schools of jurisprudence, Shaf'i, Maliki and Hanbali and Imam Zufar from the Hanafi school, did not share the same view regarding the *Istisna'* contract. They see *Istisna'* as a debt for debt contract and a sale of the non-existent, which is not acceptable in Shariah, unless the *Istisna'* price is paid in advance.

4.2.3 Phase Three: Decline (10^{th} – 13^{th} century)

This phase started when the Abbasid Al Muttaqi Billah became caliph during which the *khilafa* weakened and lost control over many of its territories and regions. This is because, he was perceived as a weak ruler, in addition to on-going external and internal conflicts. Rulers of the Islamic state also moved away from their main role of protecting the interests of their people and the state into focusing on their private interests and how they can utilise their position to serve themselves (Al Qalqashandi, 1963: 3/268). This decline was manifested in the division of the Islamic Empire into three states, the Abbasid *khilafa* in Baghdad, the state of Bani Omayyah (the Omayyad) in the West in Andalus (Spain) and the state of Al 'Abediyyen and the Fatimite in Africa in the 10^{th} century (Ibn Khaldoun, nd: 2/752).

During this period the Islamic state was torn into small independent states, involved in many battles and the state's expenses increased substantially while the income decreased due to the political instability (Al Dhabi: 1996: 1/425).

---

specifications given in the sale and purchase contract. Both parties to the contract will decide on the sale and purchase prices as they wish and the settlement can be delayed or arranged based on the schedule of the work completed.

[6] ***Suftajah*:** money order. A credit instrument issued to a creditor to enable him to use it or cash it at another predetermined venue and at the future date. Also, *suftaja* were issued "payable to bearer".

[7] **Sukùk: (**singular **sakk):** deposit certificate. A document or certificate, which evidences the undivided pro-rata ownership of underlying assets—the Sakk (singular of Sukuk) is freely tradable at par, premium or discount.

This instability in the fractioned Islamic state resulted in a decline in the economy and financial activities and trade in the Islamic state. Public money and the state revenue were mixed with the private money of the rulers who were corrupt. This is because; they were appointed only because they were related to the caliph rather than being qualified, strong, religious and honest rulers (Shalaq, 1997: 277). Hence, the financial system and financial accounting of the Islamic state did not develop during this phase in comparison with phase two.

4.2.4 Phase Four: Partial Growth (13th – 16th century)

The Islamic state, in this phase, started to revive in some aspects and decline in others. This revival began in Greater Syria (*Bilad al Shaam*) from 1168 when Salaah El-Deen Al Ayyoubi conquered Egypt. This lasted until the fall of the Ayyoubian state after the death of Salaah El-Deen in the 13th century due to the conflict with the Seljuq Turks[8]. This was the beginning of the Seljuq Turk's state in Syria and Egypt in 1250. During this phase, the Crusaders fleet of ships dominated the sea and all its trade and transport. The Tatar invasion also made the situation worse for the growth of the Islamic state and affected economic and financial development (Al Omar, 2003: 110). This was concluded by the fall of Baghdad, the capital of the caliphate, which was destroyed by the Mongols (1220–1500), and the Euphrates, as historians tell us, were swamped with corpses. Even the lives of the Abbasid

[8] The Seljuqs originated from the *Qynyk* branch of Oghuz Turks who in the 9th century lived on the periphery of the Muslim world, north of the Caspian and Aral seas in their Yabghu Khaganate of the Oghuz confederacy, in the Kazakh Steppe of Turkestan. In 985, the Seljuq clan split off from the bulk of the Tokuz-Oghuz. They set up camp on the west bank of the lower Syr Darya (Jaxartes), where they converted to Islam.

Later, in the 10th century the Seljuqs migrated from their ancestral homelands into mainland Persia, in the province of Khurasan, where they encountered the Ghaznavid Empire. Following the defeat of the Ghazavids to the Seljuq Turks at the battle of Nasa plains in 1035; Toghril, Chaghri and Yabghu received the insignias of governor, grants of land and were given the title of dehgan. At the battle of Dandanaqan they defeated a Ghaznavid army and following Tughrul's successful siege of Isfahan in 1050-1051, led to the establishment of an empire which would later be called the Great Seljuk Empire.

The Seljuqs mixed with the local population and adopted the Persian culture and language in the following decades. See: M. Ravandi, (2005), *"The Seljuq court at Konya and the Persianisation of Anatolian Cities"*, in Mesogeios (Mediterranean Studies), vol. 25–6 (2005), pp. 157–69.

caliph and his delegates who hurried to receive the Mongol Chieftain Hulagu to surrender were not spared (Al Doori, 1981: 103).

Trade and finance, on the other hand, flourished in Syria and Egypt during this time under the Mamlouk rule. This was due to the relative political and economic stability during which trade increased with the Italian cities, this period of economic growth lasted until 1382 (Al Doori, 1981: 103). Trade finance practised at that time was somehow similar in concept to what Islamic banking does currently except, it was more aligned with Shariah because it was practised as a joint venture between skilled merchants, suppliers and investors rather than being based on debt (*Murabaha* (credit sale), an Islamic finance principle) as is widely practised currently by Islamic banks.

By the end of the thirteenth and the beginning of the fourteenth Centuries, those who fought the Islamic world now assimilated into it. The four Mongol empires had converted to Islam and had become staunch Muslim supporters in the central Islamic land. These were the Il-Khans in the Tigris-Euphrates valley and the mountainous regions of Iran, the Chaghaytay in Syr-Oxus basin, the White Horde in the Irtysh region, and the Golden Horde around the river Volga (El-Ashker and Wilson, 2006: 285). From these four, two powerful Islamic empires emerged: the Shi'ah Safawid[9] Empire, which became the foundation of what Iran is today, and the Sunni Moghul, or Mongol Empire in the Indian subcontinent which constitutes the present Pakistan and some parts of India. Moreover, to the

[9] The Safawid dynasty was one of the most significant ruling dynasties of Iran, and is often considered the beginning of modern Persian history. They ruled one of the greatest Persian empires after the Muslim conquest of Persia and established the Twelve Schools of Shi'ah Islam as the official religion of their empire, marking one of the most important turning points in Muslim history. The Safawid ruled from 1501 to 1722 (experiencing a brief restoration from 1729 to 1736) and at their height, they controlled all of modern Iran, Azerbaijan and Armenia, most of Iraq, Georgia, Afghanistan, and the Caucasus, as well as parts of Pakistan, Tajikistan, Turkmenistan and Turkey. Safawid Iran was one of the Islamic "gunpowder empires", along with its neighbours, the Ottoman and Mughal empires. See: Helen Chapin Metz, (1989), *Iran, a Country study*, University of Michigan, p. 313; Emory C. Bogle, (1989), *Islam: Origin and Belief*. University of Texas Press. 1989, p. 145; and, Stanford Jay Shaw. History of the Ottoman Empire. Cambridge University Press. 1977, p. 77.

west of the Mongols, came another, and long lasting, source of support to Islam, the Ottoman Turks[10] (El-Ashker and Wilson, 2006: 285).

These three empires dominated the political scene in the Islamic world as depicted in Figure 4.2 below: the Ottoman, the Safawid and the Mongol. Each had different socio-economic conditions, features of intellectual development and influence over the development of Islamic economics and finance (El-Ashker and Wilson, 2006: 285).

Figure 4.2: Political aspects that influenced the development of Islamic finance (Katibi, 1994)

Aston University

Illustration removed for copyright restrictions

Many political and economic aspects shaped this phase, such as wars (that exhausted the treasury of the Islamic state and imposed more taxes on people to finance those wars) among the Islamic states

[10] The Ottoman Turks (or Osmani Turks) were the Turkish-speaking population of the Ottoman Empire who formed the base of the state's military and ruling classes. Reliable information about the early history of Ottoman Turks is scarce, but they take their Turkish name, *Osman* (corrupted in some European languages as "Ottoman"), from the house of Osman I (reigned ca. 1299-1326), the founder of the dynasty that ruled the Ottoman Empire for 620 years. After the expansion from its home in Bithynia, the Ottoman principality began incorporating other Turkish-speaking Muslims and non-Turkish Christians, becoming the Ottoman Turks and ultimately the Turks of the present. The Ottoman Turks blocked all land routes to Europe by conquering the city of Constantinople, the capital city of the Byzantine Empire, and Europeans had to find other ways to trade with Eastern countries.

themselves. This was in order to acquire a bigger piece of the Islamic state territories for themselves and be more powerful, the Tatar and Mogul invasion, the Crusade wars and natural disasters that affected mainly Western Europe and the trade with the East (Issawi, 1991: 45). Also influential was the discovery of new sea trade routes that changed trade and shifted the balance of power and the revenue generated from the use of the old routes controlled by the Islamic state. From the start of the 11th century, the European ships dominated the Mediterranean Sea and its trade until the 18th century (Issawi, 1991: 45).

The underdevelopment of the concept of institutions, which means here a system of socially produced regularities, impacted negatively on the financial development and innovation during this period as it limited the mobilisation and deployment of capital (Kuran, 2011: 14). During these same centuries, however, there were significant changes in the West regarding the concept of institutions, corporate structures, society and governing laws that fostered innovation in finance.

In 1602, the invention of multinational corporation emerged with the Dutch East India Company, which was created in Holland (Shiller, 2012: 7). It allowed the creation and development of long-term capital in the form of trading posts around the world, including mobilisation of this capital, distribution channels and long-term contracts. The large size of the company helped investors to minimise the huge risks via the pursuit of economies of scale (Shiller, 2012: 7).

The evidence we have regarding economic institutions in their early forms in Islamic finance goes back to the eighth and ninth centuries which marked the emergence of an Islamic law to govern the trusts or endowment (known as waqfs). At that time the refinement of the Islamic law of partnerships also came about, while the development of some areas such as tax collection, innovations and cross-cultural borrowings never ceased (Kuran, 2011: 10).

4.2.5 Phase Five: Youthfulness (16th – 19th century)

This phase marks the beginning of the Ottoman Empire until the rule of Muhammad Al Qanouni The First (926-974 H, 1519-1566 C.E). The Ottoman state faced various political and economic changes that needed to be dealt with during the last quarter of the 16th century, such as the war with Safawid in Iran (1578-1639), the Jilali Revolution (1603-1610) in Anatolia and the revolution of Balkan states against the Ottomans (Haleem, 1988: 141). This is in addition to, the need to strengthen their fleet of ships and cover the expenses of wars. The biggest economic challenge they faced was a weak financial system that was neglected and underdeveloped during that period and almost in deficit, because of the misuse of public funds and various wars. Furthermore, the low value of their undervalued currency which was made from silver made things worse (Haleem, 1988: 141).

The Ottoman Turks grew in power in Anatolia and developed into a force that shaped the Islamic world for centuries to come. Established in 1299 by its founder Uthman, who reigned from 1299 to 1326, the Ottoman Turkish state, which began as a principality of march-warriors, was one of several states that appeared in Anatolia after the break-up of the Seljuq Sultanate. It lasted until 1922. Their predecessors the Seljuq Turks, are said to be devoted Muslims who had never been conquered by Muslims but by Islam itself (Lewis, 1979). With regards to the Ottoman's financial policies, there was a noticeable increase in the national debt of the state from the 19th century onwards due to costs of wars and internal conflicts. This led to the Western intervention, which led eventually to colonisation, in order to protect the interest of the creditors, as happened in Egypt, Tunisia and Morocco (Issawi, 1982: 62).

The Silk Road ceased serving as a shipping route for silk around 1453 with the Ottoman supremacy at Constantinople. Ottoman rulers at that time did not have good relations with Western countries because of the crusades, and were unhappy about the loss of Andalusia in the West. Thus, they expressed their displeasure by embargoing trade with the West. Things had eased a little around a century later, and Venice was able to cut an uneasy deal with the Ottomans, regaining for a time some of their economic clout as middlemen (Arbrey *et al*, 2008: 257).

The Ottoman state took a loan for the first time in 1894 from some European countries, mainly Britain, to fund the war of Al Qiram against the Armenian revolt backed by Russia, a financial necessity due to the weak financial policy of the state during the previous two centuries. Prior to this, the Ottoman state used to borrow from local banks or raising money by issuing financial papers or sukuk (Haleem, 1988: 218-219). During the beginning of the 19th century, the state started a privatisation of land owned by the state; this enhanced the production of cotton, textile manufacturing and its export. Trade also increased with other nations, in particular during the time of Ayyoubi state in Syria and Egypt, moreover, trade with Europe also increased substantially during this period via Egyptian seaports ('Ashour, nd: 141-143).

We could hardly witness any particular socio-economic work or cultural activity comparable to that of Muslim thinkers in the few preceding centuries. The work of Ibn Khaldun, (1332–1404) and to a far lesser degree that of al Maqrizi after him (1364–1441), seemed to have stamped a seal on the last of the great socio-economic works of Muslim thinkers (Hitti,1963). The Ottoman Empire, it seems, had left very little legacy of a specifically socio-economic nature. This is not to say that there were not notable achievements by the writers of the period, but these mainly involved bibliographical works, biographies, compilation and commentary works (Hitti, 1963).

The Ottoman Islamic state focused during this phase on the development of the finance and manufacturing industries such as textiles, cotton and some equipment in some countries in particular, Turkey, Syria and Egypt. As a result of this policy, Bank of Egypt was established in 1920 by Tala'at Pasha Harb, the National Bank of Egypt, at that time, was British-owned, and all the other banks in Egypt were owned fully by foreigners (Issawi, 1982: 20). Harb established Bank of Egypt and its companies on the basis that all its dealings were in Arabic, only Egyptians operated the bank, and the bank restricted share ownership to Egyptian citizens. Bank Iesh[11] in Turkey was established in 1924

[11] The study did not find any information about Bank Iesh, which implies that the bank did not survive. In the Ottoman Empire, economic activities such as Treasury operations, money and credit transactions and trade in gold and foreign currencies were executed by various establishments such as the Treasury, the Mint, jewellers, moneylenders, foundations and guilds. In this organizational structure that prevailed until the second half of 19th century, the Ottoman Empire minted gold coins on behalf of the Sultan. The Ottoman Empire put cash banknotes (*Kaime-i nakdiye-i mutebere*) into circulation in 1840. During the Crimean War, in 1854, the Ottoman Empire, which borrowed from other nations for the first time in history, needed a state bank to assume an intermediary function in the repayment of external debts. As a result, the "Ottoman Bank (Bank-ı Osmanî)", headquartered in London, was established with English capital in 1856. The fundamental powers of the Bank were limited to lending in small amounts, making advance payments to the Government and discounting some

as well. The objective of establishing both banks was to manage economic activities such as Treasury operations, money and credit transactions and trade in gold and foreign currencies (Issawi, 1982: 20).

The first central bank to be established in the West was the Bank of England, founded by William Paterson in 1694. The idea of becoming a systemic regulator, that would keep financial crises under control, was not considered when the bank was founded (Shiller, 2012: 7). Its role as the lender of last resort was invented and developed over the following centuries as it encountered repeated crises.

The concept of the large national corporation was enhanced by the invention of the New York State corporate law of 1811 which set the right of anyone to set up a company and the limited liability structure (Shiller, 2012: 8). Therefore, it is argued that the lack of private organisational structure in the Islamic economic system alongside its dependency on the state as the main economic institution during Ottoman rule hindered its financial development (Kuran, 2011: 18).

The limited liability structure in the Islamic Law was addressed in phase one and two i.e. prior to the 10th century in the partnership (*musharaka*) contract and its governing rules long time before the New York State corporate law. Each partner in the business venture is considered to be a trustee in managing other partner(s) share, and will not be liable in the normal course of managing the business unless proven to breach the terms of this trust. The organisational structure in that sense was based, in terms of business activities undertaken, on a profit sharing or sale and trading contracts with other

---

Treasury bills. In 1863, the Ottoman Bank was dissolved and restructured as an English-French partnership under the name "Bank-Osmani Şahane (Imperial Ottoman Bank)" and became a state bank. The Imperial Ottoman Bank was granted the sole privilege of issuing banknotes for a period of thirty years. The Bank, acting as Treasurer of the State, was assigned to collect State revenues, make payments on behalf of the Treasury and discount Treasury bills, as well as making interest and principal payments pertaining to domestic and foreign debts. The capital of the Imperial Ottoman Bank retained by other nations triggered reactions in time and these reactions laid the foundation for establishing a national central bank. Efforts towards establishing a central bank with domestic capital culminated in the establishment of the "Ottoman National Credit Bank (Osmanlı İtibar-ı Millî Bankası)" on 11 March 1917. However, the defeat of the Ottoman Empire in the First World War prevented the bank from becoming a national bank, which would have assumed central bank functions. A law was enacted by the Grand National Assembly of Turkey on 11 June 1930, and published in the Official Gazette of 30 June 1930 under the name "The Law on the Central Bank of the Republic of Turkey No. 1715". Following the centralization of duties carried out by various institutions and organizations, the Central Bank started to function on 3 October 1931. Source: Central Bank of Turkey, Website, http://www.tcmb.gov.tr/yeni/eng/, Accessed on 16th June 2013.

parties that comply with Shariah. This is what makes it different from the Western limited liability in 1811 that mainly revolves around interest-based lending/borrowing dealings which was a relief as a company structure to limit the liability of any obligations payable to third parties and suppliers.

Commercial contracts registered in the Ottoman courts in the seventeenth century were in form identical to those used in the region around the year 1000. The other reason for less advanced financial capabilities during the nineteenth century is underdevelopment of the credit markets in contrast to those of Western Europe. The incompatible organisational structure, including the absence of banks and stock markets, limited the supply and flow of domestic capital to Middle Eastern states (Kuran, 2011: 18).

4.2.6 Phase Six: The Decline of the Ottoman State and Subservience to the West (from the beginning of the 19th century to 1970)

This phase started towards the end of the 19th century when the Ottoman state began to decline and became divided into smaller states. This period was marked as the phase of economic decline and political instability, there was not any development in the economic and financial structure of the Islamic state during this phase (Al Omar, 2003: 99).

After a few centuries of military success, the Ottoman Empire began to undergo some decay. This could be related to several factors: economic decline resulting from the decentralization of government to province rulers who later exploited the weakening of the government, the discovery of the Cape of Good Hope its impact upon the Western commercial and political penetration (El-Ashker and Wilson, 2006: 297).

The Islamic state was in a complete mess and corruption was widely spread, trade with different regions of the Islamic state decreased hugely, and financial debt of the state substantially increased, particularly, in Egypt and Turkey (Al Omar, 2003: 99). This was the back door for the intervention of different Western countries trying to have a slice of the dying Islamic state. The Islamic state, then, gradually became weaker and weaker and was divided into small colonies ruled by the British, French, Italian and other Western countries ('Ashour, nd: 141-143). During this colonial period, the conventional interest-based financial and banking system became dominant in the colonised Islamic states and that was the beginning of the shift towards the use of the conventional financial system in the declining Islamic state (Al Omar, 2003: 99).

The economic decay in the Ottoman Empire may be related to two main influencing factors: the first is the maladministration of the Turkish provinces which was evidenced mainly in Syria and Egypt with an average term of the Turkish viceroys in office of two years or less (Hitti, 1963). The reason for that was to ensure that viceroys do not stay too long in office to gain power and then break away from the central government in Istanbul. The second factor is the shift of trade route from land to sea after the discovery of the Cape of Good Hope. This diverted part of the European trades that passed through land routes in the north and Red Sea in the south for centuries to other routes outside the Islamic world (El-Ashker and Wilson, 2006: 297).

The disappearance of the Silk Road following the end of the Mongols' reign was one of the main factors that stimulated the Europeans to reach the prosperous Chinese empire through another route, mainly by sea. Huge profits were to be obtained by anyone who is able to achieve a direct trade route with Asia. This was the main driving motive for the Portuguese exploration voyages of the Indian Ocean, including the sea of China. This resulted in the arrival in 1513 of the first European trading ship to the coasts of China (Arbrey *et al*, 2008: 257).

This reduced the impact of the Islamic lands as a commercial centre and as main routes for world trade, which used to generate income and commercial interaction. The new trade routes were less costly for European traders as they were shorter and gave them an advantage in the hostilities with the Islamic state, as their goods will not have to pass through Islamic territory, reducing the need for diplomacy from the west.

The Muslims' spice trade, for example, was severely damaged by European competition, which had the opportunity to channel these valuable products from the very source of production without having to pass through the Islamic world (Raymond, 1981). This had led to undesirable economic effect on the Islamic world. It was three and half centuries later that the route of the Cape of Good Hope was to face severe competition when the Suez Canal was opened in 1869 as shown in figures 4.3 and 4.4 below. Only then, did the Red Sea, which was once the centre of trade, come back to life (Raymond, 1981).

Figure 4.3: Planning the Suez Canal sea routes (Katibi, 1994)

Aston University

Illustration removed for copyright restrictions

Figure 4.4: The Suez Canal sea routes and shift it made in the trading routs (Katibi, 1994)

Aston University

Illustration removed for copyright restrictions

Increasing financial transactions with foreigners, in the mid-nineteenth century, was one the main reasons for attitudinal transformation as shown above in Figures 4.3 and 4.4. This pushed the adoption of new business practices for better productivity and profitability, such as stock markets, municipalities and laws supportive of large companies capable of outliving their founders (Kuran, 2011: 11).

The urge for financial development in order to foster economic dealings with foreigners and Western Europe facilitated the establishment of the commercial courts in the mid-nineteenth century. These courts adjudicated legal cases according to the French commercial code in Egypt, Syria, Turkey and elsewhere in the region. Nevertheless, Islamic courts continued to handle commercial cases and disputes, but its share was declining gradually (Kuran, 2011: 12).

This adaptation of Western financial laws escalated in the following years in an attempt to catch up with the Western economic system. However, this uncalculated approach, created challenges later on for the compatibility between a new innovation known as Islamic banking with applicable financial laws and regulations that had become dominant.

4.2.7 Phase Seven: Islamic Finance Revivalism (1970s Onwards)

Having discussed the different phases of Islamic economics and finance development, its growth and decline and factors that influenced its development, it is now the time to analyse its modern revival and the emergence of its great innovation of Islamic banking in modern history.

Following the economic development and the political changes that we analysed in the previous six phases of the history of Islamic finance, most Gulf countries, in this phase, in the 1950s and 1960s had their first introduction to the modern banking system. The focus on the Gulf countries is because Islamic banking emerged successfully there for the first time.

This introduction according to Smith proved to be problematic. Throughout the Gulf countries, mainly in Saudi Arabia, religiously observant individuals chose to leave their money in non-interest bearing accounts or they avoided the formal banking system altogether. The challenge increased to reconcile the Gulf financial system sectors and norms of Western finance with the prevailing belief amongst Gulf people that dealing in any form of interest is forbidden in Islam (2006: 1).

'These religious constraints imposed economic costs, as the gap between local norms and global financial practices impeded free capital flows by preventing global financial markets from accessing a segment of Gulf capital and Gulf citizens'. A solution to this problem was introduced in 1970s[12] in the form of a new type of financial intermediation. This was created through the efforts of observant Muslim activists, Islamic legal scholars, economists and businessmen to apply Islamic law to the economic realm (Smith, 2006: 2).

Throughout the history of Islam, religious leaders have emerged, invariably identifying the problems of Muslims as being the result of their desertion of the correct path of their religion (El-Ashker and Wilson, 2006: 315). This has always been the case throughout history from the time of the first schism in Islam over the caliphate, *Fitnah*, to the time of the crushing defeat of the Egyptian, Syrian and Jordanian armies by the Israelis in the 1967 six-day war. Calls for religious reform did not go unopposed. The call for secularization was equally strong, from some modern movements that were influenced somehow by liberal ideologies, though it was a call for a move in the opposite direction in order to move away from religious constraints (El-Ashker and Wilson, 2006: 315).

If this was the full story, as we believe it to be, of Islamic finance it would definitely prove challenging enough for current economic theories. Smith (2006: 5) argues that Islamic finance cannot be fully captured by economic or cultural studies. It should be also perceived as a political institution that seeks power and presence in the political sphere through finance. She further argues that Islamic finance represents one of the more prominent achievements of broad intellectual and political programme known as Islamisation according to Stenberg (1996) and Euben (2002).

Smith's (2006) argument ignores the different phases of Islamic finance that we discussed earlier in this chapter, and focuses only on the founding of Islamic banks in the 1970s from a political perspective. She argues that the Islamisation movement gained political power by adopting Islamic

[12] We should note that there had been attempts in establishing Islamic banking in the 1960s in Pakistan and the well-known experiment in the founding of a rural development bank in Mit Ghamr Savings Bank in Upper Egypt in 1963, however, the first commercial Islamic banks appeared in the 1970s in the Gulf.

finance, this then influenced decision makers in the Gulf States to ride this wave and keep it under their control. It is not fair and accurate for Islamic finance to be studied and explained out of context and in isolation of its history and development.

Some writers (see Kerr, 1971 and Smith 2006) attribute the founding of Islamic banks to a political agenda pursued by the Muslim Brotherhood which was founded in Egypt in the 1920s as an anti-colonial, pan-Islamic political movement.

Kerr argues that during the Arab Cold War of the 1950's and 1960's which pitted Arab nationalists against conservative monarchies, many Islamic activists from the Muslim Brotherhood found refuge in the Arab Gulf. Members of the Muslims Brotherhood from Egypt and other countries assumed professional positions in the public sector and were mainly prevalent in the rapidly expanding educational system (1971: 25-45). From that position, they were able to share their views on Islam and public life to persuade many Gulf people of their way of thinking. Overtime, the Gulf witnessed the formation of Islamic social reform that was affiliated to varying degrees with the Muslim Brotherhood. These groups and affiliations were later instrumental in bringing Islamic banking to the Gulf region (Kerr, 1971: 25-45).

The direct role of Islamic political movements in Islamic finance is a subject of debate. This central and formal role of the political movements and the attribution of it to the Muslim Brotherhood is argued largely and disputed by some writes like Kahf (2004).

This is because, Islam is the guide and Islamic law is the framework that governs all aspects of life for Muslims including economics and finance. This has been the case during the history of Islamic finance which we discussed in its different phases. Therefore, Islamic finance cannot be viewed in isolation of the society and its history, or be interpreted as being a political motive; it should be studied in its, first and foremost, religious context, then social, historical and cultural contexts. This is in order to understand its aspirations and the recent innovation of the phenomenon of Islamic banking. It is hard to believe that members of the Muslim Brotherhood had that large an impact in changing the course of the whole of the Gulf region, as if people of the Gulf were completely ignorant about their religion and the prohibition of interest. This argument does not, however, dismiss completely the role of the specific Islamic movements, such as the partial role played by the Muslim Brotherhood in that regard.

4.3 Interest-Free Banking

Muslims became more convinced than ever that their religion could still provide practical solutions to their problems: spiritually, politically and economically. In the wave of Islamic revivalism that characterized the mid to the late twentieth century, two main developments occurred as far as economics was concerned: the emergence of an extensive body of literature on Islamic economics and the establishment of Islamic banks (El-Ashker and Wilson, 2006: 327).

Despite the abundant theoretical work on Islamic banking up to the end of the twentieth century, empirical work on the operation of Islamic banks seemed to be very limited. Some case studies have been conducted in Bangladesh, Egypt, Malaysia, Pakistan and Sudan, but the number of studies is still small (Ariff, 1988).

What is new about the writing on interest-free Islamic economics in the twentieth century, particularly in the second half of the century, is that Islamic economists treated the subject in relation to major contemporary financial issues: (a) the operation of banks and financial institutions, and (b) monetary and fiscal policy. The objective was very clear: on the one hand it was to address the question of modernity once more with a view to proving that Islam is still relevant to contemporary life, but indeed it required innovation in financial instruments and banking systems in order to ensure that banks can be successfully run on an interest-free Islamic basis (El-Ashker and Wilson, 2006: 367).

Despite the valuable work on Islamic banking up to the last quarter of the twentieth century, the literature had two particular limitations: first, writers based their analysis on the premise that *riba* (interest) would be absent from the economy, and second, they did not discuss, or at least not thoroughly, issues concerning monetary and fiscal policy. This was to come a decade or so later within the writing on an interest-free economy and the Islamic banking system, that continued to the end of the century (El-Ashker and Wilson, 2006: 368). Following the development we discussed in phase seven regarding the emergence of Islamic banking, further Islamic banks and corporations were established in the Islamic world in the 1970's and 1980's onwards.

In chronological order these were the Dubai Islamic Bank in 1975, Kuwait Finance House in 1977, al-Rajhi Co. for Currency Exchange and Commerce in Saudi Arabia in 1978, Jordan Islamic Bank for Finance and Investment in 1978, Bahrain Islamic Bank in 1979, the Iran Islamic Bank in 1979, the Islamic Exchange and Investment Corporation in Qatar in 1979, the International Bank for Investment and Development in Egypt in 1980, International Islamic Bank in Bangladesh in 1983, Tadamon Islamic Bank in the Sudan in 1983, Bank Islam Malaysia in 1983, Beit Ettamouil Saudi Tounsi in 1984, and West Sudan Islamic Bank in the Sudan in 1984. A group of Faisal Islamic Banks, named after the late King Faisal of Saudi Arabia, emerged in 1970's and 1980's: in Egypt in 1977, in the Sudan in 1977, and in Turkey in 1985. The al-Barakah group emerged in the early 1980's: al-Barakah Bank in Sudan in 1982, al-Barakah Investment and Development Co., in Saudi Arabia in 1982, al-Barakah Islamic Investment Bank in Bahrain in 1984, and al-Barakah Turkish Finance House in 1984 (El-Ashker, 1987).

4.4 Conclusion

This chapter analytically discussed the history and development of financial innovation in Islamic finance. It divides the history of Islamic finance into seven important phases based on influencing factors and important events in the history of Islamic finance. It also discussed the importance of analysing the history of Islamic finance in its context and an examination of its history in order to gain a full understanding of the development of innovation within Islamic Finance.

Islamic financial principles and ethics were practiced over 1400 years ago at the time of Prophet Muhammad (pbuh). Some of those principles even existed and were practiced by the Arabs before Islam came into existence; they were then incorporated into an Islamic framework. Those Islamic finance principles were introduced as a new innovation in its modern form of financial products offered by financial institutions and banks. Muslims believe that Islam provides a comprehensive framework for all aspects of their life including economics and finance. They also believe that this framework is also compatible with modern life and its requirements.

This historical analysis shows that the more powerful economy usually prevails over others and dictates the rules of economic and financial structure and practices. This was obvious during certain phases of the Islamic finance history, when the state was politically and economically stable and strong.

However, this factor changed later in recent history, with the domination of interest-based capitalism on the financial system worldwide enforcing its rules on the financial sphere. Hence, Islamic finance has had to make some concessions and compromises in its modern history to create its own space in the new global economic order.

The discussion concludes that Islamic banking as a new phenomenon and innovation is here to stay and it is not a temporary phase. Yet, it needs to grow and develop more to be considered a truly viable alternative to interest-based banking system. This will require designing more beneficial financial innovations that are based on solid Islamic rules and rooted in its core Islamic principles. What will also be required is the building and developing of a clear theoretical framework of financial innovation from an Islamic perspective, which will be dealt with in the following chapters.

The main reasons for the decline in the Islamic economic and financial structure during the different phases of the history of the Islamic state, which were discussed above, are summarised below:

1. Natural disasters.
2. Poor governance of the public finances due to mismanagement, corruption and internal conflicts.
3. Lack of development in the financial system and the formation of a new, competing modern economic and financial system. This was a significant factor in the decline of the Ottoman Empire.

4. Focusing on the collection of taxes and ignoring economic development, this was particularly the case when the Islamic state was involved in various wars and trying to fund them via different means including taxes.
5. Irresponsible financial management and unfair taxes. This occurred mainly during the fragmentation of the Islamic state, when rulers of different regions started to break away from the empire. Rulers were focused on their own personal interests and the rapid acquisition of personal wealth due to their short appointment in office.
6. Increased military control and expenses.
7. External threats and foreign intervention.
8. Political instability and divisions in the Islamic state and the society.
9. Decline in the standard of living that provoked public unrest and revolutions.

In addition to the above factors, the absence of an advanced private organisational commercial system has negatively impacted the Islamic financial system and its scope of innovation. The centralisation of the financial system in the institutions of the state which were less flexible and responsive to economic and social changes did not improve matters. The most influential negative factors to the underdevelopment of Islamic finance are summarised in Table 4.1below.

Table 4.1: Main negative influencing factors for Islamic financial innovation

Negative Factors	Root Cause
State structure with a low capability for innovation and experimentation	The lack of focus and attention given to the private sector and institutional structure.
Political policies and planning	Authoritarian ruling, high corruption and lack of trust in organizations.
Reaction to economic failure	Social problems and political insecurities, also a loss of economic standing created fertile soil for the spread of economically protectionist ideologies, such as Turkish statism and Arab socialism (Kuran, 2011: 294).

The main financial innovations that were discussed in this chapter throughout the seven phases of the history of Islamic finance are summarised in the Table 4.2 below.

Table 4.2: Summary of the seven phases and development of financial innovations

Historical Phase	Financial Innovation	Historical Factors
Phase one: 622 - 661 **Region:** **The Arabian Peninsula and Iraq.**	• The concept of social and economic justice in the Islamic society is backed by religious obligations rather than a legal system, this was established by the bond of brotherhood between the people of Makkah and Madina. • The development of the profit sharing contract within the Islamic context. • Currency Exchange. • Credit Sale and Mortgage. • Murabaha Sale. • Forward Sale. • Transference of a debt from one person to another (Al-Hawaala). • Business by proxy (Wakala). • Partnership.	• The modern concept of social justice, in contrast, emerged in the West out of the early industrialisation movement in France and Britain in the 1840s, which is believed to be in phase five of the phases of Islamic finance history. However, it is mentioned here for comparison purposes only.
Phase two: 7th – 10th century **Region:** **The Arabian Peninsula, Iraq, Syria, Egypt, North Africa, Spain (Andalus) and Persia.**	• Establishment of the state treasury. • The foundation of the land tax system. • The invention of economic institutions in its early form in Islamic finance was founded in the eighth and ninth with the emergence of an Islamic law to govern the trusts or endowment (known as *waqfs*). • The principle of *Istisna'* was founded. • The contract of *Suftajah* was developed.	• As the Islamic state grew and expanded, a treasury system was needed to be developed to organize the state finances. This system was influenced by the already established treasury system in more mature nations such as the Roman and Persian empires.
Phase three: 10th – 13th century **Region:** **The Arabian Peninsula, Iraq, Syria, Egypt, North Africa, Spain (Andalus) and Persia.**	• Reform of the tax system. • The refinement of the Islamic law of partnerships. • The development of some areas such as tax collection, innovations and cross-cultural	• In 1602, the invention of multinational corporation emerged in the West with the Dutch East India Company.

	borrowings never ceased	
Phase four: 13th – 16th century **Region:** **The Arabian Peninsula, Iraq, Syria, Egypt, North Africa, Spain (Andalus) and Persia.**	• Trade finance was emerged as a joint venture between traders, suppliers and investors in unstructured way.	• The first central bank to be established in the West was the Bank of England, founded by William Paterson in 1694.
Phase five: 16th – 19th century **Region:** **The Arabian Peninsula, Iraq, Syria, Egypt, North Africa, Spain (Andalus), Persia Mongolia and Turkey.**	• The reform of the export sector and financial tools such as credit sale and credit finance. • The establishment of first national banks in Egypt and Turkey.	• The large national corporation was enhanced by the invention of the New York State corporate law of 1811 which set the right of anyone to set up a company. • The limited liability structure was developed.
Phase six: 19th century to 1970 **Region:** **The Arabian Peninsula, Iraq, Syria, Egypt, North Africa, Spain (Andalus), Persia Mongolia, Turkey and Balkans.**	• New business practices such as stock markets, municipalities and laws supportive of large companies capable of outliving their founders were established. • Financial development in order to foster economic dealings with foreigners and Western Europe facilitated the establishment of the commercial courts	• Increased trades and business with foreigners stimulated this development in the financial system.
Phase seven: 1970s to present **Region:** **The Arabian Peninsula, Iraq, Syria, Egypt, North Africa, Spain (Andalus), Persia Mongolia, Turkey, South East Asia, Pakistan and Iran.**	• The emergence of Islamic banking. • The amendments of laws and regulations to accommodate the requirements of Islamic banking. • The diminishing *musharakah* financial instrument as a type of the partnership contract was engineered.	• The role of the Bank of England as the lender of last resort was invented and developed as it encountered repeated financial crises.

Hence, there are many lessons to be learned from the history of Islamic finance, as shown in Table 4.2 above that should be considered today. It is vital that Islamic banks do not divert from the path of offering a new financial model that is fair, transparent, based on profit and risk sharing, a system that promotes social justice and welfare. This was the main objective that marked Phase Seven: Islamic finance revivalism in the modern history of Islamic finance. Any deviation from this path could lead Islamic finance and banking to lose its main features as a moral and ethical financial model. The next chapter (Chapter 5) focuses on the traditional innovation theory and discusses its approach and schools, highlighting innovation bias and the role of financial innovation in triggering financial crises.

Chapter 5: Traditional Theory of Financial Innovation

5.1 Introduction

The previous chapter (Chapter 4) provided an analysis of the history of financial innovation in Islamic finance from its inception as a concept over 1400 years ago. It also discussed the main influencing factors and elements that played a critical role in its development until the modern day.

Innovation today is the most important item of the strategic agenda of firms and financial institutions. It is not only seen as the key driver of the corporate success, but as a critical requirement for organisational survivor (Sveiby *et al*, 2012: 3). Innovation is believed to be one of the key ingredients for economic growth in a society; this growth leads to generating national wealth and prosperity. Therefore, innovation is often perceived as the ultimate solution to existing economic problems in society. This belief does not necessitate, by default, the desired outcome for growth, as described by Adam Smith (1976), if it does not meet and undertake the required steps and economic factors to achieve national wealth.

Hence, there are constant tireless efforts to innovate, particularly in the West. This is usually driven, by the incentive of competition in the market, profit making, hedging risks, achieving personal satisfaction and finding ways around applicable regulations and taxation. It is worth noting that innovation is one of the most widely mentioned concepts in social sciences however, unintended and uncalculated risks and consequences are rarely studied (Sveiby *et al*, 2012: 1). In fact, according to Tzeng (2009) the current catch phrases such as 'creative response' and 'creative destruction' can be traced back to Schumpeter's Theory of Economic Development (1934) and Capitalism, Socialism and Democracy (1942). Drucker[13] (1986: 104) stated that both Schumpeter and Keynes are the 'two

---

[13] **Peter Ferdinand Drucker** (November 19, 1909 – November 11, 2005) was an Austrian-born American management consultant, educator, and author, whose writings contributed to the philosophical and practical foundations of the modern business corporation. He was also a leader in the development of management education, and he invented the concept known as management by objectives (see: Drucker, Peter F. "Reflections of a Social Ecologist," *Society*, May/June 1992). Among Peter Drucker's early influences was the Austrian economist Joseph Schumpeter, a friend of his father's, who impressed upon Drucker the importance of

greatest economists of the last century'. However, Drucker feels that it is Schumpeter who would shape the thinking on economic theory and economic policy for the coming fifty years. This is because of his view of the role of innovation as the key generator of economic growth.

This chapter aims to analyse financial product innovation and its consequences that are often ignored by highlighting three Schumpeterian schools of innovation. In order to do so, we will approach this goal by focusing first on the role played by financial innovation in creating financial crises. This will provide a theoretical understanding of what would have caused the current (i.e. 2008) and previous financial crises and their effects. Most of the analyses conducted have focused on the nature of financial innovations with exploring and contrasting the current financial system with the Islamic financial system, and extracting some lessons to be learned.

This chapter further explains what would happen following a financial crisis, and brings to light that the resilience of the banking system is a crucial element for a strong financial system. It also argues that there is an innovation bias across academic research and that financial market is under regulated, and that more robust regulations are required. It also aims to critically discuss financial innovation, its theory, schools, and impact on society through uncalculated risks.

5.2 Analysis of the Role Played by Financial Innovation in Creating Financial Crises

Academic research has explored the main causes of financial crises in recent decades, see e.g. Persons and Warther, (1997); Bahattacharyya and Nada, (2000); and Finnerty, (1992). However, this research tackled the issue of financial crises from different perspectives, some of these are: separating banking functionality, i.e. investment and retail. Others looked into it from a financial innovation perspective, for example, competition in the financial market and complexity of this innovation.

---

innovation and entrepreneurship. Drucker was also influenced, in a much different way, by John Maynard Keynes, whom he heard lecture in 1934 in Cambridge. “I suddenly realized that Keynes and all the brilliant economic students in the room were interested in the behaviour of commodities,” Drucker wrote, “while I was interested in the behaviour of people. See, Beatty, Jack. *The World According to Peter Drucker*, 1998, p. 163; Drucker, Peter F. *The Ecological Vision: Reflections on the Human Condition*, 1993, p. 75; and Drucker, Peter F., *The Ecological Vision*, 1993, pp. 75-76.

Some academic research argues that there is a major flaw with the current financial system in the new capitalist era. This financial system is under regulated and requires a fundamental reform (see Kaminsky and Reinhart, 1999, 2000). In contrast, there are some emerging financial systems such as the Islamic finance and banking system which has survived the recent financial crisis with minimum effects due to its inbuilt characteristics.

Plosser (2009), neatly states that financial innovations such as subprime mortgages and the sophisticated financial securities triggered the 2008 financial crisis, the negative impact of which, is still being felt. This chapter relies on this theory in proving that some financial innovations are believed to be harmful to the economy and society, unjust and that there are some lessons to be learned by studying the theory of innovation in the Islamic financial system as a potential ethical alternative to existing practices in the current financial system.

5.3 Fundamental Elements Influencing the Financial Market

Financial markets are normally afflicted with either a boom or bust syndrome, which often results as a manifestation of irrational excess (Persons and Warther, 1997). According to Boyer (2007), a discrepancy in the financial system is not derived from typical information asymmetry or minor imperfections in the financial market, but rather it is believed to be the direct result of the fact that financial markets are much different from other markets. They are driven by future predictions and sophisticated financial innovation, which make financial markets inherently volatile.

A great deal of new and sophisticated financial innovations has been developed in recent years. It is argued that this profusion of new financial engineering has been attributed to different causes, such as volatile interest rates, floating exchange rates, regulatory policy and taxes (that flourished off-shore financial structures) (Finnerty, 1992). Bahattacharyya and Nada (2000) added that investment banks have played a vital role in the development and presentation of these innovative products.

5.4 The Resilience of the Banking System: a Key Factor in the On-going Financial Crises

Boyer (2007) argues that the banking system could be both a cause of financial crises and a solution to cases when the reversal of a speculative boom causes a run towards liquidity by financial firms and institutions. It is known that the degree of fragility or resilience of the financial and banking systems is a crucial element in the unfolding financial crises.

Boyer (2007) further explains that a cumulative depression can be triggered by a persisting and strong liquidity constraint (e.g. the Great Depression of 1929-1932). On the other hand, an economic rebound could be organised through an adequate supply of liquidity (e.g. the 1987 stock market crash in the US). The run towards liquidity, when financial crises break out, would put banks once again at a process that might lead to a recession and then a recovery or to a depression.

The era of financial liberalisation dictates that the centrality of the banking system is a pivotal element to the economy. A change in the strategy of banks towards various and generally more risky creditors has been induced since the shift from banking intermediation to direct finance. Following the shift of many large firms towards the stock market, banks moved into new opportunities represented by sophisticated financial innovations oriented towards small and medium size businesses, households and foreign firms in order to compensate for this shift (Kaminsky and Reinhart, 1999, 2000).

As a result of rather low real short-term interest rates, the emergence of bubbles has been favoured by the high liquidity. Hence, it was no surprise, since then, that the number of financial crises caused by banks has gone up since the early 1980s, which also implies that there is clearly a major flaw in the way banking operates and a link between banking crises and a deregulated financial system (Kaminsky and Reinhart, 1999, 2000).

5.5 The Race by Financial Institutions to Develop Sophisticated Financial Products

Bhattacharyya and Nada (2000) clearly recognise that the motive to develop financial innovation is diluted unless competitors can be prevented from mimicking this innovation. Such problems may be very particular to financial innovation. There would be a substantial cost involved in innovating and developing financial products, legal expenses and marketing. Tufano (1989) further added that financial products cannot be hidden and all details of a newly developed product or security become public knowledge once it is launched on the market. Hence, the ‘first mover’ advantage in the market would be limited before rival banks copy the product and take away any monopoly profits.

Miera and Repullo (2010) have concluded that increased competition affects the risk of bank failure in which 1) banks invest in business loans; 2) the default of these loans is endogenously chosen by the entrepreneur; and 3) loan defaults are imperfectly correlated. The risk-shifting effect as identified by Boyed and De Nicolo (2005) emerges from number (1) and (2) above which works as follows: more competition leads to lower loan rates, which results in lower probabilities of default, and hence safer banks. The margin effect resulted from number (3) above reveals that more competition leads to lower loan rates, and as a consequence less revenue from performing loans, which provide a buffer against loan default, and hence, this results in riskier banks.

This means as banks take on more risk for sake of maximising profit, they will need to shift this risk in various ways, most notably financial innovation. Those innovation act as a shield for irresponsible banking practices for shifting, legal, market, rate of return, tax, credit and regulatory risks. This raises the question of who the actual beneficiaries of financial innovation are! Definitely, not me or you as consumers and clients of banks, and most certainly not the society. This was evident by the financial crisis of 2008 and it was clear who suffered most from its consequences, the average people in society. Does that mean financial innovation is bad as a fact? We are not suggesting that at all, the aim of this chapter is to critically analyse the process of innovation, its unintended consequences and innovation bias as we will see in the following sections.

The structure of the banking industry impacts the interbank competition as well as the price offered by commercial bank credit. This shows a link between banking sector structure and the quality cut-off that delineates bank borrowers from capital market borrowers. Furthermore, the complexity of the financial market is a pivotal determinant of the effect of a financial innovation (Boot and Thakor, 1997).

5.6 The Root Cause of Financial Crises

Plosser (2009) argues that a critical role in promoting economic growth has been played by financial innovation. This innovation has been sparked, to a major extent, by developments in finance theory and financial econometrics. It is worth contemplating some critical questions raised about the nature and structure of financial innovation in maintaining financial stability in the current turmoil.

Massa (2002) explains that following a financial analysis of the effects of financial crises, it was observed that the impact on innovation differs according to the underlying informational structure of the financial market, which the new asset is introduced into. This could be addressed by reallocating the portfolio of the risky asset. Boyd and Smith (1996) describe financial innovation as a cyclical process, which is influenced by the development of real sector, and also, influences the development of that sector.

As a solution to this problem, Wilson (2010) argues that the principles of good practice, fairness and justice in Islamic financial transactions can put Islamic finance on the path towards greater penetration in the global financial market, particularly if an emphasis is placed on these values.

If these values of Islamic finance were taken into consideration as general guidelines, subprime mortgages and the securitisation of these mortgages, would not, possibly, have been able to cause such severe damage to the financial system. This is because as Plosser (2009) puts it, such financial innovation and products were presented in a very complex product structure.

It is worth noting that the financial crisis of 2008 has not resulted in a real structural reform or changes in the design of the global financial system. Policy-makers and regulators are more focused on conducting a quick and short term repair of the current system rather than fundamentally changing it (Baccaro 2010, and Traxler 2008). Table 5.1 below provides a summary of the main root causes of financial crises in the literature.

Table 5.1: A summary of the main root causes of financial crises in the literature

	Contributing Factors to Financial Innovation in the Literature	Academic Literature
1	Combining banking functionalities, investment and retail	Persons and Warther (1997)
2	Competition in the financial market and complexity and miss-pricing of financial innovation products, CDOs	Bahattacharyya and Nada (2000) and Finnerty (1992)
3	Under-regulated financial system	Kaminsky and Reinhart, (1999, 2000)
4	Subprime mortgages, miss-pricing of risk and the sophisticated financial securities, risk-inducing remuneration packages,	Plosser (2009) and Foster (2010)
5	Future predictions and speculations in the financial market which make it volatile and risky	Boyer (2007)
6	Profusion of new financial engineering lead to volatile interest rates, floating exchange rates, regulatory policy and taxes	Finnerty (1992)
7	Persisting and strong liquidity constraint (e.g. the Great Depression of 1929-1932) can trigger a cumulative depression in the financial market	Boyer (2007)
8	Greed and increased competition which affect failure of the banking system and poor risk control by banks	Miera and Repullo (2010)
9	We would add to the above as a conclusion, the strong link between the banking system and inter-banking dealings on one hand and the financial market on the other. These strong linkages, in particular, among market-maker banks, play a domino effect in the financial market if one or two of those banks fail.	The researcher's view

Table 5.1 above provides a summary of various factors in the literature that were identified as a possible trigger of financial crises. These factors acted as a driver for developing and launching various financial innovations to satisfy such factors.

5.7 What is Financial Innovation?

Having discussed different aspects of financial innovation and its consequences, let us have a closer look on it. Financial innovation is the creation of new financial instruments, technologies, institutions and markets. As in other technologies, innovation in finance includes research and development functions as well as the demonstration, diffusion and adoption of these new products or services (Merton, 1992).

In finance, particularly, innovation involves adapting and improvising on existing products and concepts. Advances emerge initially as either products, such as derivatives, high-yield corporate bonds and mortgage-backed securities or processes such as, prices mechanism, trading platforms and means and methods for distributing securities (Allen *et al*, 2012: 10).

5.7.1 Financial Innovation in History

An analytical review of the recent history of financial innovation and its phases shows us that, the invention of financial theory has taken place over centuries and in parallel with many inventions in mathematics and economic theory. The first beginnings of the mathematical theory of probability in the seventeenth century led to the first insurance companies in that same century, which based their operations on sound statistical risk analysis (Shiller, 2012: 7). The mathematical thinking that led to the Laplace[14] transform in the mathematics of the eighteenth century also led to the concept of present value of a flow of income, and as a consequence to modern investment theory. Also, advances in the theory of stochastic processes in the nineteenth century led to the concepts of statistical innovations and of the random walk, and thus, to the twentieth-century concept of efficient markets. Furthermore, advances in theoretical physics in the twentieth century led to the mathematics of the Black-Scholes[15] option pricing theory (Shiller, 2012: 7).

---

[14] The Laplace transform is a widely used integral transform with many applications in physics and engineering. Denoted $\mathcal{L}\{f\}$ (or alternatively $\mathcal{L}_t\{f(t)\}$), it is a linear operator of a function $f(t)$ with a real argument t ($t \geq 0$) that transforms $f(t)$ to a function $F(s)$ with complex argument s. This transformation is objective for the majority of practical uses; the most-common pairs of $f(t)$ and $F(s)$ are often given in tables for easy reference. The Laplace transform has the useful property that many relationships and operations over the original $f(t)$ correspond to simpler relationships and operations over its image $F(s)$. It is named after Pierre-Simon Laplace, who introduced the transform in his work on probability theory. See, Korn, G. A.; Korn, T. M. (1967), *Mathematical Handbook for Scientists and Engineers* (2nd ed.), McGraw-Hill Companies.

[15] Following early work by Louis Bachelier and later work by Edward O. Thorp, Fischer Black and Myron Scholes made a major breakthrough by deriving a differential equation that must be satisfied by the price of any derivative dependent on a non-dividend-paying stock. By employing the technique of constructing a risk neutral portfolio that replicates the returns of holding an option, Black and Scholes produced a closed-form solution for

5.7.2 What Drives Financial Innovation?

Innovation in the financial sector, as in other industries, primarily arises as a response to the needs of users of financial products. These basic financial needs, such as the safe transfer of funds, the financing of private and public venture, the facilitation of savings and investments and the reallocation of risks, led not only to the creation of money as an abstract means to store and transfer value, but also the introduction of banks (Ackermann, 2012: 223).

Shiller (1993) has argued that financial innovation can and should be deployed to manage society's largest economic risks. By this argument, he advanced many proposals on how financial instruments can be deployed to manage and help reduce fluctuations in people's lifetime income and wealth. Shiller (1993) also addresses one of the most powerful drivers of financial innovation, the desire to reduce income volatility and insure against the occurrence of adverse events. It is argued by Levin *et al*. (1987: 785) that most if not all, financial innovations were potentially useful for hedging purposes, as a driver of financial innovation. However, it also provided speculative opportunities, which led to the misuse and abuse of such financial innovation products.

One of the main challenges that remain is the interdependencies between financial institutions across markets and countries generated through the advances in financial instruments. This raises a question of how one can assess whether a new financial instrument is disproportionately risky or not (Ackermann, 2012: 224). In this case, theoretical underpinnings become essential in the absence of adequate field tests. In principle, financial innovation could be tested in a model-based world derived on the basis of economic theory. However, it can be argued at the same time that financial instruments

---

a European option's theoretical price. At the same time, the model generates hedge parameters necessary for effective risk management of option holdings. While the ideas behind the Black–Scholes model were ground-breaking and eventually led to Scholes and Merton receiving the Swedish Central Bank's associated Prize for Achievement in Economics (a.k.a., the Nobel Prize in Economics), the application of the model in actual options trading is clumsy because of the assumptions of continuous (or no) dividend payment, constant volatility, and a constant interest rate. Nevertheless, the Black–Scholes model is still one of the most important methods and foundations for the existing financial market in which the result is within the reasonable range. See, Black, Fischer and Myron S. Scholes, (1973), "The Pricing of Options and Corporate Liabilities," *Journal of Political Economy*, 81 (3), 637–654.

that do not work in theory should not work in practice either. Having said that, not everything, on the other hand, that works in theory does so in practice (Ackermann, 2012: 224).

Therefore, many financial products that could be considered harmless if judged on an individual basis, or from private individualistic interest, may turn harmful and dangerous in an environment marked by a toxic combination of market developments. In most cases, a useful theory is built only after the fact to explain what was previously observed in the market or financial system. Hence, the recent financial crisis of 2008 provides a case in point (Ackermann, 2012: 224).

5.8 Undesirable Consequences of Innovation

It is not surprising that the undesired risks and consequences of innovation are rarely researched as the typical assumption is that innovation is always good. This assumption remains unquestioned and widely accepted (Sveiby *et al*, 2012: 1). This is confirmed by Rogers (1983) in his literature review of innovation over 25 years ago, where he concluded that only 0.2% of research related to innovation addressed consequences of innovation.

To follow up on Rogers's (1983) findings, Sveiby *et al* (2012: 1) conducted a literature review of all papers in the EBSCO database on innovation that study the undesirable consequences of innovation. The study found only 26 papers on 'unintended or undesirable consequences of innovation'; 1 per 1,000, a proportion that has not changed since the 1960s. Sveiby *et al* (2012:1) concludes that this is still the case today on all areas in the scientific field of innovation in general and financial innovation in particular, where the study of negative impact and consequences seems to be marginalised.

Sveiby *et al's* (2012:62) subsequent theoretical framework has been inspired by contributions from four theories. These theories are economic theory, communication theory (diffusion of innovation), Merton's sociological theory and stakeholder theory. Unintended consequences have been a cornerstone factor in economic theory since Adam Smith's work in the 18th century.

According to Smith (1789) prosperity for society as a whole is generated by individuals, who are led by an invisible hand to promote an end, which was no part of his intention[16]. In economics, diffusion theory is regarded as the third step in the Schumpeterian 'trilogy', after invention and product development. This is when the new product and process spread across the market and many different impacts emerge and become known (Stoneman, 1995: 2-4).

The innovator's agents are considered as driving powers, with the intention of spreading or increasing the usage of the innovation among adopters. Hence economic theory defines diffusion from the innovator's perspective (Stoneman, 1995: 4). This theory emphasises, in particular, on the economic impact on the industry and corporations, however, unintended or undesirable consequences are not part of the theme of this theory (Lissoni and Metcalfe, 1993).

The sociological diffusion theory of innovation, however, recognises unintended and indirect consequences on groups of individuals. Hence, it defines innovation from an adopter's perspective, in terms of seeing diffusion as the process of communicating an innovation via certain channels (Rogers, 1976).

Schumpeter (1939: 86) sees innovation together with all its effects and the response to them by the economic system as a key generator of growth in the economy. Innovation is the most distinguished element in the economic history of capitalism and is mainly responsible for what we, at first sight, attribute to other factors, such as industrial processes. In the Schumpeterian economic theory, the effects of innovation are disruption in the economy, which eventually becomes the cause of both the growth of new industries and firms and the demise of old ones. Therefore, for some the direct and indirect consequences will be desirable, and others will suffer, such cycles, as Sveiby *et al* (2012: 62) put it, are an integral part of the capitalist economic system. Schumpeter's (1939: 87) theory has been widely criticised and his view of the role of innovation as the key generator of economic growth has

[16] In economics, the 'invisible hand of the market' is a metaphor conceived by Adam Smith to describe the self-regulating behaviour of the marketplace. This phrase has come to capture his important claim that individuals' efforts to maximise their own gains in a free market benefits society, even if the ambitious have no benevolent intentions.

been reduced in later economic theory. However, his definition of innovation as 'the setting up of new production function', in which he has distinguished between products and process innovation, still in principle the basis of later definitions.

5.9 Pro-Innovation Bias

It is clear from the academic research about innovation, that innovation is based on a predominant assumption, which dictates that 'innovation is good' regardless of its consequences. This is also known as the pro-innovation bias that would raise an alarm (Abrahamson, 1991; Rogers, 1983; Kimberly 1981).

This bias reduces the ability of decision makers and change agents to predict undesirable and unintended consequences. In order to understand how the pro-innovation bias is constantly reinforced, we should understand how innovation is socially constructed on different levels of participants in the society (Sveiby *et al*, 2012: 2).

The pro-innovation bias is the implication in diffusion research that an innovation should be diffused and adopted by all members of a social system, that it should be diffused rapidly and be neither reinvented nor rejected. Rarely, a pro-innovation bias is stated straightforwardly in academic research. Rather, the bias is assumed and implied, therefore, this lack of recognition of the pro-innovation bias makes it difficult and potentially dangerous from an intellectual perspective (Rogers, 2010: 100-107; and Leeuwis, 2013).

It is also important to consider what assumptions innovation is built on and what are the consequences of these assumptions. Moreover, how innovation is discussed by various players, such as academic researchers and how the research about innovation is conducted, by policy makers, funding bodies and other authorities is also an important area to examine (Sveiby *et al*, 2012: 2).

Rogers (1983) concludes that one of the main reasons for this bias in innovation research is historical. This is because innovations have had such positive outcomes on economic growth in the United Sates post World War II that any other outcomes would have been considered marginal, and thus received little attention. Hence, this bias still with us today and is reflected in innovation research.

Pro-innovation bias, however, can be overcome by taking the following points into account when examining an innovation or class of innovation:

1. Investigate the diffusion of innovation while the process is underway to ensure collection of reliable data.
2. Be thoughtful when selecting an area of study, comparative analysis of both successful and unsuccessful cases of innovation diffusion would be useful, because such a wide range of innovation helps overcome pro-innovation bias.
3. Understanding individuals' perception of innovation and their situation given that personal conception could lead to rejection, discontinuous or reinvention of the innovation in question.
4. Diffusion of innovation should be studied in a broader context (Tuan, 2010: 268 and Rogers, 2010: 105-107).

5.10 Three Schools of Innovation

Having established the argument above about the unthought-of or undesirable consequences of innovation and the pro-innovation bias, this section will now focus on the three Schumpeterian schools of innovation, which address the economic, social and cultural issues of innovation. The logic for choosing these three main schools is because they cover all related aspects to innovation and its consequences i.e. economic, social and cultural. This discussion will then lay the foundations for outlining a new school of innovation and its theory from an Islamic perspective.

Amid the concept of innovation in economic theory was advanced by Schumpeter, he assumed only minor reliance of innovation on invention (Solo, 1951; Ruttan, 1959). One of the earliest interpretations of Schumpeter's views that shaped the sequential model was brought forward by two American economists, Y. Brozen and W. P. Maclaurin (Brozen, 1951). Maclaurin's sequential analysis of innovation was based on the interpretation that Schumpeter regarded the process of innovation as being pivotal for the understanding of economic growth. However, he did not give due consideration to the role of science. This analysis by Maclaurin's provided a measurable detailed technological advance process, which is established on defined elements. He divided the process into five steps in this order, pure science, invention, innovation, finance and acceptance or diffusion (Maclaurin, 1953). Brozen (1951) on the other hand, developed two models, one of which explained the required factors for the utilisation of discoveries of science, and the other based on Schumpeter's three categories.

Many years later, these propositions were developed further into a series of linear models of innovation, such as the sequence model suggested by Ruttan, invention $\rightarrow$ innovation $\rightarrow$ technological change (Ruttan, 1959). More contributions to the theory and process of innovation including product development cycle by economists were presented in the following years. The above analysis has lead in later years to the birth of various schools of innovation which are discussed below. The following discussion will elaborate on the nature of innovation, focal concerns, and apprehension of time from the point of view of each school of innovation.

5.10.1 The Corporate Entrepreneurial School: a Social Perspective - innovation as grassroots impetuses

Tzeng (2009) argues that grassroots impetuses feature the pattern of corporate innovation. Classic sources of evidence according to him include:

Peters and Waterman's (1982) research on 62 successful companies in the United States. After conducting various interviews in 1979 and 1980 and a 25-year literature review, Peters and Waterman concluded that 'autonomy and entrepreneurship' were crucial to innovation. Corporate entrepreneurs enjoyed their autonomy in skunkworks[17] in order to avoid formal routines. Moreover, very successful companies carried out innovation in a 'championship process' rather than in 'formal product planning' (1982: 204).

Quinn's (1985) research on large-scale American, Japanese, and European companies: Quinn's investigation lasted for two-and-a-half years examining how Intel, Sony and Pilkington Brothers,

[17] The designation "skunk works", or "skunkworks", is widely used in business, engineering, and technical fields to describe a group of people within an organisation given a high degree of autonomy and unhampered by bureaucracy, tasked with working on advanced or secret projects.

among others, carried out innovation. Overall, he also concluded that innovation operates in 'skunkworks' (1985: 78) and that even though, 'innovation tends to be individually oriented' (1985: 83), it involves 'a high level of group identity and loyalty' (1985: 78). According to him, introducing a new product can be compared to 'raising a healthy child, it needs a mother (champion) who loves it and a father (authority figure with resources) to support it' (1985: 78).

Kanter's (1983) research on the most innovative firms in the United States: It took Kanter five years to conduct 234 interviews in 47 firms. She observed that 'the largest amount of innovation occurred in a peripheral rather than a core area. In addition, innovation 'was self-initiated, this means that innovation was not directed from the top, but was initiated by 'the rebels' who bootlegged organisational resources (1983: 99).

Burgelman's (1983) research into a major diversified, hi-technology firm in the United States: Following 61 interviews and writing 435 pages of field notes, Burgelman concluded that innovation resides in the autonomous strategic impetus of individuals at the operational levels (1983: 241). Based on his conclusion, Burgelman suggested that the institutionalised approach to innovation might be inadequate (1983: 242) because innovations don't fit neatly into established categories (Burgelman & Sayles 1986: 139).

The above discussions lead logically to the following conclusions. Through engagement, corporate entrepreneurs can form 'networks of innovators' (Freeman 1991), reaching out beyond its organisational boundaries to access, channel, and integrate innovative technologies developed by themselves and others (Chesbrough 2003; Schilling & Phelps 2007). Through the conscious and purposeful engagement in networks, corporate entrepreneurs can creatively respond to different opportunities in real time. It can thus be argued that engagement is the discipline of innovation (Drucker 1998).

5.10.2 The Cultural School: a Cultural Perspective - Nature of innovation: deep craft

High-tech innovation is deep craft in itself. As Arthur maintained, Advanced technology resides, in essence, in deep craft' (2001: 7), and deep craft is associated with a shared culture of beliefs, a shared culture of practices' (2001: 8). True technical innovation 'cannot be created by digging information out of books or journal articles' (2001: 11). Instead, it is actually the product of craftsmanship.

Graham and Shuldiner (2001) concurred with Arthur after investigating the 150-year history of Corning. They noted that first, deep craft is not a technique because it is 'a set of skills and sensibilities that cannot be reduced to a science' (2001: xiv). Second, deep craft is an intergenerational heritage in that it is 'shared through time, and the craft is renewed and reinvented in each era in accordance with its peculiar circumstances' (2001: xiv). Third, as it is driven by vision, deep craft is motivated by purposes that go beyond simple materialism (2001: xiv).

5.10.3 The Capability School: An Economic Perspective-innovation as institutionalised capability

Innovation, as an institutionalised capability, characterizes technological change. This observation was made by four eminent historians. Among them, Chandler, a business historian, built his observation (1992) on his unparalleled historical research on the US economic system from the 1850s to the 1920s. On the other hand, economic historians Mowery and Rosenberg established their observation (1998) on their research which traced the paths of innovation in the US from 1900 to 1990. Historian Hounshell (1996) tracked the evolution of industrial research in the US from 1875 to the early 1990s (Tzeng, 2009).

Systemic innovation is dependent on the dynamic capabilities of a firm (Wang & Ahmed 2007), which can be defined as the firm's ability to integrate, build, and reconfigure internal and external competencies (Teece, Pisano & Shuen 1997: 516; see also Teece 2007). Institutionalised capabilities translate into routines, which are the so-called 'genes' in innovation (Nelson & Winter 1982:134). Routines are most of what is regular and predictable about business behaviour (1982: 15). By this definition, there are three classes of routines relevant to innovation: (1) the operating routine, (2) the investment routine, and (3) the search routine (1982: 17). The most important of these is the search routine, which carries out innovation and resides in the research and development (R&D) department where innovations occur (Tzeng, 2009).

The next issue that needs to be responded to, according to Tzeng (2009), is how to institutionalise and routinize innovation. Based on her empirical study of the Objectives, Strategies and Tactics (OST) system at Texas Instruments, Jelinek (1979) argued that institutionalising innovation means codifying program innovation. The purpose of institutionalising innovation is to render a previously ad hoc innovation into a routine, which is a repeatable economic event.

The essence of institutionalising innovation can be described by the following mechanisms. First, systems/routines capture knowledge: It is through administrative systems that planning and policy are made possible, because the systems capture knowledge about the task in question (1979:139). Second, systems/routines generate innovation: As a system, the OST would generalize a procedure for acquiring the requisite new knowledge, creating a shared pattern of thought regarding innovation (1979:141). Hence, innovation can be institutionalised (1979:157).

Research has highlighted the importance of a long time commitment to financing the development of new technology of an enterprise (Lazonick & Prencipe 2005; O'Sullivan 2007). This commitment is presented by how the enterprise decides whether to innovate or not to innovate, which is based on evaluating and calculating the costs and benefits of each R&D project. Hypothetically, the earliest development follows the simple economics of basic scientific research, the expected revenue of the invention exceeds the expected cost (Nelson 1959b: 300).

In order to make such calculations, the capability school treats information as a commodity and views innovation as the production of information (Arrow 1962). It also sheds light on the R&D boundaries of the firm (Pisano 1990). This way, the management of innovation boils down to managing intellectual property rights (Aghion & Tirole 1994). Thus, the recent development in theory involves sophisticated techniques of real option valuation (McGrath & Nerkar 2004). Hence, the management of innovation ends up being manifested into simply managing R&D project portfolios (MacMillan & McGrath 2002).

In practice, according to Merck's CFO Judy Lewent, an advanced R&D paradigm consists of option analysis, financial engineering and game theory (Nichols 1994: 92-98). The green light for innovation turns on under the following two conditions. First, expenditures on R&D should be assured. Nelson and Winter (1982: 310) once stressed the effects of spending on the ability of a firm to innovate, arguing the probability that a firm will come up with an innovation that is proportional to its R&D spending. Second, appropriation of R&D profits should be secured.

As Levin et al. (1987: 783) discussed, to have an incentive to undertake research and development; a firm must be able to generate appropriate returns sufficient to make the investment worthwhile. However, the appropriation of R&D profits is not secured whenever externalities of innovation occur. The profits of innovation may spill over the boundary of the firm, thus becoming public. Once public, the profits of innovation are no longer economically appropriable (Nelson 1992). Thus, market failure will discourage firms from conducting R&D activities (Tzeng, 2009).

5.11 Conclusion

The objective of this chapter is to identify weaknesses in the current financial system, and the approach taken towards innovation in general and financial innovation in particular. It is clear as shown herewith that there is a pro-innovation bias in the academic research and there is a critical area of innovation in general and financial innovation in particular, that has been ignored due to the perception of innovation being generally good.

Thus, there is an urgent need for this area to be researched and put under the spot light for scrutiny. In order to do that, this chapter looked at the aim, objective, process, factors, elements, structure, intended and unintended consequences of financial innovation and highlighted how some financial innovations can be harmful to the financial system, economy and society as a whole. It appears that there is a complacent understanding among regulators, policy makers and players in the banking and financial system to keep whatever action proposed to address this clear weakness, in the approach taken towards financial innovation, to the minimum. This implies that this situation of financial crises and irresponsible practices in the financial system will keep occurring, if it is not dealt with fundamentally and structurally urgently.

The three main schools of innovation as described by Tzeng (2009), their perspectives and building-block ideas are summarised in the Table 5.2 below. This table will be developed further by adding a fourth school of innovation that its principles and foundations will be analysed in the next chapter (Chapter 6).

Table 5.2: Summary of the three main Schumpeterian schools of innovation

	Corporate Capability School: Economic perspective	**Entrepreneurship School: Social perspective**	**Culture School: Cultural perspective**
1. Nature of innovation	Institutionalised capability	Innovation as grassroots impetuses	Innovation as deep craft
2. Inherent logic of innovation	Evaluate	Engage	Envision
3. Relationship among members	Instruction-based relationship	Identity-based relationship	Intergenerational relationship
4. Focal concern	Affiliated institutions	Authentic voices	Affective identification
5. Apprehensions of time	Path dependencies	Improvisation	A deep sense of temporality

Financial innovation should be driven by the needs and demands of users, but that is not the case in the recent years. Financial innovation today, even after the severe financial crisis of 2008, are and have been driven by competition among financial institutions, risk shifting, to circumvent regulation and legal constraints and profit maximisation rather than market demands and consumers' needs. This approach ignores the welfare of society, ethical financial and banking practices, average consumers and users of financial services and the impact on economic development. It focuses on the benefit of very small group in society in contrast to the benefit of all or at least most stakeholders in the society.

This view of financial innovation diverted the cycle of innovation as developed by the early economists with the objective of addressing particular financial needs in the market. However, as we have seen, it works, currently, in reverse; financial institutions create false financial needs in the market to sell their financial innovations for their sole benefit of profit maximisation, risk shifting and resolving liquidity issues. This practice refers to what some academics and regulators called as socially useless or harmful financial innovation. The reasonable way forward, having diagnosed the disease, is to offer the remedy as painkillers do not make the disease go away and will not solve the problem. This remedy would require a cultural change in our financial system and banking practices that should be based on self-imposed moral and ethical criteria. This possible remedy will be explored in more details in the following chapter (Chapter 6) by analysing innovation from an Islamic perspective. This would then help outlining the religious school towards innovation as described in the theory of Islamic economics and finance.

Chapter 6: Financial Innovation Theory from an Islamic Perspective

6.1 Introduction

The previous chapter (Chapter 5) discussed innovation in the traditional economics theory and outlined the innovation approach for three main innovation schools. It also explored the issue of innovation bias in the literature and the role of financial innovation in financial crisis as an influencing and exacerbating factor. The financial innovation theory from an Islamic perspective, however, goes beyond the basic principles of its conventional counterpart. Its basic principles on which it could be built are deeply rooted in the teachings of Shariah, namely the Qur`an and *Sunnah* of Prophet Muhammad, in general and the particular general Shariah rulings of the principles of jurisprudence (*usoul al fiqh*).

Unlike its conventional counterpart that is driven purely by man-made rules, which could be influenced by worldly desires of profit maximisation for the benefit of a small group. The financial innovation theory in Islam takes into account more holistic approach. This approach perceives any financial innovation as a worldly financial activity, which should benefit the wider society and simultaneously as an act of worship of God when based on good intention and being developed in accordance with Shariah and its objectives.

This is very important differentiation in the characteristics of the financial theory from an Islamic perspective, which is, usually, ignored or forgotten in current financial practices of IFIs. This chapter aims to articulate these distinctive features and characteristics on which a religious financial innovation theory is developed and built. This theory then will be the cornerstone for exploring the cycle and processes of any financial engineering and product development in IFIs. This academic endeavour will set the foundations for a rapidly growing interest-free banking system and would ensure that it will not be diverted from its true path and what it stands for. The jigsaw pieces of this theory are already there, they just need to be rationalised and put together within a framework to serve their purpose and make sense. This chapter will aim to do just that by outlining the Islamic school of innovation from an Islamic economics theory perspective as a comparable alternative to the three outlined main traditional schools of innovation in the previous chapter. The chapter concludes then with analysis by identifying the key aspects of the Islamic school of innovation for a more resilient ethical approach towards financial innovation.

6.2 Four Schools of Innovation

Having established the argument in the previous chapter about the unthought-of or undesirable consequences of innovation, the pro-innovation bias and analytically discussed the three main Schumpeterian schools of innovation, we will now focus on establishing the fourth school of innovation. This discussion will then lay the foundations for establishing an innovation school from an Islamic perspective. For the benefit of this chapter we will summarise the three Schumpeterian schools of innovation and their Islamic counterpart that are analysed below. Thus, the four schools of innovation at glance are:

a. The capability school: sees innovation from an economic perspective. Innovation as an institutionalised capability influences technological change. The decision whether 'to innovate or not to innovate' is based on an evaluation of the firm requirements and objectives. Within firms, which are composed of routines, relationships among members are instruction-based; outside the firms, affiliated institutions serve as the engines of innovation. Technological change evolves in a path-dependent way.

b. The corporate entrepreneurial school: sees innovation from a social perspective. Grassroots stimulus presents the pattern of corporate innovation. In addition, grassroots stimulus emerges from a sense of identity and, as such, engages many actors. Authentic voices drive identity-based relationships. Therefore, innovation as a grassroots impetus impulses improvisation in action.

c. The cultural school: sees innovation from a cultural perspective. High-tech innovation, *per se*, is deep craft. Vision is the driver and the core of deep craft and its fabric is intergenerational relationships. Affective and clear identification is the pre-requirement of innovation. For this reason, innovation, as deep craft, is a product of a deep sense of temporality.

d. The Islamic school: sees innovation from economic, social and cultural perspectives. This research proposes to name this school the hybrid school of innovation, which in a way incorporates elements from the three schools above and adds to it. Innovation as institutionalised capability characterises a positive change. Whether to innovate or not to innovate is based on an assessment of objectives sought from the intended innovation, how this will be done and its consequences on all affected stakeholders directly and indirectly.

Grassroots impetus forms the pattern of institutional innovation, and flows from a deep sense of righteousness and social welfare derived from a firm belief in God. A deep rooted vision in Islamic teachings and the oneness of God as the creator who entrusted humanity with this universe to do good deeds, live together and benefit each other is the core of deep sense of identity. For this reason, innovation is a catalyst for social welfare wedded to a strong concept of accountability. This school is explored and analysed further in the next sections of this chapter.

6.3 Definition of Innovation from an Islamic Perspective

According to Lisan Al Arab and Al Qamous Al Muheat, to innovate is to bring about something new that does not have any resemblance for the first time, an idea, act, practice, product etc. Ibn al Atheer mentioned that innovation is of two types, a good one (innovation of guidance (*huda*)) and a bad one (innovation of misguidance (*dhalaal*)), if the innovation is in accordance with and does not contradict the Qur`an and the *Sunnah* of prophet Muhammad, then it is a good acceptable innovation (Ibn Mandhur, 2009).

However, if the innovation contradicts the Qur`an or the *Sunnah* of Prophet Muhammad, it is a bad and non-acceptable innovation. Any innovation that does not fall in either type would fall under the permissible (*mubah*). As an example of a good financial innovation is the establishment of *bait al maal* (the state treasury) by the second caliph Omar Ibn al Khattab.

6.4 The Islamic School of Financial Innovation

Innovation in Islam should be performed with the objective of bringing something beneficial to individuals and society as a whole. Islam has warned those who innovate with bad intentions, who do not give due consideration, when innovating, to the wider society and environment, or initiate something bad in society, that these actions are a punishable sin. Islam has encouraged innovation to address any new issues by making it as one of the five primary sources of Shariah. This is embedded in the concept of *Qiyas* (analogical reasoning and rationalisation) and *Ijtihad* (an individual scholarly interpretation to come up with an answer or a solution to address pressing issues) (Al Khun, 1994: 29).

Ijtihad has been encouraged by the Prophet Muhammad (peace be upon him) when he said whoever attempts to make a legal reasoning or judgement (makes *Ijtihad*) and his or her conclusion is correct, will gain a double reward from God, and those who tried their best and their judgement is proven to be incorrect, will get one reward for their attempt (Al Khun, 1994: 29).

However, this attempt to reach a ruling, about a financial issue e.g. or financial innovation, should be sincere, based on employing all efforts to reach the right conclusion within the parameters of Islam and the permissible and impermissible in Shariah. Furthermore, innovation should be with the objective of brining good and benefiting the society as a whole. If innovation is for the benefit of an individual(s) only, it stops to being considered as a good innovation when it clashes with the overall benefit of the society and its welfare (Khallaf, 1942).

Islam however advocates accountability; punishment and rewards are all based on actions and intentions. Prophet Muhammad (peace be upon him) said 'whoever makes a good innovation, he or she will be rewarded for it and will even get the same reward as those who followed it, and whoever makes harmful innovation (bad innovation that contradicts the teachings of Islam) he or she will be held accountable for it and he or she will even get the same sin as those who followed it' (*Majma' al zawa`ed*, 1980: 173). Thus, the criteria for a financial innovation to be acceptable in Islam is that innovation, in general, and financial innovation, in particular, should be in accordance with Islamic teachings, undertaken for the good of all stakeholders, accompanied with a good intention and is not socially useless or harmful.

6.5 The Mechanics of Financial Innovation – The Role of Jurisprudence

Jurisprudence emerged as a natural result of changes in the Islamic society after the death of Prophet Muhammad (peace be upon him). During his life, he was the point of reference for any new legislation addressing arising issues that require an Islamic view. With the Islamic state expanding rapidly to other parts of the world, new issues, which did not exist at the time of the prophet (peace be upon him), were faced by Muslims.

These new situations required taking certain approaches by early Islamic jurists to extract Shariah rulings based on the Qur'an and the *Sunnah*, but not covered by either of them. Therefore, the word jurisprudence means in Arabic, the efforts made to form one's own judgement (*ra'y*) about an issue that requires a Shariah legal opinion (Khallaf, 1942).

The legitimacy of this approach is derived from an event when the prophet (peace be upon him) sent one of his companions, his name Mu'az Ibn Jabal, to Yemen as a judge and teacher. When he came to take leave of the Prophet, Ma'adh was asked how he would govern. Ma'adh said, according to the Quran. The Prophet thereupon asked what he would do if he did not find the solution to the problem in the Quran, to which Ma'adh said he would govern according to the *Sunnah*. But when the Prophet asked if he could not find it in the *Sunnah* also, Ma'adh said: I will exert myself to find the solution. The Prophet thereupon patted his back and told him he was right. Thus, the prophet (peace be upon him) guided him about the method to be used in the absence of a clear ruling in the Qur'an and the *Sunnah*. This method was the power of reasoning to reach a ruling or a judgment (Khallaf, 1942).

Therefore, jurisprudence is based on various sources and employs certain principles in deriving the required Shariah rules. These sources are called by the Islamic scholars, the primary sources of legislation in Islam. The first and foremost of these sources are the Qur'an then the Sunnah.

Whenever there are explicit rules in both of them there would be no room for the power of reasoning or self-judgment. However, when a clear rule is absent in both of them, the understanding of the Qur'an verses, their purposes and the interpretation of the *Sunnah* including *Ahadith* (sayings) of the prophet (peace be upon him) and their intention, which the contemporary Islamic scholars call the spirit of Shariah, should be employed. This is in order to guide the Islamic jurists towards arriving at the required Sharia rule. Hence the core of jurisprudence is the Qur'an and the Sunnah (Wilson and El-Ashker, 2006: 35).

The other primary sources on which Islamic jurisprudence is based are: consensus of jurists' opinion (*ijma'*), analogical reasoning based on established precedents (*qiyas*) and the interpretation of an individual jurist (*ijtihad*). There are also secondary sources of Shariah[18] that could be considered when making a Shariah legal opinion in relation to financial innovation (Khallaf, 1942).

6.6 The Application of Normativity Through Social Practices - Bourdieu's Theory

A sophisticated post-structuralism sociological approach is provided by the work of Pierre Bourdieu. Bourdieu provides a powerful account both of the features of legal reasoning (as discussed above regarding the tool of *ijtihad*) and of the requirements and processes of its production. This provides an explanation that avoids the dilemma between idealism and economism, in order to reconcile both of them (McCahery and Picciotto, 1995: 180). The body of legal doctrine, as Bourdieu argues in his theory, is a symbolic order which at any moment could delimit what is possible. Nevertheless, legal doctrine appears, due to its autonomy, abstract and formal nature, to be a closed and coherent system, which generates outcomes from its own embedded internal logic; it does not process the principles of its own dynamics (McCahery and Picciotto, 1995: 179).

Islam provides a full and comprehensive code of conduct covering all aspects of life including economics and finance (Naqvi, 1981). Therefore, an analogy can be made between the Islamic

[18] The secondary sources of Shariah would include *Maslah* (the consideration of public interest), *'Aurf* (custom) and *Istihsan* (approval of a good practice that does not contradict Shariah).

approach and Bourdieu's normativity theory as the basis for analysing a financial innovation theory from an Islamic perspective. Bourdieu's normativity theory uses the normative practices that are embedded in a legal structure which is observed, enforced and supervised by a legal symbol. This theory could form the basis of an innovation theory from an Islamic perspective. This is because of the similarity represented by the framework, which incorporates principles and requirements ordained by a divine authority, God, who sets those instructions.

This framework emerges from normative Islamic practices, to be embedded as part of the financial innovation cycle, rather than a man-made rules or laws for normative social practices in accordance with Bourdieu's normativity theory. The theory framework for both has some congruencies however; the legal authority for each is different. Furthermore, the social practices and behaviour in one, the Islamic innovation theory, is derived from a firm religious belief in a divine authority while the other is derived from a legal authority, which is not necessary to be a form of firm belief in the law or conviction.

One may ask what the relation would be between Bourdieu's theory and financial innovation. As mentioned above, the aim is to demarcate the financial innovation theory from an Islamic perspective. This is achieved by drawing on Bourdieu's theory of generating normativity through social practices, which fits perfectly with financial innovation in the theory of Islamic economics.

This is largely, because the generation of innovation theory from an Islamic perspective must be based on the Islamic legal structure and law, which are derived from the main sources of legislation in Islam. These sources are the Qur'an and the *Sunnah*; the principles on which financial innovation theory can be outlined are derived from both of them, and then embedded in economic, social and cultural practices. Islam provides the legal framework for the conduct and practices that should be embraced by Muslims as part of their life, regarding economic activities and financial innovation. This approach, in relation to financial innovation theory, is considered to be inseparable part of any Muslim fulfilling the requirements and instructions ordained by the higher authority, God the creator. Islam has succeeded in establishing an inner consciousness, self-supervision and accountability in those individuals conducting economic and financial activities within society. For instance, there is not any legal body to enforce *zakat* and punish and imprison those who do not pay their *zakat*, despite *zakat* being a compulsory obligation in Islam. *Zakat* should be paid to the deserving poor and needy, as detailed in the Qur`an and Sunnah, which set the criteria for those deserving the payment of *zakat*, in an Islamic society. This is in contrast to the way civil law deals with those who do not pay taxes imposed by government. Muslims calculate their annual *zakat* payment due on their wealth, according to the applicable percentage (2.5%) and pay it as a religious duty without being supervised by a legal authority (Naqvi, 1981).

Bourdieu (1987: 833) provides a very strong argument on how the legal sphere is constructed. However, he is less clear in his argument on why abstract formal rules play such an important part in the production of social relations. In his view, legal rationality provided by the system (in our case the system here is the divine injunctions as ordained by God) offers predictability and calculability. For Bourdieu, the power of law is derived from the effectiveness and authority of legal symbols in giving the ‘seal of universality’ to social practices (1987: 845). Legitimacy is imposed in the social order through symbolic domination. Although Islamic jurists can provide competing interpretations, they must operate within the hierarchy of both institutions and norm-sources, which defines the authority of legal decisions (McCahery and Picciotto, 1995: 179).

Bourdieu (1987: 818) stresses the notion of social practices of participants by introducing his key concept of his theory of the ‘habitus’, which translates into durable differences in the outlook of differently situated groups. It provides an understanding of how humans internalise power structures and actively reproduce them. He explains this concept by stating that the juridical field tends to operate like an ‘apparatus’ to the extent that the cohesion of the freely orchestrated ‘habitus’ of legal interpreters is supported and strengthened by the discipline of a hierarchized body of participants (professionals), who utilise a set of an already established procedures.

In order to put this concepts into contexts and elaborate a little bit more, the habitus is defined as ‘the system of dispositions to a particular practice, an objective basis for the regulation of behaviour, and hence for the regularity of modes of practice. Then, if practices can be predicated, this is because the effect of the habitus is that agents who are equipped with and will behave in a particular way in certain circumstances (Bourdieu, 1990: 77, also in McCahery and Picciotto, 1995).

Groups bring a different cultural understanding to existing power structures through an act of creative syncretism, through an institutional innovation. This symbolic action activates both of Laitin's two faces of culture, as the change in symbolic works both signal different goals and to mobilise collective action to achieve them (Bourdieu, 1989). This process of aligning ends and means through symbolic action is identified by Smith as strategic constructivism (2006: 26). Bourdieu's concept of habitus portrays actors as being quite conditioned structurally; for instance, he rejects exclusionary portrayals of cultural elites, arguing instead that they are simply expressing in cultural terms their true position in objective relations. Bourdieu's formal name for his approach is structural constructivism (Bourdieu, 1989).

Using symbolic power to align ends and means is clearly evidenced in the case of Islamic banking as an innovation of Islamic finance. Once the framework of Islamic finance is established, the mobilisation of capital within that framework is supportive of religious and cultural objectives (Smith, 2006: 28).

Islamic finance deploys both of Bourdieu's symbolic strategies; the subjective side represented in the application of Islamic law to finance that creates a distinction between it and the existing conventional finance. From an objective perspective, Islamic finance has become a powerful symbolic notion of identity that encouraged Muslims to re-evaluate their financial dealings. Also, Islamic financial institutions began to expand for a share in the market to meet the rising consumer demands (Bourdieu, 1989).

Therefore, the repertoire of behaviour is structured and limited by the habitus, even though it permits a range of innovation, which follows a practical logic. Bourdieu argues that, in order to avoid the twin charges of determinism and functionalism, the concepts of the field and of habitus must be understood as interactive notions (Bourdieu, 1992: 102-115). This raises a question of whether the Islamic theory of financial innovation would be compatible with the conventional counterpart.

As discussed in the previous chapter (Chapter 5, section 5.8) and is elaborated in Section 6.7 below, not all financial innovations have been beneficial to society not mentioning the negative effects on economy. Financial innovation from an Islamic perspective is limited and controlled by certain parameters and requirements that must be met and are by nature embedded as a habitus in the economic and social practices. This does not, in any way, suggest that it would be restrictive and limited because of these restrictions, as this view will be eliminated when we discuss these exclusions in innovation theory from an Islamic perspective, which would, potentially, be harmful to the society.

6.7 Socially Useless Financial Innovation

This view has been advocated by Turner who argued that many forms of financial innovations, which are of concerns, have a great potential to generate large negative externalities. Those financial innovations would produce not merely redistribution of an unchanged economic cake, but harmful instability in overall patterns of economic growth (2012: 36). Turner further argues that financial innovation might be of *zero* social value, even if it did not generate actually negative externality effects. However, factors which can make financial innovation a driver of systemic financial instability will produce not just *zero*, but negative effects on society. The higher the share of complex financial services, the greater the danger that highly skilled people are taking part in financial activities, which produce large private returns, but only have a merely distributive social impact. (2012: 60).

Rajan echoes this argument, he explains that when producing and using financial innovations and products, we should ask ourselves if we are producing a socially useful financial innovation , however with few exceptions, making money ('profit maximisations' in the Islamic view regarding the principles of innovation theory) is the *raison d'etre* of the financier. This absence of naturally arising checks and balances creates a potentially legitimate role for regulatory interventions (2010: 121-133).

It is proven that regulatory intervention is not always effective as it requires a cultural change in grassroot economic and financial practices. This is however different in the Islamic theory of financial innovation as it is already orchestrated on a firm religious belief and a world view instructed by God as the Creator, which forms the legal framework that governs such financial practices.

This theory of a hidden power that drives behavioural and cultural activities is what Adam Smith (1789), referred to as the 'invisible hand'. This view was based on the assumption that innovation incentivised by self-interest would serve the social good. Smith's theory was originated in the 18^{th} century, when he described his theory about the 'invisible hand' in the context of a very simple and basic financial market. However, the question that is posed here is whether this theory applies today, or it has become redundant as the financial system has developed and advanced. This question is particularly relevant, when considering the absence of real competition in the financial and banking system, the widespread occurrence of monopolistic power and the failure by the relevant financial and regulatory authorities to curb this abuse of power.

Thus, it is believed (Al Saead, 1970: 112) that the Islamic economics and finance system provides a better alternative to the 'invisible hand' theory. This alternative is manifested by a multi-layered approach, which is: the divine accountability of an individual's financial behaviour, followed by a self-supervision, supervision by appointed credible and trustworthy Islamic scholars to monitor and approve financial innovation and products offered by Islamic financial institutions. Finally, the supervision of Muslim society, who would boycott any financial practices that are perceived to contradict the principles of Shariah. This reaction by society in response to bad financial practices that contradict Shariah is considered one of the main risks that would threaten the very existence of an IFI and damage its reputation. This concept will be analysed in more details in the sections below.

6.8 Economic Thought in the Qura'an and the Sunnah, Basic Philosophy for Financial Innovation Theory

Three cardinal ideological concepts and three main principles could be considered to establish the basic philosophy of Islamic economic thought, which also apply on the theory of financial innovation from an Islamic point of view. The three concepts are: the concept of unity, the concept of viceregency of human being on earth and the concept of free-will and responsibility. The principles are considered to be the principle of moderation, the principle of economic efficiency and the principle of social justice (Ahmed, 1980 and Naqvi, 1981).

6.8.1 The Concept of Unity, *Tawhid*

The concept of unity emerges from the first pillar of Islam which emanates from Muslims' firm belief in the oneness of God with the belief in Prophet Muhammad (peace be upon him) as His messenger. This concept has many implications, some of which are: the unity of the creator (God), the unity of His attributes (*sifat*), the unity of His work and creation and, as a consequence, the unity of the universe as fully integrated in this unity of God (Al Saead, 1970: 112). Nothing can be viewed in separation of His will or work, nor could be seen in isolation of His existence. The whole creation should be seen as a 'whole', and be viewed as an integrated part of the holiness of the oneness of God (Wilson and El-Ashker, 2006: 37).

The key to the economic, including financial innovation, philosophy of Islam lies in a person's relationship with God, His universe and His creation. This philosophy, as a common factor with other Abrahamic religions like Judaism and Christianity, is the basis of the moral appeal to humans to surrender themselves to the will of God (Al Najjar, 2003: 134). Islam even goes beyond this exhortation and makes it clear that all life is essentially in unity because it also provides the practical way to conduct all facets of human life, including economic and finance activities, in accordance with God's will. There should be unity of ideas and actions in a person's existence and consciousness (Asad, 1993). Muslims believe that their success in the hereafter depends on their performance and actions in this life on earth, because all people are accountable to God. This, therefore, adds a new dimension to the valuation of people's deeds, including the generation, conduct and practices of any financial innovation or activity, in this life (Siddiqi, 1981).

The consequences of the whole-ness of the universe, as discussed above, dictates that any economic activity undertaken by an individual or a group of individuals should not be harmful to the interests of others, nor should it be damaging other sources of goodness in the universe. Moreover, this also means that no abuse or misuse of economic resources in pursuit of 'maximisation' of benefit to some individuals or a group of individuals by sacrificing the benefit to others (Wilson and El-Ashker, 2006: 37).

A definite relationship between all humans is therefore prescribed in Islam. This is the relationship of brotherhood and sisterhood and equality (Abu Sulayman, 1976). Thus, the users of economic resources should always maintain a well-defined balance. Any deviation from this rule must be immediately rectified by the individuals themselves in the first instance, then by the state, which has the right to rectify the damage, if the individual has failed to put things right. If the harm caused was deliberate and persistent, God's retribution is promised in return in this life and in the hereafter for the wrongdoers and abusers of the system (Al Aqla *et al*, 2004: 16). The Qur'an says "Whoever breaks the covenant of Allah after contracting it, severing that which Allah has ordered to be joined and causing corruption on earth. It is those who are the losers" (Qur'an, 2: 27). However, if they rectify their actions, God is always forgiving and is generous in His reward for the repentant. The Qur'an says "Except for those who repent and correct themselves and make evident [what they concealed]. Those, I will accept their repentance, and I am the Accepting of repentance, the Merciful", (Qur'an, 2: 160).

Hence, unity is a coin with two faces: one stresses the fact that God is the sole creator of the universe, and the other emphasises that people are equal partners or that each person is a brother or sister to the other. As far as economic thought and the theory of financial innovation is concerned, this means cooperation and equality of effort and opportunity, all for the well-being of people and society as a whole (Rice, 1999).

6.8.2 The Concept of Vicegerency, *al Khilafah*

The concept of vicegerency is the core of the Islamic philosophy on which the Islamic economic thought and the theory of financial innovation revolves. Stressing this fact, man is the centre of the universe and God's deputy on earth (Al Aqla *et al*, 2004: 12), the Qur'an says, "He it is who has created for you everything on earth", (Qur'an, 2; 29), and "When your Lord said to the angels, I am placing on earth one that shall rule as my deputy", (Qur'an, 2; 30), also "It is He who had made you vicegerents on earth", (Qur'an, 35; 39).

This dictates that the deputy has to perform his duties in accordance with his superior's instructions. God has laid down His instructions for utilising economic resources on earth and innovating financial products from these resources in the manner He wishes it to be performed (Meneam, 1979: 38). Ibn Taymiyyah (1994: 53-54) and Al Maydani (1996: 5-10) argue that the use of the word '*khilafah*' is not correct as it means that the '*khalifah*' is the successor of his predecessor, normally, after the death of the predecessor. This is not appropriate as it negates one of God's divine attributes as the only living being Who never dies. Al Tha'alibi (1997: 536) in his interpretation of the Qur`an also emphasises this notion. Thus, we tend to use the word trusteeship instead of '*khilafah*' and the word trustee instead of '*khalifah*'. This is to ensure a balanced approach of the concept of vicegerency that takes into consideration the reservations of some Islamic scholars on the use of those words from a linguistic and Shariah perspectives due to their perceived meaning in that context.

Although, material prosperity is desirable, it is not an end *per se*. What is critical is the motivation, the desired "ends" of economic activity or financial innovation. Having established the right motivation, all economic activity assumes the character of worship (Siddiqi, 1981). In other words, man utilises and controls economic resources as a trustee on the basis of a trusteeship between him and God, the creator and provider of these economic resources (Ahmed, 1976: 163-4). Resources must also be disposed of in such a way as to protect everyone's well-being (Al-Faruqi, 1976).

We as humans are, therefore, accountable to God, for any violation of these rules by virtue of the principles of trusteeship and stewardship we would deserve His punishment. This concept has many implications for all economic factors on earth, consumption of economic resources, development of these resources including financial innovation and product derived from it and the distribution of values and benefits among all participants (Wilson and El-Ashker, 2006: 38). It is also worth mentioning that the notion of trusteeship is also common to the Jewish and Christian faiths; Green (1993) refers to Psalms 24:1, "The earth is the Lord's and the fullness thereof".

6.8.3 The Concept of Free will and Responsibility, *al-Iradah wa al-Masu`wliyyah*

a) Free will and Trust (*Amanah*)

Free will is clearly stated in the Qur'an, it is the ability of human beings to choose, select and decide. Man has the freedom to choose between good and evil, and his destiny is only known to God through His eternal wisdom and knowledge of the characteristics of the man He created. We, therefore, as humans have a free will to act in harmony with God's code of conduct, or in other words the straight path, or to divert from it, and God knows that in advance (Al Zarqa, 2012: 48-51). This fact is emphasised in various places in the Qur'an, "Have We not given him two eyes, a tongue and two lips, and shown him the two paths?" (Qur'an, 90: 8-10). This means that it is up to us which path we choose to follow.

Man has also accepted to bear the burden of God's trust (*amanah*) on earth while no one else dared to do so, Qur'an says, "We offered Our trust to the heavens, to the earth and to the mountains, but they declined to bear it for fear of its burden, and man assumed it", (Qur'an, 33: 72). Hence, the delegated authority given to us by God is manifested in the free will and in the established trusteeship between God and us (Al Najjar, 2003: 67). Having also assumed God's trust, a big responsibility comes with it to maintain this trust in the manner God expects us to observe as we will see below in the following section.

b) Responsibility

Responsibility imposes limits to man's freedom of choice and dictates accountability for his actions. Authority with free will, on one hand, portrays one side of the trusteeship agreement, responsibility, on the other hand, represents the other side of this relationship between God and us (Al Aqla *et al*, 2004: 16). This contractual relationship governs the way on which economic resources are owned by man as a trustee, and also establishes the conditions for its management (Hamed, 2000: 178)). Any breach or violation of these conditions makes man accountable to the ultimate owner, God. The limitations to our freedom in utilising economic resources on earth is two-fold, we should seek efficiency in resource production, and ensure social justice in resource distribution (Ahmed, 1976: 88). These elements should be observed constantly when we consider financial innovation, in order to be within the parameters set for an Islamic theory of financial innovation as a diversion from this theory will have its consequences as explained above.

c) A system of reward and punishment

In order to complete operational mechanism of the trusteeship agreement where the fulfilment of duties and responsibilities will be assumed in the Hereafter and judged accordingly. Therefore, a system of reward and punishment has to be established (Al Zarqa, 2012: 36). The Qur'an says, "And every man's augury have we fastened to his own neck, on the Day of Judgement We shall bring out for him (his) scroll, which he will see spread open. Read thine (own) record, sufficient is thyself this day to make an account against you", (Qur'an, 17: 13-14). Qur'an also says "That Day, the people will depart separated [into categories] to be shown [the result of] their deeds. So whoever does an atom's weight of good will see it, and whoever does an atom's weight of evil will see it", (Qur'an, 99: 6-8).

6.9 Islamic Economic Principles – The Fundamentals for an Islamic Theory of Innovation

The principles of Islamic economics are essential for the study of financial innovation from an Islamic perspective. They set the broad structure for a possible conceptual framework for financial innovation. These principles are explored further in the following sections.

6.9.1 The principle of moderation (*I'atidal)* in financial innovation

The principle of moderation implies that human behaviour, the economic and even non-economic should be exercised with moderation, avoiding any extremism. Consumption should be in moderation, Qur'an says, "Let not your hand be tied to your neck (in not spending) nor let it be stretched fully (in spending extravagantly) so that you may not end in poverty and regret", (Qur'an, 17:29). The concept of moderation, therefore, is based on Islamic ideology and it applies not only to the utilisation of resources, but also to religious devotion in obeying God (Wilson and El-Ashker, 2006: 40). Muhammad (pbuh) instructed Muslims to be moderate in all their affairs; he described Islam as the "middle way." A balance in human endeavours is required to ensure social well-being and the continued development of human potential (Rice, 1999).

Ahmed (1976) argues that Islam recognises what Marxism sought to deny: the contribution of individual self-interest through profit and private property to individual initiative, drive, efficiency and enterprise. At the same time, Islam condemns greed, unscrupulousness and disregard for the rights and needs of others, which the secularists, sometimes encourage this worldly aspect of capitalism. The individual profit motive is not the chief propelling force in Islam (Siddiqi, 1981). Social good should guide entrepreneurs, businessmen, banking and finance professionals and even financial regulators and policy makers in their decisions, besides profit. A relevant saying of Prophet Muhammad is "work for your worldly life as if you were going to live forever, but work for the life to come as if you were going to die tomorrow", (al Qasimi, 1976: 68).

Like some other religions, Islam places a greater emphasis on duties than on rights. This is because, if self-interest is automatically held within bounds and the rights of all members of society are undoubtedly safeguarded, duties then, relating to justice and trusteeship, for instance, are fulfilled by everyone. Therefore, society is the primary institution in Islam and not the state (Cantori and Lowrie, 1992).

Chapra (1992) argues that it is crucial to focus on human beings themselves, rather than on the market or the state, in order to create equilibrium between scarce resources and the claims on them in a way that realises both efficiency and equity. This argument by Chapra is necessary for demarcating the theory of financial innovation in Islamic economic thought; as the well-being of humans is the focus in this theory rather than the market or an individual institution. It should also consider any adverse consequences on society rather than being driven by self-interest and profit maximisation.

Islamic jurists and the Islamic law or 'Shariah' directs governmental power. In particular, Muslims believe that the Qur'an contains a final and unambiguous statement of the truth, added to and complemented by what had gone before in previous Divine revelations (for example, the messages delivered to prophets Moses and Jesus). The duty of the Muslim community, therefore, is to preserve this message (Cantori and Lowrie, 1992). Thus, Muslims have a profound horror of anything regarded as innovation in matters of religion that is not permitted or based on the innovation theory that has been discussed herein, including what modern Christians interpret as necessary adaptations of religion to changing times (Eaton, 1994).

6.9.2 The Principle of Economic Efficiency in Financial Innovation

This concept complements the previous concepts of unity and trusteeship. Economic resources should be used in the most economically efficient manner to maximise the value of output in relation to that of the input regarding financial innovation. The input is provided to us by God in the form of natural and economic resources, which along with other factors of production; generate the increase in the wealth of nation in the form of its gross national product (Wilson and El-Ashker, 2006: 41). Thus, indulgence in luxurious living and the desire to show-off is very disliked and condemned. Islam does not tolerate conspicuous consumption (Hamed, 2000: 158).

Islam differentiates clearly between two important things *israf* and *tabzir*. *Israf* means extending the level of consumption beyond the level of acceptable basic needs. *Tabzir*, on the other hand, is the unnecessary use of economic resources, which means wastage of economic resources at all levels of consumption. *Tabzir* is not limited to the level of extravagance; it goes even further beyond that to include the wastage in the consumer behaviour in satisfying his or her very basic needs of these physio-sociological wants (Hamed, 2000: 57).

Keynes' (1972) observations on this subject, as Rice (1999) advocates, may be useful to draw on. He asserted that even though "the needs of human beings may seem to be insatiable," they would fall into two classes, those needs which are absolute in the way that we feel them whatever the state of our fellow human beings may be, and those that are relative ones in the way which their satisfaction ranks us above or makes us feel superior to others. According to Chapra (1992) Islamic jurists' categorisation of necessities (*daruriyyat*), conveniences (*kamaliyyatt*) and refinements (*tahsiniyyat*) would fall into Keynes' first class of needs. These are any goods and services which fulfil a need or reduce a hardship and make a real socio-economic difference in human well-being.

Therefore, resources would not be allowed to be diverted to the production of luxuries until the production of necessities was ensured in sufficient quantities (Siddiqi, 1981). The definition of luxurious or extravagant is related to and measured against the average standards of consumption in a society, the idea being that a large shift from the standards would not be permissible (Rice, 1999).

Therefore, there is a clear distinction, as discussed above, between *israf* and *tabzir* as the former refers to the extensive use of resources, while the latter is the wasteful use of these resources (Wilson and El-Ashker, 2006: 42). The Quran says "Verily resource wasters (*mubazzirin*) are brethren to Satan and Satan is the worst unbeliever", (Qur'an, 17:27). *Tabzir* attracts the wrath of God, for which the penalty is His retribution. Hence, both production and consumption functions in society are, with no doubts, affected by this basic notion in Islamic economics about *israf* (extension) and *tabzir* (wastage) (Abduh, 1974: 42). Islam teaches us that no one is allowed to destroy or waste God-given resources. This is very relevant to ethics concerning the theory of financial innovation and its economic impact on the environment, economy, culture and society.

When Abu Bakr, the first ruler of the Islamic state after Muhammad, (peace be upon him), sent an army on a war assignment, he exhorted the leader of the army not to kill indiscriminately or to destroy vegetation or animal life, even in war and on enemy territory. Therefore, there was no question of this being allowed in peacetime or on home territory. Trusteeship is akin to the concept of sustainable development. Models of sustainable development do not regard natural resources as a free good, to be plundered at the free will of any nation, any generation or any individual (UNDP, 1994).

6.9.3 The Principle of Social Justice (*al-A`adalah al-Ijtima'iyyah)* in Financial Innovation

Social justice as a principle in Islam is embedded in all economic activities. Islam emphasises equality among people regardless of their race, gender, faith, social class and wealth (Abdul Meneam, 1979: 54). Prophet Muhammad (peace be upon him) said "People are as equal as the comb's teeth", (Sahih al-Bukhari), and also said "the noblest of you are the best in character", (Sahih Muslim).

Islam is certainly clear in its objective of eradicating all forms and traces of inequity from society, injustice, exploitation and oppression. This objective should be observed with due consideration in the financial innovation theory to ensure financial innovation is established on emphasising social justice and avoiding any form of exploitation of any stakeholder, including the environment, in the financial innovation cycle. The Qur'an also explicitly condemns vicarious guilt or merit and teaches the greatest possible individualism (Chapra, 1992), ". . . no bearer of burdens can bear the burdens of another; . . . man can have nothing but what he strives for . . .", (Qur'an 53:38–9).

This individualistic outlook on the spiritual destiny of humanity is counterbalanced by a clear rigorous conception of society and social collaboration in all aspects of the financial innovation cycle (Al Zarqa, 2012: 230-9). In their acquisition of wealth, however, people should not lie, deceive, cheat, cause harm or damage; they must uphold promises and fulfil contracts. This underpins the economic theory of financial innovation in Islam by advocating a universal view rather an individualistic selfish one.

Islamic teachings show us the right path by teaching us that all wealth should be productive and people may not stop the circulation of wealth after they have acquired it, nor reduce the momentum of wealth circulation (Al Hamshari, 1985: 83). This Islamic worldview of financial innovation, in contrast to the conventional worldview, is the product of a divine guidance that brings together economic activities and self-accountability if the above is not incorporated in every stage of financial innovation.

This firm commitment of Islam to justice and brotherhood and sisterhood stipulates that Islamic society takes care of the basic needs of the poor and needy. Individuals are required to earn a living and only when this is unachievable does the state intervene. The institution of *zakah* in Islam, which is, a tax on wealth comprising compulsory alms-giving for specially designated groups in society, facilitates the care of all members of society. The rich are not the real owners of their wealth; they are only trustees in accordance with trusteeship agreement with God. Thus, they must spend it in accordance with the terms of this trust by very important requirement to fulfil the needs of the poor.

The word "*zakah*" means purification and as such, income redistribution is not only an economic necessity, but also a means to spiritual salvation (Naqvi, 1981) and gaining God's reward (". . . of their wealth take alms so that you might purify and sanctify", (Qur'an 9:103). Therefore, economics in general and the theory of financial innovation in particular is effectively integrated with the principle of justice.

6.10 Application of the Basic Islamic Philosophy in Financial Innovation

The above mentioned Islamic ideological concepts and principles aim to serve one purpose, which is the proper utilisation and management of economic resources to satisfy our needs, and to preserve the environment around us and our social unity and coherence.

The emphasis is therefore on the human being as the real wealth of society. An excessive obsession with the creation of material wealth can obscure the ultimate objective of enriching human lives. Humans are thus the ends as well as the means. Unless humans are motivated to pursue their self-interest within the constraints of economic well-being (the application of the "moral filter"), neither the "invisible hand" of the market (Smith, 1789) nor the visible hand" of central planning can succeed in achieving socioeconomic goals or deliver beneficial sustainable financial innovation as theorised herewith (Chapra, 1992).

The overall objective of Islamic ideology in relation to economic activities is not based, therefore, on the concept of ‘maximisation’ of any sort of utility, profit or wealth, but on the concept of preserving the universe (Wilson and El-Ashker, 2006: 44). Adopting the concept of ‘maximisation’ in Islamic economics and financial innovation would, definitely, conflict with the basic Islamic ideological concept of moderation. The goals of the financial innovation theory, in particular, and the economic thought, in general, in Islam are not primarily materialist. They are based on Islamic concepts of human well-being and a good life, which emphasises brotherhood/sisterhood, socioeconomic justice and requires a balanced satisfaction of both the material and spiritual needs of all humans (Abduh, 1974: 74).

6.11 The Origins of Shariah Supervision and Governance

As we have discussed in Chapter 4, the development of Islamic economics and finance has gone through various phases. During this period of development, the ethical conduct and Shariah supervision in the financial market has also evolved. This is to ensure that the Islamic financial principles and philosophy, mentioned earlier in the previous sections of this chapter, in relation to the utilisation and deployment of economic resources are conducted in accordance with the legitimate ethical use of those resources. Financial innovation and engineering, as part of the economic and financial activities, should also adhere to those prescribed Shariah fundamentals. Therefore, Shariah governance and supervision has also developed accordingly, this was due to the expansion of the Islamic state and the use of new, different financial instruments.

Hence, the concept of establishing a Shariah Supervisory Board or Committee (SSB) that ensures proper Shariah governance within IFIs, since its emergence in the 1970s, is not a new phenomenon. This Shariah governance is rooted back to the concept of *Hisbah* (accountability and supervision), which was applied in various forms within the Islamic state in the past.

Hisbah was defined by al Mawardi and Abu Ya’la al Farra` as “Enjoining what is good when no one else is doing so, and forbidding what is evil if it spreads”, (1985: 240). Al Shiraazi added to that definition "and reconciliation among people", (1946: 6). Therefore, the *Muhtasib* (supervisor) should be a jurist and a Shariah scholar, in order to be able to assess the validity of a financial transaction or a financial innovation and to prevent any prohibited financial transactions or harmful financial innovations. Moreover, he should be able to identify void sale contracts, those contracts that are disliked in Shariah, different forms of cheating in financial transactions, misleading, uncertainty in contracts, ignorance in commodities' prices or fees charged for services, manipulation of the market, taking an advantage and exploiting people's needs, delivering or offering defective financial products or not being in accordance with the agreed product specifications (Al Shiraazi, 1946: 12).

Hisbah emerged at the time of Prophet Muhammad (pbuh), although, it was not known by that name then. There was not a need during that era for this Shariah supervision as the Prophet was still living among the people, as his teachings and his conduct had positively influenced the Islamic society, shaping it into one with the best ethical and behavioural conduct and this was reflected in the market place, in particular.

At that time, the Islamic state had limited and simple financial activities that did not require a sophisticated system for Shariah supervision. This was the case until the end of the era of the righteous guided caliphs, who followed the example of the Prophet Muhammad in conducting the *hisbah* themselves. However, when they were busy running the affairs of state, they entrusted the task of market supervision to the most devoted, righteous, honest and trustworthy individual of the companions, as this was a role viewed as having great importance (al Mawardi, 1985: 256).

When the Islamic state substantially expanded during the Omayyad and the Abbasid eras and Muslims mixed with other nations that had different traditions and financial systems to what Muslims have had used to, a new approach of Shariah governance became eminent. Thus, the need to establish the concept of *hisbah* as an independent institution that has its own system, setting up the requirements, qualifications, obligations, power and authority of the *Muhtasib* was founded (Al Shiraazi, 1946: 13).

Hence, Islamic scholars supervising IFIs, should meet the requirements mentioned above for the *Muhtasib* of being righteous, honest, trustworthy, expert jurists who have mastered the required Shariah sciences to be able to interpret a Shariah ruling, judge a financial product, guide the IFI and ensure Shariah governance is maintained. This is not expected to be carried out by the management of an IFI or executives, because they would not have the required qualifications and knowledge, and there will be a clear conflict of interests. Thus, the SSB is an independent from any executive body in the IFI and has the authority to approve or disapprove proposed actions, products or services by financial institutions after they consider them for compliance with Shariah.

6.12 Conclusion

The objective of this chapter is to identify the fundamentals and main characteristics of the financial innovation theory from an Islamic perspective as an attempt to articulate this theory. The chapter discussed various elements within the Islamic philosophy of economic thought and principles outlining the Islamic school of financial innovation and its approach.

The theoretical framework for a theory of financial innovation from an Islamic perspective has been inspired by contributions from various theories, research studies and the three main Schumpeterian schools of innovation. This has been the basis for also outlining the Islamic school of innovation, its philosophy, theory and methodology.

Table 6.1 below provides a comparison between the three main Schumpeterian schools of innovation as described in the previous chapter (Chapter 5, section 5.10) verses their counterpart the school of innovation from an Islamic perspective that we have called it the hybrid school in this chapter, their perspectives and building-block ideas are summarised in Table 6.1 below, which is an extension to Table 5.2.

Table 6.1: A summary of the four schools of innovation, perspectives and building-block

	Corporate Capability School: Economic perspective	**Entrepreneurship School: Social perspective**	**Culture School: Cultural perspective**	**Islamic School: Socio-Economic perspective**
1. Nature of innovation	Institutionalized capability	Innovation as grassroots impetuses	Innovation as deep craft	Innovation as a religious grassroots
2. Inherent logic of innovation	Evaluate	Engage	Envision	Empower
3. Relationship among members	Instruction-based relationship	Identity-based relationship	Intergenerational relationship	Socially-based relationship
4. Focal concern	Affiliated institutions	Authentic voices	Affective identification	Affiliated society well-being
5. Apprehensions of time	Path dependencies	Improvisation	A deep sense of temporality	A deep sense of evolution and contemporarily

The concept of unity, the concept of trusteeship, the concept of free will and responsibility, the principle of moderation, the principle of economic efficiency and the principle of social justice, among others, form the building-blocks and foundations of financial innovation theory in the Islamic school of innovation. Given this holistic approach and world view of innovation theory in Islam, the Islamic finance and banking system would be very much welcome as an ethical approach. This theory promotes regulatory induced financial innovation rather than vice-versa and provides a theoretical framework that should be looked at and taken seriously.

Thus, the financial practices are structured around intrinsic checks and balances. This what makes the banking culture in Islamic finance, to some extent, self-regulating unlike the conventional system where the ethical framework has to be imposed and monitored by a regulator, such as the Financial Conduct Authority (FCA) in the UK and other regulatory authorities.

Regulation is intrinsic to Islamic finance, Islamic finance is derived from rules/regulations of Shariah, without Shariah there would be no Islamic finance. Whereas, in conventional finance, the rules are an external addition to financial practices and may be hugely variable, depending on economic circumstances, availability of resources, political ideology and many other factors. The next chapter (Chapter 7) sets out the theoretical lens of this research study, having reviewed and identified the relevant gaps in the literature. The structure of the discussion in this chapter focuses on the theory of innovation orientation as a framework for the theoretical lens of this research study, and the role of Shariah as a shared boundary object.

Chapter 7: Theoretical Lens for the Research

7.1 Introduction

The previous chapter (Chapter 6) aimed at articulating the distinctive features and characteristics on which a religious financial innovation theoretical framework could be developed. This framework would be the cornerstone for exploring the cycle and processes of financial innovation and engineering in IFIs.

The main characteristics of Islamic finance and IFIs have been discussed and highlighted in previous chapters (see section 2.7, Table 2.1 of Chapter 2). The current practices of IFIs in relation to financial innovation and engineering are diverse, as they are influenced by different approaches taken by each individual IFI, or specific influences from the country in which the IFI operates. It is then not unreasonable to assume that, given this diversity, these practices are not always based on well-established financial innovation and engineering processes.

As a result, the Shariah compliance and governance of such variables also differs and is often not appropriately structured. Shariah is intended to govern the activities and policies of IFIs in a similar way to the way it seeks to govern individuals and their actions. It puts emphasis on the importance of honesty, transparency, justice and fair dealing, documentation, accountability and ethics. This religious imperative to infuse Shariah into IFIs necessitates that IFIs have to follow a certain prescribed code of conduct for its operation. This code of conduct avoids *inter alia*: cheating, exploitation, misleading, injustice, harmful actions to the society etc. (DiVanna, et al., 2009 and Warde, 2010).

The literature review, see chapter 3, of extant research has clearly shown a gap in the academic literature of a theoretical framework for financial innovation and engineering, which underpins best possible ethical practices, from both an Islamic and conventional financial institutions perspective. The absence of clearly identified processes, founding principles, guidelines and Shariah informed governance of financial innovation in IFIs was also evident in the review of literature. The concept of innovation orientation has been discussed in the existing literature, however, the concept of religious orientation of innovation in general or financial innovation, in particular, is absent. Therefore, the main objective of this study is to address this issue and explore the role of religious orientation in the process of financial innovation. The research focusses on the processes of product development and financial innovation as influenced by the theories of Islamic finance and economic thought, and the dynamic adjustment within current practices in IFIs.

The research findings have been employed to develop a potential framework to infuse a religious orientation within IFI's financial innovation and engineering, which also fulfils Shariah requirements. This framework could provide managers with a reference for financial innovation and orientation in creating organisational strategies and design to implement and sustain long-term, continuous financial innovation that has a base in religious belief.

The objective of this chapter is to outline the theoretical lens of this research study. The structure of the discussion in this chapter is presented as follows. Firstly, it explores how Islamic finance emphasises the role of stakeholders and the context of religion and its relation to financial activities. Secondly, it discusses the theory of innovation orientation as a framework for the theoretical lens of this research study, where this theory is extended to include religious orientation towards financial innovation.

Thirdly, it discusses the boundary objects theory as a dynamic theoretical lens of the research and its relevance as a theoretical lens. The chapter, finally, concludes with combining the role of religion and innovation orientation in IFIs as the theoretical framework with the boundary objects theory in order to explore and explain financial innovation and engineering in the Islamic finance industry.

7.2 An Inclusive View of Financial Innovation and Engineering

Financial innovation and engineering in Islamic finance emphasises the role of all stakeholders and the accountability of the Islamic financial institution for the wider actors in the society. Innovation in Islamic finance and banking should be driven by concepts derived from religious rules. The benefit of the intended financial innovation and possible harm that this could result in for stakeholders in the process, is a key element of evaluation for this religious framework for innovation orientation.

The idea to take into account a stakeholder perspective becomes an alternative to shareholder value maximisation as the principal objective of the firm orientation towards innovation (Donaldson and Preston, 1995; Freeman, 1984; Friedman and Miles, 2002). This approach focuses on the claims of employees, customers, and community members in areas of corporate activity and the process of financial innovation. This element is strongly considered in the financial innovation process in Islamic finance.

Another aspect that is considered in this research is how to embed normative claims on the corporation as a responsible communal citizen. Thus, enforcing the corporation's accountability and responsibilities as a member of society, which has strong links with enforced religious rules (Matten and Moon, 2008; George et al., 2012; Foss et al., 2007). This becomes an alternative to the idea of unsustainable long-term consequences of choices that may be optimal for maximising short-term profitability (Kramer and Porter, 2006). This aspect, of considering the impact of the business activity on all stakeholders, is clearly emphasised in the economic thought of Islam. This consideration of the wider impact, aims at driving the activities of IFIs that prioritise stakeholder interests, the wider benefit of society, within IFIs' financial innovation and engineering.

A strong view in the financial innovation literature (e.g. Plosser, 2009; Poole, 2011; Duska 2009 and Jameson 2009) suggests that many financial innovations, as practiced currently, are the cause of financial fragility and instability as financial institutions aim to circumvent financial regulations through innovation. The question posed here is whether a religious-oriented theory of financial innovation, as practiced in the Islamic finance industry, could offer a solution. In offering a more ethically motivated approach to finance, it would provide the required financial stability and resilience due to its strict rules of adherence to prescribed religious frameworks for undertaking financial activities.

Substantial research studies have examined innovations, focusing on innovation typologies, the economics of research and development and innovation diffusion (Freeman, 1994; Miles and Snow, 1978; Van de Ven et al., 1999; Siguaw et al., 2006). This literature has provided a significant contribution to the innovation literature. These contributions, however, in some instances tend to be with a narrow focus, which ignores, for example, religious orientation towards innovation.

Innovation, in itself, is not necessarily the key to long-term business success and possible source of financial stability, as noted by Tushman (1997). Instead, a firm's long-term success may rely more on an overall firm-level innovation orientation that produces quality financial innovations, which consider the wider society in its scope and framework as this study suggests.

In accordance with the religious compliance principle, IFIs, ideally, should pursue financial innovation that complies with their religious belief, as a part of the corporate structure. The overarching values that underpin Islamic finance are largely dependent on the religious ban on usury and the equivalent ban on dealing in unethical investments. The ideal Islamic financial system is meant to provide an alternative approach to finance, including financial innovation and engineering, on the basis of risk and reward sharing rather than risk shifting as practiced in the traditional financial system (Visser, 2009: 25).

In a normative perspective, due to a strict adherence to religious guidance, financial innovation and engineering should be strictly tied to an underlying asset, rather than a lending/borrowing relationship, as practiced in the traditional financial system. The ideal situation is for the religious framework to be embedded in all processes and practices of an IFI, which provides a faith-based orientation towards financial innovation. The religious principles are meant to serve as a reference in every level of activities in IFIs.

7.3 Religious Orientation: A Shared Object in Coordinating Financial Innovation

Few studies within the large spectrum of the innovation literature have addressed the concept of innovation orientation. Some of these studies, according to Siguaw et al. (2006), have, recently, acknowledged innovation orientation as a construct in its own right. These studies, however, do not clearly define innovation orientation or provide a framework for understanding the construct, and they often conceptualise it as a term in the context of the marketing function rather than at the organisational system level (e.g., Moorman and Slotegraaf, 1999).

These are, in most cases, inconsistent and unclear definitions and operationalization of innovation orientation, as emphasised by Garcia and Calantone (2002). They have inhibited the integration of the innovation research and an understanding of the concept and have obscured the key role that on-going knowledge structures play in enabling continuous quality innovation in a firm.

7.3.1 Research in Innovation Orientation

Given the dearth of literature concerning innovation orientation as a concept, it is thought to be problematic. Manu (1992: 334) explains innovation orientation as encompassing ‘‘the total innovation programmes of companies and is strategic in nature because it provides direction in dealing with markets.’’ Manu and Sriram (1996: 81) proposed innovation orientation as a multicomponent construct, which consists of new product introduction, R&D expenditures, and order of market entry, to argue against ‘‘single variable categorisations of innovativeness, which do not fully capture the complexities of innovativeness.’’

Alternatively, Berthon, Hulbert, and Pitt (1999: 37) define innovation orientation in terms of technological superiority, which reflects firms that ‘‘devote their resources toward inventing and refining superior products.’’ Berthon et al.’s conceptualisation consists of both openness to innovation (Zaltman, Duncan, and Holbek, 1973) and a capacity to innovate (Burns and Stalker, 1977). This latter perspective of innovation orientation i.e. capacity to innovate, according to Siguaw et al., (2006), overlaps with Hurley and Hult’s (1998: 44) conceptualisation of innovativeness as ‘‘the notion of openness to new ideas as an aspect of a firm’s culture’’ and Hult, Hurley, and Knight’s (2004: 430) view of innovativeness ‘‘as the capacity to introduce . . . some new process, product, or idea in the organisation.’’ This is because when the organisation is open to new innovative ideas as part of its culture, it would make its resources available and build a compatible capacity in order to deliver new innovations.

Most definitions in the innovation orientation literature agree first, that innovation orientation is a learning philosophy (Siguaw et al., 2006). In this learning philosophy, organisations have common standards and beliefs about learning and knowledge, which pervade and guide all functional areas toward innovations that are based on orientation values. For example, Worren, Moore, and Cardona (2002) promote the idea of ‘‘common mission’’ and an innovation climate of new ideas. This necessitates cooperation between all functions of the organisations and wider stakeholders involved in the process of producing financial innovation. Hurley and Hult (1998) discuss the open-to new ideas corporate culture of innovation orientation in organisations. In accordance with this view, Atuahene-Gima and Ko’s (2001) concept requires an environment that allows employees to keep up with changing technologies and market requirements. These conceptualisations strongly suggest that a learning philosophy must be an inherent component of innovation orientation within an institutional context (Siguaw et al., 2006).

This learning philosophy may imply the importance of creativity and innovativeness that is based on orientation of the organisation (Amabile, 1997; Worren, Moore, and Cardona, 2002), the openness to innovation (e.g., Berthon, Hulbert, and Pitt, 1999; Zaltman, Duncan, and Holbek, 1973), and the positive attitude of its employees (Amabile, 1997; Atuahene-Gima and Ko, 2001).

Concepts presented in the literature in relation to innovation orientation also concur that an innovation orientation is strategic (Amabile, 1997; Manu, 1992; Worren, Moore, and Cardona, 2002). Innovation orientation is considered in general to be an intentional and calculated plan or strategic intent (Worren, Moore, and Cardona, 2002; Siguaw et al., 2006), that also provides direction toward an organisation-wide commitment to more and faster innovations.

As a strategic initiative, innovation orientation is broad in scope and is encompassing all functional areas of the organisation, rather than just a single functional area, such as R&D, product development or marketing (Amabile, 1997; Worren, Moore, and Cardona, 2002; Siguaw et al., 2006).

The final conceptual component of an innovation orientation, as presented in the literature, argues for a specific work force interaction, or trans-functional acclimation (as shown in Figure 7.1 below), which is arising from the learning philosophy of innovation orientation and strategic direction components that transmit across all functional areas of an organisation. The trans-functional acclimation of an organisation's innovation-orientation is conceptualised as a set of common beliefs and understandings that spread through a unifying devotion among participants (Amabile, 1997; Worren, Moore, and Cardona, 2002, Siguaw et al., 2006).

By applying the existing concept, a unifying direction of innovation orientation springs from transcendental values, enthusiasm, and devotion among employees (Amabile, 1997; Worren, Moore, and Cardona, 2002, Siguaw et al., 2006). Reflecting on the concept of innovation orientation presented in the literature, especially Siguaw et al's concept (2006), the idea of common understandings and beliefs pervading the innovation-oriented context become apparent.

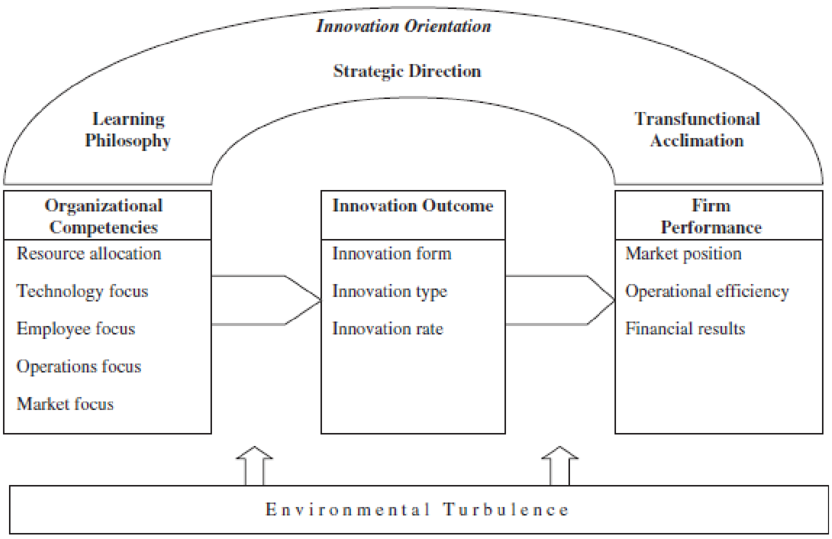
7.3.2 Sigauw's Framework of Innovation Orientation

The conceptualisation of innovation with a value-based orientation would indicate the strategy and culture as the drivers of innovation orientation in IFIs context. In this case, Siguaw et al.'s, (2006) concept is a useful reference to explore innovation orientation in IFIs. Siguaw, et al. (2006) has attempted to demarcate the domain of innovation orientation, with the objective of developing an operational definition, to create a framework for examining innovation orientation, and to offer a corresponding propositional inventory. This framework aimed to provide managers with a rationale for an innovation orientation and guidance in creating organisational strategies, design, and competencies to implement and sustain long-term, continuous innovation.

This is in accordance with Worren, Moore, and Cardona's (2002: 1127) conceptualisation of innovation orientation, which consists of entrepreneurial intent to innovate and succeed in the market, as well as the linkage between product modularity (the adjustment of a product and its modelling to fit with the organisation strategic intent) and organisational strategic intent for developing new products or entering new markets with existing products and innovation climate. In this case, new ideas are encouraged and employees share a common mission. In order to fulfil these objectives, Siguaw, et al. (2006) blend knowledge based-theory (King and Zeithaml, 2003), the resource-based view of the organisation (Barney, 1991), and the diverse innovation literature, to develop a new, overarching innovation orientation conceived as a systemic, organisational knowledge structure. Siguaw, et al. (2006) have developed the framework shown in Figure 7.1 below.

Figure 7.1: Model of Innovation Orientation: Drivers, Actions, and Outcomes

Source: Siguaw, Simpson and Enz (2006)



Based on the discussion above and the various components of innovation orientation as identified in the literature, Siguaw, et al. (2006) synthesised the broader conceptualisation of innovation orientation in Figure 7.1 above. This conceptualisation suggests to define an innovation orientation as, "a multidimensional knowledge structure composed of a learning philosophy, strategic direction, and trans-functional beliefs that, in turn, guide and direct all organisational strategies and actions, including those embedded in the formal and informal systems, behaviours, competencies, and processes of the firm to promote innovative thinking and facilitate successful development, evolution, and execution of innovations", Siguaw, et al. (2006).

Siguaw, et al. (2006) argue that a knowledge structure that is clear, specific, unique, pervasive and guides action toward innovation, may be the source of a sustainable competitive advantage for a firm under both resource-based and knowledge-based theories of the firm. A resource-based view implies that firms create a sustainable competitive advantage by possessing non-replicable, non-substitutable, rare, and valuable resources and capabilities (Barney, 1991). The resource-based view has been linked to innovation capabilities and provides a logical foundation for grounding the concept of innovation orientation (Hadjimanolis, 2000).

Knowledge is a driving force for the strategic direction of a firm. Thus, a new knowledge is requisite and the knowledge capital surging throughout the firm is continuously growing and transforming to identify the next position of strength required in order to keep the firm ahead of competitors and markets. Hence, a real source of competitive advantage is an innovation orientation, in particular its knowledge development and strategic intent that directs functional competencies, such as human resources, marketing and operations. Therefore, a knowledge-based theory also explains that knowledge development and deployment may be a truly sustainable competitive advantage (King and Zeithaml, 2003; Martin and Salomon, 2003).

Reflecting on Siguaw, et al.'s (2006) concept in the context of IFIs, innovation and product development processes are both knowledge-based and resource-based. The knowledge-based component is the religious rules and requirements that IFIs adhere to and gives them their religious orientation identity. The resource-based components, on the other hand, are those experts in interpreting the knowledge-based component and its enactment in the innovation processes within IFIs.

7.4 Using Sigauw's Framework to Conceptualise Religious Orientation as a Shared Object in Financial Innovation

The view of knowledge development and deployment is an inherent part of an innovation orientation. This is because, as Siguaw, et al., (2006) explain, innovation orientation necessitates understandings and beliefs about innovation, which means continuous and radical change and the adoption of new methods. This can be related and conceptually linked to the Islamic view of innovation.

Within the limited literature that addresses a religiously-oriented innovation concept, the research findings, (see Chapters 9 and 10), show that Shariah recognises and encourages beneficial innovation, when the achieved outcomes have resulted from following the means as guided by the Shariah rules. This research proposes the conceptual framework in Figure 7.2 for religious orientation towards financial innovation. The proposed framework was constructed by synthesising the religious values as articulated in Shariah combined with the conceptual framework developed by Siguaw, et al. (2006).

Figure 7.2: Model of Innovation with Religious Orientation: Drivers, Actions, and Outcomes

Source: Siguaw, Simpson and Enz (2006)

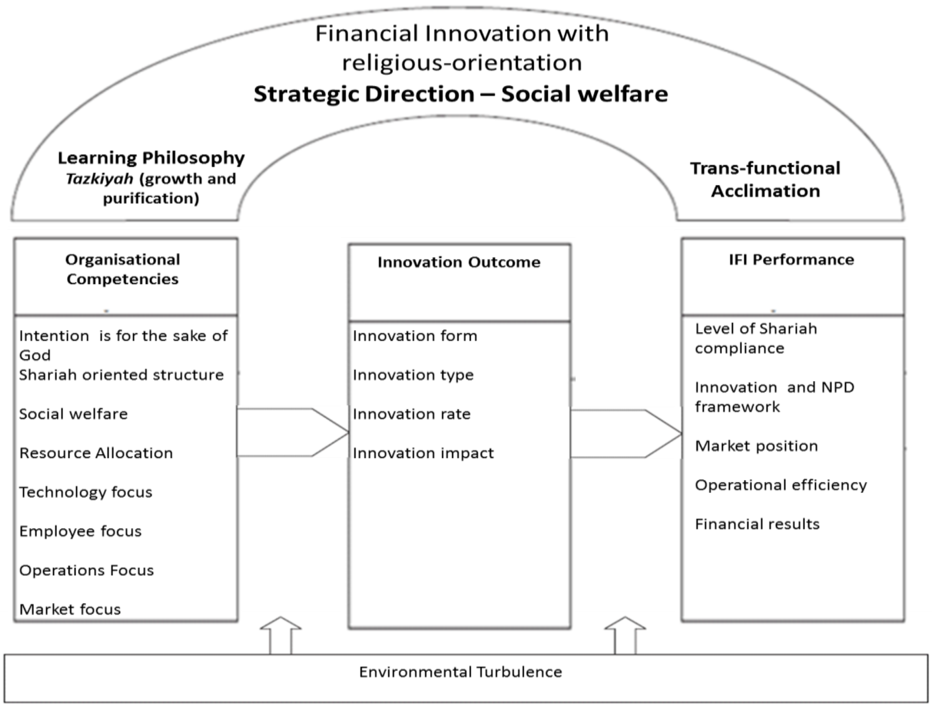


Figure 7.2 above extends Siguaw's, et al. (2006) theoretical framework of innovation orientation to analyse religious orientation towards financial innovation and engineering in IFIs. This approach is useful to explain the orientation of financial innovation and engineering in Islamic finance. The theoretical framework indicates that innovation orientation is a learning philosophy. In this learning philosophy, IFIs have common standards and beliefs about learning and knowledge, which pervade and guide all functional areas in IFIs towards innovations that are based on Shariah rules as an orientation. This necessitates cooperation between all functions of IFIs and wider stakeholders involved in the process of producing financial innovation with a religious orientation (Siguaw's, et al., 2006).

This learning philosophy emphasises the importance of suitable environment for innovativeness that is based on religious orientation (Amabile, 1997; Worren, Moore, and Cardona, 2002), the openness to innovation (e.g., Berthon, Hulbert, and Pitt, 1999; Zaltman, Duncan, and Holbek, 1973), and the positive attitude towards risk and reward sharing, as the founding concepts of Islamic finance, (Amabile, 1997; Atuahene-Gima and Ko, 2001). The strategic direction of any financial innovation in IFIs is social welfare that incorporates all actors in society. The concept of purity and growth implies that any financial innovation should go beyond just meeting the minimum Shariah compliance requirements. Instead, it should take into account and promote the core concept of religious orientation towards financial innovation as presented in the Islamic economic thought (see Chapter 6).

Innovation with religious orientation is also considered in general to be an intentional strategic intent of IFIs, that may be presented in their corporate structure, governance business plan and financial products to be introduced in the market (Worren, Moore, and Cardona, 2002; Siguaw et al., 2006). The innovation orientation in IFIs is driven by religious trans-functional acclimation embedded in the organisational structure of IFIs. This is seen as a framework of common understandings and beliefs, which create a unifying direction that springs from religious values that are led in IFIs by experts in Shariah and is arising from the learning philosophy (Amabile, 1997; Worren, Moore, and Cardona, 2002, Siguaw et al., 2006).

Innovation and financial engineering processes in IFIs create distinctive challenges for coordination of the Islamic finance industry, where such innovation is required to be compliant with Shariah rules. Religious orientation is seen as a 'Shared Object' in coordinating financial innovation in IFIs. Shariah plays the role of a shared object in orientating financial innovation by facilitating the emergent actions needed to deal with a dynamic and uncertain process of innovations that meet urgent financial needs (Scarbrough, et al., 2015).

Innovation requires collaboration among various groups possessing specialised expertise and knowledge of banking and Islamic finance, including the wider Shariah rules and requirements. This poses a challenge to IFIs of coordinating the required collaborative work across the boundaries of expert groups in the industry (Bruns, 2013; Carlile, 2004; Leonardi, 2011). This also requires the development of knowledge during the financial innovation process, which poses a further challenge of coordinating work of finding acceptable Shariah framework in the face of the under-specified goals (Bødker, 1998; Scarbrough, et al., 2015).

Typical forms of coordination (including coordinating the innovation process as a whole), involving the application of norms and standards as prescribed by Shariah and the modularisation of financial activities, are often needed in the face of these challenges (Adler, 2005). These challenges emphasised the need to re-think theoretical concerns about the link between the dynamic process, of financial innovation and engineering, and forms of coordination to organise such a process. Also, to re-think the theoretical framework of religious orientation towards financial innovation (Burns & Stalker, 1961; Van de Ven, 1999; Scarbrough, et al., 2015).

Therefore, 'the shared objects' becomes a boundary to address the challenge of coordinating collaborative activities across different functional or disciplinary domains. It is described as being trans-functional in the innovation orientation theoretical framework (see Figure 7.2 below). It is represented in the role of Islamic finance experts and Shariah scholars to express their knowledge and dependencies more effectively in the process of financial innovation (Barrett & Oborn, 2010; Carlile, 2002; Star & Griesemer, 1989).

7.5 The Boundary Object as a Theoretical Lens for the Research

Approximately half a century ago, researchers from the Tavistock Institute theorised coordination in workgroups as part of a “socio-technical system,” suggesting that material technologies and artefacts (an object of cultural or historical interest) played a central role in organising processes (Trist and Bamforth, 1951).

This concept, later, became a characterising feature of contemporary social studies of technology, with authors like Latour (1996, 2005) who argues that the stability of human social orders, beyond particular contexts of action, can only be explained when one allows for the work performed by objects, because symbols alone do not resolve this puzzle. Objects allow us to act at a distance and to make our interaction endure beyond the present. What makes human sociality distinctive is that practices are not merely constellations of inter-subjectivity; they are also constellations of “inter-objectivity” (Latour 1996: 234; Nicolini, et al., 2012).

Recent organisation and management literature has addressed the role of objects in cross-disciplinary collaboration using the concept of “boundary objects” (Nicolini, et al., 2012). This notion derives from the field of science studies, it focuses on the capacity of certain types of artefacts to support collaboration across diverse specialist groups by acting as “boundary objects” (Carlile 2002, 2004; Carlile and Rebentisch 2003; Levina 2005; Star and Griesemer, 1989; Nicolini, et al., 2012). Boundary objects are defined by their capacity to serve as bridges between intersecting social and cultural worlds. They create the conditions for collaboration while, by way of their interpretive flexibility, not requiring “deep sharing” (Nicolini, et al., 2012).

This idea works well when used to provide an insight on how, through an object such as religious rules that resides amid different social worlds and groups in the Islamic finance industry cooperate without consensus. Those religious rules are being tacked, during the financial innovation process back-and-forth between different forms and interpretations of the object, i.e. religious rules in the case of IFIs (Star 2010: 605). Knorr Cetina (1997, 1999) suggests that the capacity of objects to support collaboration flows from their being experienced as "epistemic things" (Rheinberger 1997: 28).

Objects become epistemic when they present what one does not yet know. Because of this open-ended nature, objects acquire a deep emotional holding power, such as the religious orientation of Shariah in the operations of IFIs. Thus, objects generate intimate attachment that creates social bonds regardless of regional locations. This could be because their complexity requires the joining of forces between different actors in the IFI, or because the drive and desire towards the same object constitutes the basis for mutual recognition or sense of belonging, or both (Knorr Cetina 1997; Nicolini, et al., 2012).

Therefore, the theory on boundary objects (Bartel and Garud 2003; Bechky 2003; Boland and Tenkasi 1995; Carlile 2002, 2004; Levina and Vaast 2005; Pawlowski and Robey 2004; Star and Griesemer 1989; Nicolini, et al., 2012) implies that objects become boundary objects when they function as translation and transformation devices at the disciplinary or professional boundaries between different work communities. Boundary objects are thus flexible, epistemic artefacts that "inhabit several intersecting social worlds and satisfy the information requirements of each of them" (Star and Griesemer 1989: 393). They are flexible because they can have different meanings, as manifested in the different interpretations of Shariah in general and Islamic finance in particular in the various communities, professional groups, departments, etc. Yet their structure is common to all these groups involved in the Islamic finance industry, so that they are recognisable to them and can serve as a means of translation for financial innovation and engineering with a religious orientation (Nicolini, et al., 2012).

Boundary objects suggest particular functions. First, they provide a shared language that allows idiosyncratic knowledge to be represented in a structure that is known on the other side of the boundary (Carlile 2002). This structure, which may consist of cooperation of various factors, such as knowledge, meanings, means, rules and organisational functions, is a religious orientation towards financial innovation and engineering in IFIs, and has to be sufficiently accommodating to allow for interpretive flexibility across the knowledge boundary. Therefore, it can be enacted and appropriated by the various working communities in the Islamic finance industry (Bartel and Garud 2003, Star and Griesemer 1989). Second, boundary objects provide concrete means to specify and learn about differences and dependencies across a boundary (Carlile 2002; Nicolini, et al., 2012).

The tangible nature of boundary objects makes it possible not only to uncover different meanings and perspectives of religious orientation of IFIs towards financial innovation and engineering. It also enables us to understand the concrete implications of these different religious interpretations and meanings, thus, enabling “perspective taking” (Boland and Tenkasi 1995).

Finally, boundary objects provide a form of “reification” around which, both the practices of the various actors in the Islamic finance industry and the co-constructions of an emergent, shared meaning of religious orientation towards financial innovation and engineering can be coordinated (Wenger 1998).

7.5.1 The role of Shariah as a boundary object in coordinating financial innovation

Shariah rules are believed to be flexible enough to address issues regardless of time or place. This requires collaborative work and coordination among Shariah scholars, bank managers, legal experts, and relevant subject matter experts, as practiced currently in the Islamic finance industry. The role of boundary objects in coordinating work on such collaborative tasks is very important. Such Shariah objects are sufficiently adaptable to local needs and constraints of the various parties employing them; at the same time it is adequately robust to preserve a common identity across sites (Star and Griesemer, 1989: 393).

The influencing role of Shariah as a boundary object in the financial innovation and engineering process in Islamic finance is manifested in its enactment in IFIs and interaction between different understandings, cultures, learning philosophies and skill sets as a shared object (Scarbrough, et al., 2015 and Carlile 2002). This suggests that Shariah as an object is not static and fixed. But, it is unfolding and dynamic, demonstrating ‘plasticity’ in addressing matters of finance (Barrett and

Oborn, 2010). However, such plasticity should not compromise, under any circumstances, a constant Shariah rule, such as the ban on interest payments in any financial activities.

Thus, the preferred term here to describe the role of Shariah as a boundary object is ‘plasticity’ rather than ‘flexibility’. Unlike the term flexibility, ‘plasticity’ refers to being flexible within a given structure and demarcated boundaries, those boundaries are the constant Shariah rules that shields this plastic structure from collapsing. Should this structure be abused and collapsed, as a result, this would render it as being flexible without any marked boundaries and exposed to criticism of not being truly based on Shariah requirements.

This is, therefore, the core difference between the financial innovation process in Islamic finance as a religiously oriented process, where Shariah is a shared object, and the traditional finance system. Thus, when the plasticity of religious orientation towards financial innovation collapses to be boundary-less, the Islamic finance innovation would not be any different from the conventional one, as the role of Shariah as a boundary object has diminished.

Financial innovation and engineering is a pervasive feature of the new product development (NPD) process, it has to be pursued within the boundary of various Shariah rules. Therefore, a focus on the role of Shariah as a boundary object, how these objects help to coordinate the wider collaborative tasks in the financial innovation process and relations between objects and their plasticity is a key factor of financial innovation and engineering in IFIs (Scarbrough, et al., 2015).

IFIs dedicate significant efforts and resources to ensure alignment between the shared objects employed in the financial innovation process. Using objects in this manner helps to provide a theoretical contribution that is not based on the coordinative capacities of particular objects alone, but on the approach such capacities are interrelated within an unfolding process of financial innovation and engineering (Van de Ven, 1999; Scarbrough, et al., 2015). This research study sheds new light on the important role played by Shariah as a boundary object at the process level of coordination, which emerges from a system of objects that drives, on the dynamic level, religious orientation towards financial innovation (Scarbrough, et al., 2015).

7.5.2 Shared objects in the financial innovation process in IFIs

The innovation process in IFIs is currently a two-fold approach, initiating original financial innovation that is based on Islamic finance principles, or reengineering an existing financial product in a Shariah compliant way. A number of objects are usually involved in the financial innovation process. 'Objects' are defined as 'something people act towards and with' (Scarbrough, et al., 2015).

Therefore, Shariah is a shared object where various groups involved in the financial innovation process act towards without any prior consensus. Those groups are the stakeholders in the financial innovation process, which would include Islamic scholars and the enactment of Shariah instruments to achieve the required outcome, professionals involved in the development process, such as bankers, operations, finance, credit, IT, marketing and sales functions within the IFI. Also, legal and tax experts and in some cases regulators, see Appendix 2 for a mapped process that depicts the interaction between various groups and actors involved in the financial innovation process.

Furthermore, the role of Shariah as a shared object could also extend in the inter-banking relations among IFIs regardless of geographical location or jurisdiction, when the financial innovation is transmitted in the Islamic finance industry and enacted by various players as being compliant with Shariah.

This research explores how the role of Shariah as a boundary object is constructed and employed by actors as a dynamic process that represents and enacts foci for their actions and activities (Scarbrough, et al., 2015). It focuses on 'shared objects' that are found to play an important part in both the coordination of the development process, across all involved actors in the innovation process in IFIs, and in linking the contributions from these actors to each other and to the wider financial innovation process (Bruns, 2013). These shared objects are the Shariah rules stipulated and shared among all actors in an IFI to deliver the desired financial innovation in a way that is compliant with Shariah, where Shariah acts as a boundary object in that process. These objects are shared as long as the Islamic finance industry's actors refer to them, have access to them, enact them, interpret them correctly and contribute to their creation and maintenance throughout the development process (Scarbrough, et al., 2015).

7.6 Combined Theoretical Lens for the Research

The religious beliefs, values, and understandings, as portrayed in Figure 7.2 above, are embedded in IFIs and the processes of introducing and developing new financial products. Thus, the desired outcome of an innovation orientation is a financial innovation that is religiously compliant, innovations do not define the orientation, but they are the outcomes. The religious orientation, however, defines the innovations in IFIs. An innovation orientation drives the IFI's strategy, learning, and functional interaction towards the objective of financial innovations that are religiously compliant (see Berthon, Hulbert, and Pitt, 1999; Homburg, Hoyer, and Fassnacht, 2002; Manu and Sriram, 1996; Siguaw et al., 2006).

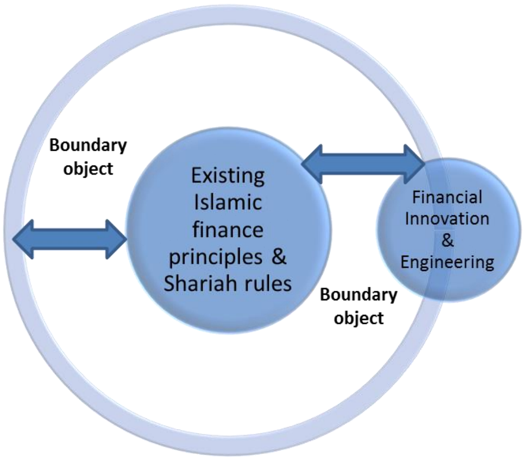
Also, by synthesising the theory of boundary object and the role of Shariah as a boundary object in the financial innovation and engineering process in IFIs as conceptualised by Scarbrough, et al., 2015, suggests that objects are shared within all functions in the IFI (see also, Barrett & Oborn, 2010; Carlile, 2002; Star & Griesemer, 1989; Star and Griesemer, 1989; Van de Ven, 1999; Bruns, 2013).

The role of Shariah as a boundary object, in Islamic finance, implies that Shariah as an object is adaptable enough to address emerging financial needs. It is dynamic in addressing new issues and financial challenges faced by IFIs in the Islamic finance industry. This plasticity however, is subject to prescribed constant Shariah rules that act as the control framework for such plasticity.

By borrowing the concept of 'innovation orientation' as explained by Siguaw et al., (2006) (see also Berthon, Hulbert, and Pitt, 1999; Homburg, Hoyer, and Fassnacht, 2002; Manu and Sriram, 1996; Siguaw et al., 2006) and conceptualised in Figure 7.2 and by employing the boundary object theory (Scarbrough, et al., 2015), the theoretical lens for this research is formed.

A conceptualisation of religious orientation of financial innovation integrating the three dimensions of the model, driver, action and outcome is formulated here to provide the theoretical framework. Whereas, the boundary object theory explains the dynamic element of enacting Shariah (religious orientation) as a shared boundary object in the financial innovation and engineering process, within that theoretical framework as conceptualised in Figure 7.3 below.

Figure 7.3: The role of Shariah as a boundary object in financial innovation



According to Siguaw et al. (2006) religious orientation in financial innovation is composed of beliefs and understandings that lead to innovative action; innovative actions are the outcomes, not the components, of such innovation orientation. The belief of an IFI to innovate could be driven by different factors, such as profitability, profit maximisation, maintaining advantage competitiveness, addressing risks or responding to regulatory changes or market movements.

Based on the framework of innovation orientation developed in Figure 7.2, Siguaw et al., (2006), and the boundary objects theory (Scarbrough, et al., 2015), the financial innovation in IFIs is driven by a mixture of IFI's religious orientation and strategic direction, the formal and informal systems, and the key actors' competencies. Shariah, however, plays the role of a boundary object in addressing those aspects as shown in Figure 7.3 above.

The inner circle in Figure 7.3 represents the constant Shariah rules in the development process of a new financial innovation. The outer circle, on the other hand, shows the plasticity of other Shariah rules in enabling new financial products. These plastic Shariah rules or instruments, i.e. the outer circle, would allow pushing the boundaries within the plasticity of Shariah rules to introduce a new financial innovation that falls within those Shariah boundaries. Therefore, a financial innovation could be acceptable from a Shariah perspective if it remains within the outer boundary and does not contradict the inner circle, i.e. constant Shariah rules. However, if this boundary object is stretched beyond its plasticity limit and is breached in order to enable a new financial innovation, this would render such financial innovation not acceptable from a Shariah perspective.

The learning philosophy, of the proposed framework in Figure 7.2, suggests that any work or activities carried out by IFIs should follow clear guidelines for the benefit of all stakeholders in the society, as shown in the findings of the survey and interviews (in Chapters 9 and 10). The concept of *Tazkiyah* (growth and purification), as shown in Figure 7.2 above, requires active participation in the material world, in order to build the earth and innovate to satisfy worldly needs in line with Shariah requirements and achieve social welfare (Gambling and Karim, 1991: 33). Based on the findings of the survey and interviews, this research proposes (in Appendix 2) a conceptual framework for examining the religious-based orientation for financial innovation and engineering in the Islamic finance industry.

Business history shows through numerous examples that financial innovation in products or in processes alone is not sufficient to create long-term survival or a competitive advantage. There, however, must be a collective set of understandings and beliefs, pervasively accepted throughout an IFI and likely to occur at all levels and functions, that facilitates continual processes to insure sustainable financial model (Siguaw et al., 2006).

A guiding framework that acts as a riverbed for the process of financial innovation and engineering would be required. The motive for innovating is driven by different reasons that look into the innovation outcome from a very narrow angle. This angle is the own self-interest. This is normal as that is the course of human behaviour. However, when the motive is consciously guided by a religious orientation and framework, the processing of financial innovation and its outcome would not be harmful to the society.

Therefore, linking this rationale to the research objectives would provide a greater insight in formulating a reliable conceptual framework for financial innovation with a religious orientation. This conceptual framework as theorised aims to marry financial innovation with Shariah guidelines as theorised in Islamic finance, which acts as a safeguard that enhances self-consciousness and self-accountability within human behaviour.

This approach is consistent with Hurley and Hult's (1998) and Moorman and Slotegraaf's (1999) conclusions, innovation orientation, and the organisational elements that it affects, is seen as an organisational system. The theoretical framework as conceptualised in this research study is also in accordance with Gharajedaghi and Ackoff (1984), who state, ''A system is a whole that cannot be divided into independent parts; the behaviour of each part and its effect on the whole depends on the behaviour of other parts.'' Removing components of the system for examination means the essential properties of the components are lost when separated from the whole system. Therefore, any conceptual framework for financial innovation with religious orientation should be built on a coherence of its all interconnected parts and components that support its philosophy.

When only pieces of the innovation system are examined, as is common within the literature, the system's overall structure is not revealed, nor is its functions and component interactions (Gharajedaghi and Ackoff, 1984). Under a systems approach, the financial innovation with religious orientation construct is dynamic in that IFI's innovation orientation, whatever that orientation or driver is. This system is constantly evolving as the key elements of the learning philosophy, strategic direction and trans-functional acclimation shift (Siguaw et al., 2006).

Pioneer economists such as Adam Smith acknowledge religion as a dynamic construct. Smith (1790: 158) articulated the role of religion as providing a safety net and an extra layer of consciousness and self-accountability when he said: 'It is in this manner that religion enforces a natural sense of duty and hence, it is that mankind are generally disposed to place great confidence in the probity of those who seem deeply impressed with religious sentiments. Such persons, they act under an additional tie, besides those which regulate the conduct of other men'.

Smith's (1790: 212 - 216), in reference to God and the role of religion, explores the concept of 'observing an all-powerful being', which is in accordance with the philosophy and theoretical foundations of Islamic economics and finance. He reflected on the relationship of human beings and God on the one hand, and their interaction with their fellow humans on the other hand. Both relationships are interrelated. He reflects on what shapes human motives in the practice of virtue, which is guided by the Law of the Infinite Power, God, and the rules of mankind. This means for a religious person, that the code of conduct governing their life is based on these two constructs. This is what this study explores, which also reflects on the practices of IFIs in relation to financial innovation and engineering as a religiously-oriented framework.

7.7 Conclusion

This chapter sets out the theoretical framework and dimension of this research study. Rigorous measures were taken prior to identifying the suitable theoretical framework for this research study, these measures included an extensive review of the existing literature, narrowing down the gaps in the literature to the selected subject of the study. It then, reviewed existing theories and conceptual frameworks that are linked to this study. Reflecting on the research objectives and questions stated in Chapter 1, the innovation orientation and the role of religion along with the boundary object theory is believed to be the most appropriate and suitable conceptualised theoretical framework for exploring and examining financial innovation and engineering in IFIs.

There is a narrow focus in the innovation literature by topic on innovation orientation. However, the issue of innovation or more preciously financial innovation with religious orientation has not been explored yet in the literature. The role of religion and its possible positive influence in relation to human interactions and potential reflection of that role on finance was reflected upon by Adam Smith (1790).

This theoretical framework enables this study to explore both the financial innovation and engineering processes as practiced in its two variants, either as an original financial innovation based on Islamic finance principles or as the reengineering of existing conventional financial innovation to meet Shariah requirements. In addition to this, the level of religious orientation and compliance of IFIs in relation to financial innovation of both types and the role of Shariah as a boundary object will also be explored. It also examines the institutional purposive action to create, maintain, disseminate financial innovation, the NPD cycle and relevant governance processes in IFIs. The adopted research philosophy and methodology to achieve this purpose and meet the research objective as theorised in this chapter are set out in details in the next chapter (Chapter 8).

Chapter 8: Research Methods

8.1 Introduction

The previous chapter (Chapter 7) discussed the theoretical lens of the research, which is based on combining 2 theories to establish the theoretical framework for this research. These theories are innovation orientation and boundary object. The main objective of this research (as detailed in Chapter 1, section 1.8) is to explore financial innovation from a religious orientation by exploring current practices of IFIs. It further examines what constitutes a religious orientation towards financial innovation and engineering from a Shariah perspective with the objective of developing a conceptual framework for religious orientation towards financial innovation. In order to do that, this chapter aims to outline the main aspects of the research design, research strategy, and empirical techniques applied, which are based on the philosophical assumptions underpinning this research study.

It also explores the processes of the field research conducted and interviews that took place in different countries, the process of negotiating an access, in order to ensure the research trustworthiness and the analysis undertaken for each type of collected primary data. Moreover, it explains the efforts made in order to ensure and maintain trustworthiness and ethical considerations. This enables the reader to build trust in the rigour of the research processes, findings and the conceptual framework of the research.

The research methodology that is employed is an interpretivist epistemology. The research is qualitative in nature and the research strategy is exploratory, descriptive and explanatory. The research adopts sequential mixed-methods approach of quantitative and qualitative methods. This mixed-methods approach involves many forms of data collection: questionnaire survey, semi-structured interviews, observation and documentary analysis.

The following sections will discuss, in addition to the above, the research strategy, giving justification for the employment of the selected data collection tools and analysis of the collected data, as being the most appropriate tools for the data collection. Also, it will discuss the reliability and validity of the data collected using the selected tools and how ethical issues are managed throughout the data collection process.

8.2 Research Philosophy

A paradigm refers to a set of premises, these are (1) ontology (what kind of being is human being? what is the nature of reality?), (2) epistemology (what is the relationship between the inquirer and the known or unknown?), and (3) methodology (how do we know the world, or gain knowledge of it?), (Denzin and Lincoln, 2003 and Guba, 1990: 17). The epistemological orientation of this research is founded in interpretivism, which refers to the understanding of social world or phenomena by examining the interpretation of the world by its participants. Interpretivism focuses on the “understanding” of human behaviour (Bryan, 2012; Ahrens & Chapman, 2006; Cresswell and Plano Clark, 2007).

Having examined different ontological positions for this research study, constructionism emerges as a best fit ontological position in understanding the social actors of the phenomena on both individual and collective levels (Lee and Lings, 2008). This understanding of both levels would explain the social construction of how religion (Shariah) is interpreted and enacted in the processes of financial innovation and engineering. Constructionism sees the social properties as outcomes of the interaction between individuals instead of phenomena that are separate from those involved in its construction (Bryman, 2012).

Exploring the phenomenon of religiously-oriented financial innovation and engineering would require complex qualitative measurements that might not be simply quantified and it would be actively constructed by actors who perform it. Thus, an in-depth study, by employing an interpretive qualitative approach in order to understand and explore the phenomenon from the perspective of the participants, would be most appropriate (Merriam, 1998). This is because, studying the phenomenon in its natural settings where human behaviours occur, from the perspective of its actors who construct it, offers a deeper and more contextual and comprehensive insight, in contrast to just testing the phenomenon through measurable variables and then generalise it. Qualitative research focuses on participant's [or groups] perceptions, experiences, and the way they make sense of their lives. It attempts to understand multiple realities of how things occur, the process, and also the product or outcome (Lee and Lings, 2008).

8.3 Research Design and Field Work

The research methodology adopted is qualitative in nature that involves the use of mixed methods to collect the primary data. The research strategy is exploratory, descriptive and explanatory. The research adopted a mixed-methods approach of quantitative and qualitative methods. This research study involves many forms of data collection: a questionnaire survey (quantitative method of data collection), semi-structured interviews (qualitative method of data collection), documentary analysis (published data about financial products, Islamic legal opinions issued about its compliance, independent reports and studies) and direct observation of the Islamic finance industry as practised. The analysis of the collected data is qualitative. Reiter (2011) suggests that multiple data sources are preferable, rather than using only one source, in order to capture the contextual complexity of the research problem.

8.3.1 Stages of conducting the fieldwork and data analysis

a. Developing the questionnaire survey and semi-structured interviews.

b. Conducting a pilot testing for the questionnaire.

c. Obtaining the primary data from the questionnaire respondents and interviewees.

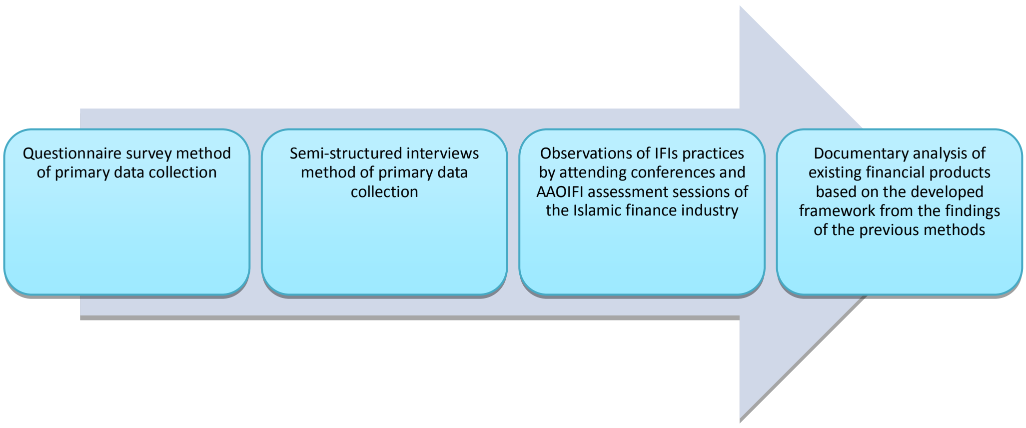
d. Analysis of the primary data collected in (c) above. In this stage data was screened to avoid any mistakes and errors.

8.3.2 Mixed Methods

The mixed-methods approach, adopted by this research study, uses approaches for collecting and analysing both quantitative and qualitative data at different stages of the research process in a single research study. The objective of mixed-methods is gaining a better understanding of the research problem (Tashakkori and Teddlie, 2003).

The rationale, for using mixed-methods of data within a single study, is based on the view that neither quantitative nor qualitative methods are sufficient individually to capture the trends and details of the research problem regarding financial innovation and engineering in IFIs. When quantitative and qualitative methods are combined, they complement each other and provide a more robust analysis, capitalising on the strengths of each, as shown in Figure 8.1 below (Ivankova *et al*, 2006; Bryman 2012; Ahrens & Chapman, 2006; Cresswell and Plano Clark, 2007).

Figure 8.1: Explanatory sequential design



There are about forty mixed-methods research designs reported in the literature, however, one of the most popular designs is the mixed-methods sequential explanatory design (Tashakkori and Teddlie, 2003). This mixed-methods design, which was adopted for this research study, consists of two phases, quantitative followed by qualitative in which the research collected and analysed the quantitative data, then, the qualitative data was collected and analysed to help explain and elaborate on the phenomenon being studied. The second phase was built on the first phase in sequence (Ivankova *et al*, 2006; Ahrens & Chapman, 2006; Cresswell and Plano Clark, 2007).

The advantages of this mixed-methods design include opportunities for the exploration of the quantitative results in more details. This design can be especially useful when unexpected results arise from a quantitative method i.e. the questionnaire survey. The disadvantages of this design are the lengthy time and feasibility of resources to collect and analyse both types of data (Ivankova *et al*, 2006). Having said that, the chosen research design is a sequential mixed-methods approach as articulated below.

8.3.3 Rationale for the chosen research design

Having a clear plan is one of the key determinants of the quality of the research outcome (Moore, 2000:1). The chosen research design was kept in mind while carrying out the research project. The elements that were given due consideration in the design would include: the purpose of the study, the relevant theory to the topic being researched, the research questions to be addressed, the methods or best techniques for collecting the required data and the sampling strategy that was adopted (Robson, 2002: 80).

The research design that has been chosen for this study can be divided into various categories depending on the objective of the categorisation criteria, as the research design should be prepared depending on the specific nature of the study. The type of research design selected was determined by the posed research questions and objectives (see Chapter 1, section 1.8 and 1.9); it will be useful to briefly mention the different types of research, which were considered based on the fundamental objective or purpose of this research study. Research has been classified as exploratory, descriptive, explanatory, diagnostic or experimental (Rao, 1994: 96). This research study could be classified as exploratory, explanatory and descriptive. Social research designs are divided generally into two types, namely fixed and flexible designs (Robson, 2002: 164). In order to decide which type is more appropriate for this research, each of these designs was examined in the early stages of the research to determine the best fit for purpose design.

Flexible designs, in contrast to fixed designs, are normally used in qualitative research where the study is structured within the assumptions and characteristics of the flexible approach to research (Robson, 2002: 165; Ahrens & Chapman, 2006). As this research involves both quantitative method, represented by the questionnaire survey, and qualitative method, represented by the semi-structured interviews, a mixture of both designs was more appropriate than concentrating on either one of them and hence, the chosen research design for this research study was mixed research design. This is because of; it is the type of research design that combines both quantitative and qualitative data collection in different phases of the research process (Cresswell and Plano Clark, 2007: 5).

8.4 Research Methods

The selected method for this study was greatly influenced by the research design and objectives. As humans, we may also have certain biases and some of us may prefer qualitative over quantitative approaches or vice versa. By and large, a research method that combines two or more research methods provides better interpretation. As the data missed by one single method could be obtained by the other and hence, an enhanced result may emerge from the analysis (Bryman 2012; Ahrens & Chapman, 2006; Cresswell and Plano Clark, 2007). The complexity of this research problem seeks answers that are not mere simple numbers in a quantitative sense or words in a qualitative sense. A combination of both forms of data has given us the most comprehensive analysis of the phenomenon in question regarding financial innovation and engineering practices in the Islamic finance industry (Cresswell and Plano Clark, 2007: 13).

Thus, it was concluded that mixed methods research is the most suitable approach for this research study and the two most appropriate methods are questionnaires and semi-structured interviews followed by a documentary analysis, which will be based on the developed framework from the findings of the first two methods. This triangulation of the sources of data would provide robustness, credibility and reliability of the research findings.

8.4.1 Questionnaires Survey

Surveys are widely used in academic research, with the objective of explaining a social phenomenon or finding out what is happening in our society (Robson, 2002: 228; see also Bryman 2012; Ahrens & Chapman, 2006; Cresswell and Plano Clark, 2007). Therefore, getting the assessment right is very important, as the reliability of resulting information depends on the suitability of the tools used and how well these methods are applied. Survey technique is the collection of primary data about subjects and involves the selection of a representative sample of the population under study, through the use of a questionnaire (Hersi, 2009: 148).

The aim of using questionnaire survey is to collect relevant data from the IFIs, data such attitudinal, motivational, behavioural and perceptive aspects of the financial innovation and engineering processes. It involves collecting primary data about experiences, views, the attitudes about the financial innovation in the product development process within Islamic finance. It employed a representative sample of the population of the Islamic finance industry (Robson, 2002: 269; Cresswell and Plano Clark, 2007).

Therefore, Islamic finance practitioners were categorised according to their role and speciality. The first category was Islamic scholars issuing legal opinions about financial products being developed, the second was Islamic finance practitioners and then, a sample was randomly selected from each category to make it as representative as possible. Questionnaires have many advantages over other methods of data collection. According to Robson (2002: 269) the advantages of using questionnaires include:

a) They provide a relatively simple and straightforward approach to the study of attitudes, values, beliefs and motives. This is important for this study as the research involves collecting data on all those described variables.
b) They may be adapted to collect generalizable information from almost any human population.
c) A great amount of data standardisation is achieved. However, questionnaires also have a number of disadvantages, which should be taken into account in deciding the most suitable

data collection tool and avoiding the risks involved in that particular method of investigation (Robson, 2002: 269; Bryman 2012; Ahrens & Chapman, 2006).

Below are disadvantages of the questionnaire technique (Robson, 2002: 271-75) that this research had to manage carefully:

a) The validity of the responses may be compromised by the favourable image a respondent may wish to express (response or bias error).
b) Sometimes respondents may shy away from providing crucial information due to the sensitivity attached to the topic.
c) Inability to answer the question could also affect the response rate and reliability.
d) The interviewer can introduce bias, influencing the responses given through facial expressions, body language, verbal intonations (interviewer error or bias), in the cases of face to face questionnaire.
e) The response rate could have a dramatic detrimental effect on the results.
f) The chances of following up are greatly reduced if delivered by post.

Best endeavours were made to mitigate the above disadvantages by ensuring that the sample covers most, if not all, IFIs and is a reliable representative of the population. It is worth noting that as the Islamic finance industry is relatively young and the number of stand-alone Islamic banks, as the target population, is very small, the population is estimated to be around 150 Islamic banks. This excludes Islamic windows, Islamic fund management firms, and any other small joint ventures or what is not classed as an Islamic commercial, retail, corporate, multilateral or investment bank or *takaful* operators.

Therefore, it is believed that the target population of around 150 Islamic banks to which the questionnaire was distributed covers, if not all, most of the Islamic banking and finance industry. Thus, this is believed to be a representative sample. This also addressed number (a) to (c) of the disadvantages listed above (Bryman 2012; Ahrens & Chapman, 2006; Cresswell and Plano Clark, 2007). In order to address (d) above, the questionnaire was not distributed face to face, instead it was distributed by email providing a link to the questionnaire survey page on the website. Disadvantages (e) and (f) above were managed by ensuring the response rate is adequate and employing semi-structured interviews for a follow up and collecting more in-depth data.

8.4.1.1 Objective of the questionnaire

As mentioned above, the questionnaire was developed with the objective of finding relevant and satisfactory answers to the two main research questions and their sub-questions. The questionnaire was distributed to a selected sample of the target population. The specific objective of this data collection tool is summarised as follows:

- To understand the nature of current financial innovation and product development practices in Islamic banks.

- To assess the current products available in the market by Islamic banks in terms of their compliance with the developed ethical Shariah framework.

- To assess the gap between the Islamic financial principles and its applications in the current practices of financial innovation and engineering.

The questionnaire was based on an in-depth study of existing product development processes for an Islamic bank in the UK, documents collected for the documentary analysis method and was also guided by the work of Ahmed (2011). It was developed to obtain the data needed to measure the constructs contained in the suggested assumptions above, and how the cycle of Islamic financial innovation and engineering can be conceptualised and assessed. The questionnaire consisted of 6 sections. Screening questions were asked to check that respondents had worked in a decision making role in an Islamic financial institution for more than six months as a senior manager (Ryan, 2009). This is to ensure that the respondent has passed the probationary period and is aware of relevant processes implemented in their financial institution, which would enhance the accuracy of their responses. The questionnaire was distributed by email to relevant respondents, covering around 150 IFIs in the UK, Gulf Cooperation Council Countries (GCC), Middle East and Southeast Asia.

8.4.1.2 Structure and design of the questionnaire

After finalising the questionnaire and submitting it to the Research Ethics Committee for review and approval, a pilot testing of the questionnaire was conducted. The questionnaire was distributed to 15 people of the target sample to complete the questionnaire and provide any feedback regarding the questions, their structure, clarity, design and ease of completing the questionnaire. After completing the questionnaire, respondents of the pilot testing were contacted for their feedback. The feedback was positive, some minor improvements were suggested, related to 2 mandatory questions that might not be applicable in all cases and therefore should be categorised as non-mandatory to enable respondents to proceed with the rest of the questionnaire. This suggested alteration was made to the questionnaire.

Following the satisfactory result of the pilot testing and the design of the questionnaire survey in an online questionnaire template provided by a trusted web survey service, the questionnaire was distributed to the target sample. The online option was chosen for the design and distribution of the survey because it is easier and more convenient for the respondents to complete as it will be submitted automatically on completion. This will save respondents the inconvenience of either sending the completed questionnaire by post or having to complete it, save it on their computer, then, email it to the researcher. Instead, all they needed to do is to click on the web link provided, which took them directly to the questionnaire.

Thus, such techniques in collecting data via questionnaire would increase the response rate. Saunders et al., (2003: 159) explain, in that context, that their examination of response rates to recent business research surveys reveals a rate as low as 10% and in some good cases up to 20%. An implication being that respondents' questionnaire fatigue was a contributory factor.

The target sample consists of around 150 potential respondents of IFIs who are working in Islamic banks in Shariah compliance or product development and structuring roles. The aim of the questionnaire was to cover at least 30 Islamic banks and achieve at least 20-25% of the targeted sample of 150 IFIs (this number almost covers all Islamic banks in the Islamic finance industry, as the number of Islamic banks is still low due to the relatively young age of the industry, therefore the sample covers all Islamic banks) within a time framework of around 6 months. The achieved response rate was higher than the set minimum target; it was 41% with a total of 61 respondents, (see analysis of the questionnaire survey in Chapter 9).

8.4.1.4 Sections of the questionnaire

The questionnaire starts with a cover letter providing an overview of the research and explanation of its objectives and to whom it is directed. Then, it provides clear instructions on how respondents can complete the questionnaire and how the collected data is treated, which will be processed according to the highest academic standard. This was followed then by the questionnaire's sections from A-F. The explanation of how these sections relate to the research questions, and the primary data intended to be collected, is provided below, where each section of the questionnaire is discussed separately.

A. General information

This Section (questions 1-6), in addition to questions 7 and 8 from Section B, is expected to answer the research sub-question 1.1 of the first main research question. It aims to obtain general information about the respondents and their institutions. It also tries to establish the Shariah compliance framework and governance, upon which the financial institution operates.

B. Financial innovation

The respondents and their financial institutions' views, about how they perceive financial innovation from an Islamic perspective, are collected in this Section (questions 7-13) and questions 9-13 are expected to provide an answer for sub-question 1.2 of the first main research questions. It attempts to explore their view about financial innovation in general: whether it is a good thing or not, if financial innovation is encouraged by Shariah and if Shariah offers the suitable instruments for financial innovation.

This Section further focuses on their attitudes towards financial innovation, how innovation is generated and challenges that they may face. It is important to point out that there is, may be, a potential bias regarding innovation in general as being disliked under Shariah. This view is specific to a small group of Islamic scholars, as was explained in Chapter 6 innovation from an Islamic perspective, who usually do not go beyond the literal meaning of the text in the Qur`an and the *Sunnah*. This issue goes back to many centuries of theological debate among Islamic scholars, which some respondents may not have a clear and an in-depth knowledge of. Thus, this would potentially influence their responses to this section of the questionnaire.

C. Product development strategy and planning

Data collected in this section (questions 14-22) is expected to answer sub-question 2.1 of the second main research questions. It is intended to provide a clear idea of the Islamic financial institution's view about new product development and the medium to long term planning of the institution's strategic position in the market. This would reveal the institution's aspirations about its position in the market and being competitive in its financial engineering approach and strategy. It also tries to explore whether the institution has a dedicated unit or function for generating new financial innovation and products and the steps it undertakes in conducting this. It also aims to find out about the role of Shariah in this planning and if the Shariah requirements and objectives are taken into account in this process.

D. Process and structure

This Section of the questionnaire, (questions 23-26) is designed to answer sub-question 2.2 of the second main research questions. The aim of this section was to describe the governance of the product development cycle and if the IFI has a clear objective about its future plan in engineering and developing new financial products. It explores whether the product development process exists or if it is done on an ad hoc basis. Then the section attempts to describe the current practices in the Islamic finance industry, with regards to having clear approved processes and documentation that set out clearly the requirements and steps for developing new financial products in accordance with Shariah requirements.

E. Design

Having discussed the intended data to be collected in the previous four sections, it is time now to dive into the technical part of the process to explore and describe the current practices of financial innovation and engineering in IFIs across the industry. This section (questions 27-30) aims to collect data from the sample of respondents to answer sub-question 2.3 of the second main research questions. It is designed to collect data about variables concerned with financial innovation that are considered by Islamic financial institutions and also, the steps of the product development process. An essential part of these questions is to explore how Shariah fits in this process and to what level it is taken into account by different institutions. Also, to ascertain what the criteria, used by IFIs, are in order to decide on the most appropriate structure for the Shariah compliant financial innovation or product.

F. New products

The final section (questions 31 & 32) was expected to also answer sub-question 2.3 of the second main research questions. The reason for not combining this section with section E is because it felt that the two questions in section F are better kept separate as this would be more appropriate for the design of the questionnaire. Section F focuses on the Shariah governance and structure in approving any new financial products as IFIs use different approaches subjects to the Shariah governance in their country of incorporation. It provides an idea of how the new financial product is assessed as being suitable and what type of post implementation reviews are undertaken by the IFI. It also provides a space for any comments or extra data that respondents can provide if they wish to do so.

8.4.1.3 The relationship between the questionnaire and research questions

Figures 8.2 and 8.3, below, depict the relationship that the research questions and their sub-questions (see Chapter 1, section 1. 9) have with the survey questionnaire. This represents clear evidence of the relevance of the survey questions to their respective research questions.

Figure 8.2: How the questionnaire sections relate to the first main research question and sub-questions

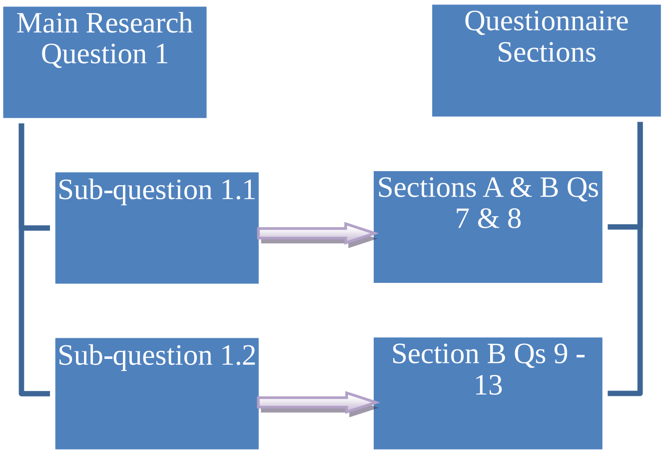
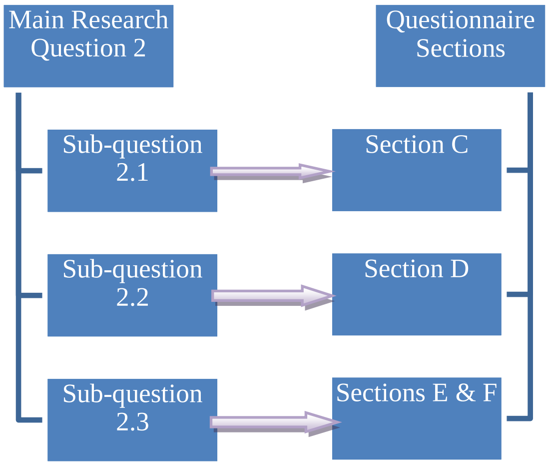


Figure 8.3: How the questionnaire sections relate to the second main research question and sub-questions



As the above Figures show, there are two main research questions and each question has sub-questions (from top to bottom). For instance, question one has two sub-questions (1.1 and 1.2) and research question two has three sub-questions (2.1, 2.2 and 2.3). The diagram also explains the relationship between the research questions and the questionnaire sections represented by the alphabets on the right (A - F).

As shown in the Figures, the two sub-questions of the first main research question (1.1 and 1.2) relate to (A and B) of the questionnaire, while the three sub-questions of the second main research question (2.1, 2.2 and 2.3) relate to (C, D, E and F) of the questionnaire's sections. Further explanation of the relationship between the research questions and research questionnaire, by specifying which parts of the questionnaire are devised to answer the various research questions, are provided below.

8.4.1.4 Analysis of the questionnaire survey

The analysis of the primary data collected through the questionnaire survey is exploratory and provides descriptive statistics of percentages and frequencies. It aims to produce simple summaries about the sample and about the observations that have been made. Such summaries were presented as either or both summary statistics or visual, i.e. simple to understand graphs (see Chapter 9). Summary statistics are used to summarise a set of observations, in order to communicate the largest amount in as simple a manner as possible. These summaries form the basis of the initial description of the data, as part of a more extensive analysis that was complemented by the analysis of the semi-structured interviews and its findings (Bryman 2012; Ahrens & Chapman, 2006; Cresswell and Plano Clark, 2007).

This distinction is desirable as these two types of analysis i.e. quantitative and qualitative are quite different and employ totally different means in achieving their respective objectives. Quantitative analysis for instance, depends heavily on statistical significance, to the extent that some suggest the two terms are actually synonymous (Robson, 2007: 18), while qualitative analysis mainly uses simple human judgment in interpreting and organising the collected data. Hence, (Bryman 2012; Ahrens & Chapman, 2006; Cresswell and Plano Clark, 2007) qualitative analysis is more appropriate and it serves as a better tool in analysing the data collected by the questionnaire to describe the current practice and structure of financial innovation and engineering for the purposes of this research. (Moore, 2000: 133).

8.4.2 Semi-structured interviews

This method normally involves asking questions and receiving answers from respondents. Others have defined it as “a conversation for a purpose” (Robson, 2002: 271). A commonly used typology distinguishes between structured, semi-structured and unstructured interviews. These different types can, to some extent, be based according to the depth of response required (Robson, 2002: 282; Bryman 2012; Ahrens & Chapman, 2006; Cresswell and Plano Clark, 2007).

The two extremes are the highly structured interview and the unstructured interview, where the respondent is not limited at all and can speak freely about the topic with much less restriction and intervention from the interviewer. Between these two extremes comes the semi-structured interview which has certain restrictions and a degree of flexibility as follows:

- Questions are predetermined, but the order can be changed to suit the respondent.
- The wording of questions can be amended and more explanation provided if required.
- Questions that are not suitable to be asked to a particular interviewee can be omitted or additional ones added (Robson, 2002: 260; Ahrens & Chapman, 2006; Cresswell and Plano Clark, 2007).

Generally speaking, as Robson (2002: 261) states, this method, i.e. semi-structured interviews, which was chosen for this research study, could be used in both qualitative and quantitative research and is useful when the interviewer wants to collect information about the background and experience of the interviewees (see also, Bryman 2012; Ahrens & Chapman, 2006; Cresswell and Plano Clark, 2007). However, according to Robson (2002: 261) semi-structured and unstructured interviews are widely used in flexible qualitative designs. Also, according to him some of the advantages semi-structured interviews have over other interview techniques include:

a. Enabling the interviewer to probe further into a subject to extract more details from the interviewee.
b. Giving the interviewee the chance to explain the subject matter in-depth.
c. Allowing the interviewer to expand on the subject matter based on the expertise and the wisdom showed by the interviewee in answering the questions.
d. Validity of the data as the interviewer has the opportunity to check accuracy with the interviewee before departing.

For the above reasons we have chosen semi-structured interviews as a preferred method. However, all interviews including the semi-structured one have some common disadvantages, such as:

a. They are generally time-consuming, especially if there are too many long questions.
b. They also require careful preparation, such as obtaining permission, arriving at the interview venue and confirming other arrangements, which could prove to be a hard task.
c. The interviewer may influence the interviewee's response, which may compromise the reliability of the information collected (Robson, 2002: 262).

We have endeavoured to reduce the effect that such disadvantages may have on this research study by making sure that the conduct of all arranged interviews avoid these disadvantages.

8.4.2.1 Objectives of the semi-structured interview

The semi-structured interview method was used to answer the research questions, in order to explore these questions more in-depth. This is also in addition to seeking further understanding, which can be only achieved by this method following the analysis of the questionnaire responses. This involved interviewing UK based and non-UK based Islamic finance scholars, experts and practitioners, details of the interviews and the interviewees profile are provided in (Chapter 10).

20 interviews were conducted with key decision making Islamic scholars and Islamic finance experts in the Islamic finance industry. As the focus of this research is on exploring religious orientation towards financial innovation in IFIs, there was not a need to interview professional in the conventional banking sector. The traditional theory and practices of the conventional banking sector in relation to financial innovation was covered in Chapters 3 and 5.

The interviews were conducted face to face and took place in different countries (UK, Bahrain, UAE, Jordan and Pakistan). The interviews were all voice recorded. The two groups of this population are different in terms of specialisation, expertise, knowledge and role in the decision making of what constitute a financial innovation in the financial product development and engineering cycle of

Islamic banks. The interview method has also helped filling gaps and resolve ambiguities discovered in responses to the questionnaire. Below is a summary of the objectives of interviewing each group.

What the research needs from the Islamic banking practitioners and experts is:

- To learn more about the financial products they develop and offer in the market.
- To assess their knowledge about the Islamic ethics and principles that should be followed in the development of financial products.
- To find out if they follow a standardised framework for financial innovation and product development that fulfils the requirements of the Islamic ethical code and Shariah objectives and principles.

The responses to the above questions are critical to this research study and the Islamic banks' practitioners are better positioned to give the right answers to these questions. The second group that was interviewed was the Islamic scholars who issue Shariah legal opinions about the compliance of financial innovation and products being developed under their supervision. The desired outcome from this interview was as follows:

- To learn about what they think about financial innovation and product development as practiced in Islamic finance and banking.
- To establish what the Shariah requirements are for a standardised theoretical framework for financial innovation and engineering, that is based on the Islamic philosophy and requirements.
- To find out from them what constitutes a religious orientation towards financial innovation and engineering in Islamic finance, ensuring that all developed products are in line with the Shariah ethical framework and what the main characteristics of this standardised framework are for financial innovation.

- To know their views on whether an Islamic economic and financial system exists and learn more about the philosophy of Islamic economics as the framework for financial innovation.

Drawing on the knowledge and expertise of Islamic scholars in this field is of paramount importance in gathering reliable data for this study. Hence, it was decided to interview at least ten Islamic scholars who also could be academic at the same time.

8.4.2.2 The relationship between the research questions, the questionnaire and interviews

Figure 8.4 and 8.5, below, depict the relationship that the research questions and their sub-questions have with the survey questionnaire and interview questions. This represents clear evidence of the relevance of the semi-structured interview questions to the survey questions and to their respective research questions (see Chapter 1, section 1.9).

Figure 8.4: How the interview questions relate to the questionnaire sections and to the first main research question and sub-questions

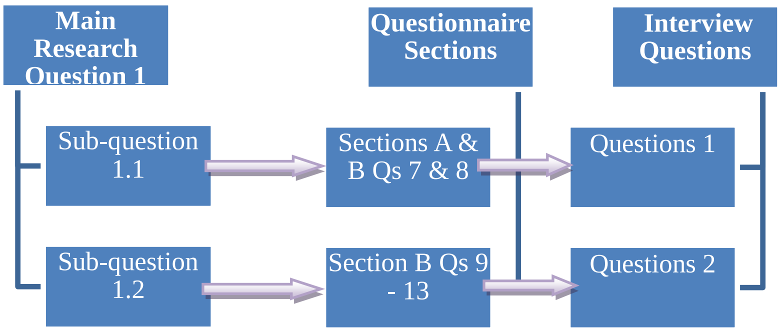
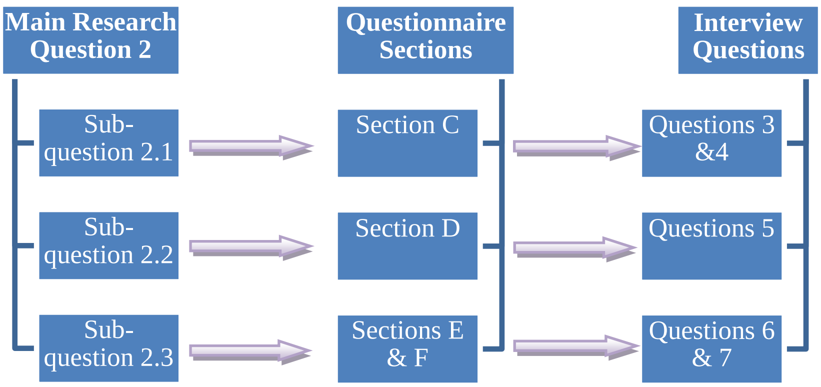


Figure 8.5: How the interview questions relate to the questionnaire sections and to the second main research question and sub-questions



As part of the empirical study of the thesis, the semi-structured interviews were carried out on two groups, namely Islamic finance experts involved in structuring and developing Shariah compliant financial products and key decision making Islamic scholars in the industry that their decision influences the financial innovation and engineering process that results in the offering of Shariah compliant financial products.

Individuals of the above mentioned two groups were objectively selected based on their expertise and exposure to structuring and developing Shariah compliant financial products currently on offer in the Islamic finance market. The first group was selected as they have first-hand experience of the mechanics and financial engineering process of those products. Similarly, the Islamic scholars were selected as they would have an academic and practical interest in the subject and they would be key contributors to the interview objectives.

This is due to their roles in issuing Shariah standards for financial products offered by Islamic banks and approving or disapproving financial products engineered by Islamic banks on the basis of Shariah. This group is selected on the criteria of Shariah scholars who are *Fiqh* (Islamic jurisprudence) specialists who may also have an academic role. Few of them were mainly economists by training and have been selected for their academic expertise in Islamic banking and finance from a product development perspective.

8.4.2.3 Conducting the interviews

After selecting the target interviewees, interviews were arranged and held with each interviewee in an academic setting to meet required academic standard for the use of the interview method. Interviews took place in different countries and were voice recorded. 20 interviews were conducted; each interviewee was given an overview of the research subject and scope, and made aware that disclosing any information about their identity or the identity of their affiliated institutions is strictly based on prior consent from them. If they do not wish to disclose any information a complete anonymity will be ensured. They also were assured that they are free to decline answering any interview question, withdraw or change their answer or withdraw their interview at any time, by a written request, before the write up of the research.

Interviews were then transcribed from the voice recorder. In order to ensure accuracy of data collected and the reliability of the answers provided, each transcribed interview was sent back to the interviewee by email to check that the researcher transcribed their answers as was provided by them. This also has given them the chance to amend or change any of their answers. They were also asked whether if they are still happy for their interview to be used for the purposes of the research. A period of ten working days was given to them to respond to the researcher; thereafter, the researcher will assume their approval and accuracy of the transcribed interviews.

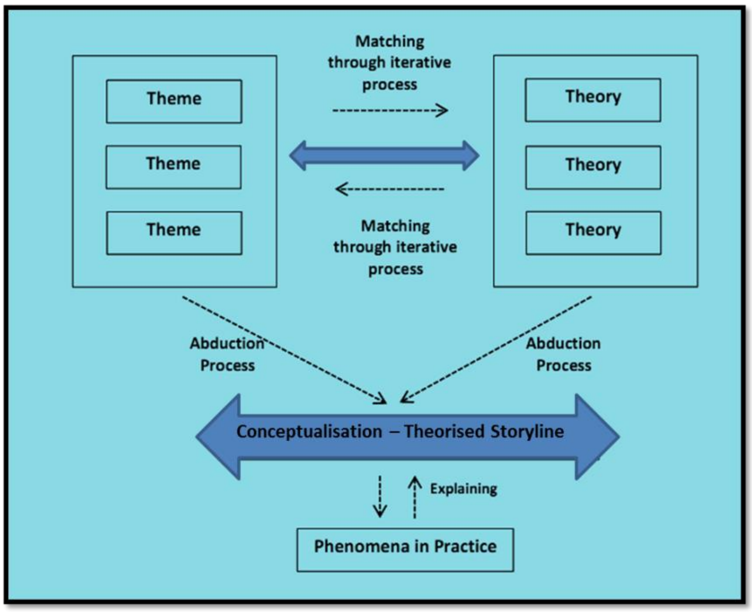
It is noteworthy that in some cases the interviewees were in quite powerful positions, as gatekeepers involved in defining what makes a financial product acceptable from a Shariah perspective and vice versa, also having access to important industry bodies. The interviews were semi-structured and focused on questions that are related to the objectives of the research and all interviews were face-to-face.

8.4.2.4 Steps taken for analysing collected interviews data

The overall analytical approach adopted largely followed the conventions of template analysis, where a list of codes (a template) was produced representing themes identified in the textual data (King, 2004). The qualitative data analysis package NVivo 10 was used for the initial stages of coding and textual analysis.

In the first step, open coding was performed (Corbin & Strauss, 2008) to identify initial concepts (Corbin & Strauss, 1990) or first-order codes (Van Maanen, 1979) related to the phenomenon. In the next step, axial coding (Corbin & Strauss, 1990; Corbin & Strauss, 2008) was used, in which we looked for relationships among and between these first-order categories to arrive at second-order themes (Corley & Gioia, 2004; Gioia & Thomas, 1996; Van Maanen, 1979). The next step was to find aggregate dimensions based on these first- and second-order categories. Although this process is described in linear steps, it was recursive in nature. We continued until a clear idea of emerging theoretical relationships is reached (Kannan-Narasimhan, 2014). This process is depicted in Figure 8.6 below.

Figure 8.6: Conceptualisation process of the interviews themes
Source: (Ahrens & Chapman, 2006; Bryman, 2012; Hidayah, 2014 and Kannan-Narasimhan, 2014)



The initial template for the analysis was constructed with a series of broad categories that linked into the research objectives and interview questions. However, the template was further discussed and modified by the researcher, and categories were reformulated within the template as a result of this inductive process as presented in Figure 8.7 below.

Figure 8.7: Sample coding, themes and theoretical conceptualisation

Narratives Vignettes	Narrative Themes	Theorised Concept
'Shariah controls do not limit the scope of financial innovation and engineering; on the contrary it protects the Islamic finance industry'.	Resilience	**Religious orientation towards financial innovation**
'Shariah requirements are for the benefit of all involved parties, they restrict financial innovation that leads to harm and prohibitions under Shariah'.	Beneficial innovation	
'A framework for financial innovation and engineering which incorporates Shariah objectives and considers Shariah solutions (*al makhraj* (exit) *al Shar'I*), as opposite to legal tricks, is required and important'.	Framework for innovation	

Therefore, the final template contained categories that had been created both a priori and inductively. Each of these categories was then subjected to more in-depth and detailed analysis. The findings reported here (see Chapter 10) stem mainly from data that were initially categorised into themes, though it is important to point out that then all of the transcripts were re-read in an attempt to ensure that the initial interpretations could be clarified through locating the data back into the context from which it was derived (Cassell et al, 2009).

To ensure data trustworthiness, steps suggested by Lincoln and Guba (1985) and Corley and Gioia (2004) were followed. A log was used to maintain data including contact records, field notes, and interview data, as well as to code data.

In the coming sections, the answers given by these two groups of interviewees followed by our understanding and interpretation of them is presented. It is expected that the responses given by the interviewees will greatly contribute to our understanding of the salient features of the financial innovation and engineering process from an Islamic finance perspective. Moreover, the gap between the ideal (what it should be) and current practices (what it is) was examined in the light of the answers given by the interviewees. The combined answers of both groups will provide a full picture as they represent the key stakeholders in the financial product development process. It also helped in articulating a possible theoretical framework for financial innovation and engineering from an Islamic perspective.

The questions presented to both groups of interviewees are available in the Appendix 5 attached at the end of this thesis. However, before proceeding, details of the interviewees and their respective institutions are provided below in Table 8.1. The objective was to interview the right mix of key figures in the Islamic finance industry, in order to cover as many views as possible regarding financial innovation and engineering.

As shown in Table 8.1below, the focus was on influential Shariah scholars because they play a pertinent role as members of the Shariah Board of the Accounting and Auditing Organisation for

Islamic Financial Institutions (AAOIFI). They have been issuing Shariah standards for IFIs for relatively a long time to shape the Islamic finance industry. Other interviewees have also given a different perspective to the subject with their answers to the interview questions.

Table 8.1: Details of interviewees and their profile

Institution	Role	No. of Interviewees
Accounting and Auditing Organisation for Islamic Financial Institutions (AAOIFI)	Shariah Scholar (sits on the Shariah Supervisory Board of at least 5 Islamic banks)	7
AAOIFI	General Secretary and CEO	1
International Shariah Research Academy for Islamic Finance (ISRA)	Research Scholar	1
Islamic Development Bank	Islamic finance economist (product development division)	1
Al Mezaan Bank	Head of Product Development	1
Abu Dhabi Islamic Bank	Head of Shariah Supervision/ Head of Product Development	2
Qatar Foundation	Shariah Scholar and Academic specialised in Islamic finance	2
Al Qaseem University	Islamic finance expert	1
Islamic Finance Advisories	Islamic finance experts and practitioners	3
Islamic Bank of Palestine	Chairman of the Shariah Supervisory Committee	1
Total		**20**

As shown in Table 8.1 above, 20 interviews were conducted with key scholars and practitioners in the Islamic finance industry with a focus on those involved in setting Shariah standards for IFIs.

8.4.3 Documentary Analysis

The combination of review of documents and other primary research methods is typical for an in-depth qualitative inquiry. The review of documents (see Appendix 3 for detailed documentary analysis findings) is an unobtrusive and nonreactive method, which is rich in portraying the value and beliefs of participants and it is very useful in understanding the group being investigated (Bryman 2012; Ahrens & Chapman, 2006; Cresswell and Plano Clark, 2007). Having said that, it is sometimes difficult to display the logic of interpretation used in inferring meaning from the documents, thus, this method was triangulated with the other main methods i.e. questionnaire and semi-structured interviews (Marshall and Rossman, 1999).

The documentary analysis process aims to obtain data from major Islamic banks, in relation to product development, to be analysed. This method analyses 4 main types of Shariah compliant financial products in the market, one investment product for savings account, one asset product for home financing, a derivative product and a *sukuk* (Islamic equity certificate) issue. At least documents from 5 IFIs were collected for each product. This included documents and prospectus related to each type of the selected financial products, Islamic legal opinions and certification of those financial products.

Based on these items and using the developed framework for financial innovation and engineering in Appendix 2 as a measurement tool, we assessed how the fundamental principles are enmeshed in those financial products and banking practices. Then, this data was analysed to identify certain variables and relationships among them, in order to provide an assessment of the role of these different relations in the current financial innovation and engineering environment. This method has added value in answering the research questions in addition to the two other methods of data collection mentioned above. It also helped in selecting and writing the survey and semi-structured interview questions.

8.4.4 Direct Observation

Direct observation is achieved by having an in-depth analysis of the product development processes and their different stages, as practiced by a major Islamic bank, based in the UK. As the researcher is involved in the Islamic banking and finance industry, this involvement has facilitated access and direct observation of existing issues related to financial innovation and engineering. This was further enhanced by attending and participating in various Islamic finance conferences and forums.

8.5 Validity and Reliability of the Data

The validity of the questionnaire is subject to the level of accuracy and honesty of the respondents' answers. Assuring or assessing honesty and accuracy is very difficult to measure. Nevertheless, the study endeavoured to minimise the risk of any compromise to the validity of the data collected. This is achieved by providing a simple introductory explanation of the research for both the questionnaire and the interviewees in the semi-structured interviews, completing the questionnaire by the researcher, testing it on few of my peers (pilot testing of 15 respondents) and providing the respondents and interviewees personal assurance of anonymity of both their identity and responses.

Furthermore, the research employed respondent validation approach to increase its internal validity of the overall analysis. Respondent validation or participant validation in credibility (internal validity in quantitative research) refers to "a process whereby a researcher provides the people on whom he or she has conducted research with an account of his or her findings" (Sandberg, 2005; Bryman 2012: 391). In order to seek corroboration and confirmation and also to ensure the findings are congruent with the view of participants, each interviewee was provided with an account of what he or she said in the interview (Bryman 2012: 392).

Each transcribed interview was sent back to the interviewee by email to check that the text captured their answers as was fully provided by them. This also gave them the chance to amend or change any of their answers. They were also asked whether if they are still happy for their interview to be used for the purposes of the research (Ahrens & Chapman, 2006; Cresswell and Plano Clark, 2007).

A period of ten working days was given to them to respond to the researcher; thereafter, the researcher will assume their approval and accuracy of the transcribed interviews. Furthermore, the initial draft of the findings was shared with few Islamic scholars, who participated as interviewees, for their feedback and comments, thus, achieving high communicative validity (Sandberg, 2005). A validation and transferability (Bryman, 2012) was also maintained by using rich triangulation account of the data collection and analysis, which offered a ‘thick description’ which enables transferability of the findings to other context.

In order to ensure reliability and repeatability of the same results by any other researcher following the same design and tools of data collection, the study endeavoured to minimise any bias in the data collection process, to be consistent, accurate and objective throughout the research project. A record and auditing process of the collected data and followed procedures of the whole research process was undertaken by other academic peers (McNeil, 1996).

Hence, by applying the described procedures above throughout the research phases a full transparency and trustworthiness is fully maintained across all research processes. We also acknowledge that an utter and complete objectivity of the research findings is very hard to achieve, however, the research endeavoured to ensure objectivity is also maintained as possible.

8.6 Ethical Consideration

Ethical conduct was preserved in all research stages of collecting data and undertaking the research process. With respect to primary data collection by questionnaire survey and semi-structured interviews, a full explanation about the research, its subject, contribution and benefit to the Islamic finance industry was provided to all participants. The voluntary aspect of their participation was made clear and they were assured of the anonymity of the data collected, their identity or the identity of their institution. Participants were also informed that their data and any information they provide will be processed, handled and stored according to the standard academic practice and is used for academic research purposes. They were made aware that they have the right to change, amend or withdraw their participation at any time before the write up of the research.

Any documents obtained, for the documentary analysis process or for the research as a whole, were public documents, when the document was not obtained from a public source, an explicit consent was sought from the relevant party or institution. Any reference to the source identity was completely omitted from the research.

The same process was applied to the observation of the Islamic finance industry; nothing was noted down, discussed, written or recorded (if applicable) until a prior permission is obtained from the relevant party. All collected data were coded and stored safely with a password access; ensuring that there is nothing links the collected data to the participant identity. A full confidentiality was maintained and no one was able to access the data other than the researcher and the supervisory team. All processes of conducting the research, collecting data, methods of collecting and processing data and questions asked to participants were submitted to and approved by Aston University Ethics Committee.

8.7 Conclusion

This study aims to explore and understand the principles of financial innovation and engineering in the Islamic finance and banking system, and what constitutes a religious orientation towards financial innovation and engineering. The research further discusses the philosophy of Islamic economics and the theory of financial innovation from an Islamic perspective. The study also aims to create a theoretical framework for financial product development that incorporates the Shariah objectives and requirements and could be used by all Islamic and even non-Islamic banks.

Achieving the above objective would require a detailed plan about how the research is conducted and how its data is collected. The research methodology and design that this research has employed, in order to satisfactorily meet the research objectives and answer the research questions, was outlined and explained in this chapter. It was concluded that using a mixed-methods approach of quantitative and qualitative methods for data collection would better address the research problem. The key elements that were discussed herein in relation to the research design are summarised in Table 8.2 below.

Table 8.2: Key elements of the research design

Element	Focus
Ontology	Constructionism
Epistemology	Interpretivism
Research design	Mixed-methods sequential approach of quantitative and qualitative methods

	for data collection.
Empirical materials of data	Triangulated data based on a survey questionnaire, semi-structured interviews, observation and documentary analysis.
Analysis of collected data	Qualitative
Interpretation	Underlying meanings
Critical interpretation	Ideology, behaviour, social reproduction, drivers of actions

This chapter also provided a critical analysis of using the selected methods and the advantages and disadvantages of the chosen methods for this research study. Employing an alternative method to answer the research problem, such as a case study or multiple case studies would not provide a satisfactory and accurate outcome compared to a questionnaire, semi-structured interviews and documentary analysis. This is because a case study or even multiple case studies will not be sufficient and are limited to collecting and analysing the required data to answer the research questions.

In addition to this, multiple case studies will dilute the focus of giving an accurate account with regards to this issue. This is due to the nature of the few available Islamic banks in the UK and the difficulty in obtaining access to one or more of them, or access to Islamic banks in other geographical locations and the period required for the researcher to spend there for the data collection. It was believed that this would have limited the scope of this study. Therefore, it is believed that the chosen research methods and design is the best approach for addressing the research problem satisfactorily.

The analysis of the data collected via questionnaire survey and its findings are presented and discussed in the next chapter (Chapter 9), which provides an insight on the processes of financial innovation and engineering in IFIs.

Chapter 9: Analysis of the Survey Questionnaire Data

9.1 Introduction

The previous chapter (Chapter 8) discussed the research philosophy and methodology by outlining the research design and approach. It provided a full account of the steps followed in conducting this research and collection of its data. This chapter is concerned with the analysis of the primary data collected through the survey. The survey questionnaire is conducted in order to provide an insight into financial innovation and engineering practices in Islamic financial institutions (IFIs). Following on from the survey questionnaire, interviews (see Chapter 10) were conducted to further explore the survey findings. The data analysis of the questionnaire is exploratory and will provide descriptive statistics of percentages and frequencies.

It aims to produce simple summaries about the sample and about the observations that have been made. Such summaries are presented as either or both summary statistics or visual, i.e. simple to understand graphs. Summary statistics are used to summarise a set of observations, in order to communicate the largest amount in as a simple format as possible. These summaries form the basis of the initial description of the data, as part of a more extensive analysis that is complemented by the analysis of the semi-structured interviews and its findings.

The analysis in this chapter aims to adequately answer the research questions. (Moore, 2000: 133). As has been explained in Chapter 8, the questionnaire was divided into six sections and each section was developed to find satisfactory answers to one or more of the main research questions and their sub-questions. The analysis of the data collected is presented according to the structure of the questionnaire sections. The objective is to summarise the data by using frequencies, percentages and tables known as profile analysis, or exploring the data set (Robson, 2007: 403).

This chapter is organised into sections in accordance with the various parts of the questionnaire survey. At the beginning of each section, the emerged theme or sub-theme is presented as the relevant title for that section. Further analysis of the survey data related to the sections below is presented in supplementary sections in Appendix 1.

9.1.1 Summary of demographic of the sample respondents

The questionnaire survey was distributed to a target sample of around 150 IFIs with 61 respondents completed the questionnaire. This represents a response rate of 41%. Respondents' institutions represented 21 countries around the world and were spread over four continents, Asia, Africa, Europe and North America. It is worth mentioning that 150 IFIs represents most, if not all, of all Islamic banks operating worldwide, due to their current small numbers. The questionnaire is aimed at respondents in product development and Shariah compliance roles, including Shariah scholars. 57% of respondents were in the role of head of product development and structuring and 21% in the role of head of Shariah compliance with 7% Shariah scholars who may supervise more than one Islamic financial institution. 85% of respondents have a dedicated Shariah compliance function, and the remaining 15% have different arrangements to cover this function. For further details about the demographic of the sample respondents, see Appendix 1, section 1.

9.2 Themes from the Survey Findings

This section outlines the main themes emerged from the survey findings, which address the research objective in finding satisfactory answers to the research questions and are in accordance with the theoretical lens of the research as discussed in Chapter 7. Table 9.1 below outlines the main themes emerged from the survey findings, and in the subsequent sections, the main themes and their sub-themes are analysed according to the sections of the survey. Some of the sub-themes and tables of responses are not included here and are presented in an appendix at the end of this research. See Appendix 1, section 2 for further details about those sub-themes and relevant tables and analysis of the respondents' sample.

Table 9.1: Themes from the survey findings

No	Main Themes
1	Perception of Shariah regarding financial innovation and activities
2	Underlying concept of financial innovation in Islamic finance
3	Process of financial innovation and engineering
4	Challenges in financial innovation and engineering

9.2.1 Perception of Shariah regarding financial innovation and activities

This section explores the conceptual framework of how the respondent IFIs view financial innovation. It also aims to gauge whether they believe that Islam provides an economic and finance system and how they would describe and view that system, if they so believe. This is important as for a proper framework for financial innovation and engineering to be established, it requires a solid foundations to be built on. This would be represented in the economics and finance theories. This has been explored further in the interviews, see Chapter 10.

a. Perceptions of the nature of Islamic economics and finance

There are few views (see e.g. Ramadan, 2009) that advocate that there is no actual distinct method of Islamic economics and finance, it is merely a form of business ethics, thus, why we need to talk about financial innovation and engineering from an Islamic perspective? This part of the questionnaire is aimed to discuss this view and gather the views of different key players in the Islamic finance industry.

Table 9.2: Respondents' perceptions about the nature of an Islamic economics and finance system

Islam Provides What of the Below	Total (% & Count) 100%	(61)
An independent Islamic economics and finance system	74%	45
An interest-free version of the conventional economics and finance system	28%	17
A middle way approach to finance, but does not offer a stand-alone economics and finance system.	8%	5
An Islamic economics and finance system does not exist and what is known as Islamic finance is actually just business ethics.	2%	1

The majority of respondents (around 91%) disagree with this view i.e. Ramadan's (2009) view as stated above; however, they described their perception of this issue in different ways according to their world view of this phenomenon. 74% of the respondents IFIs believe that Islam provides a full independent economics and finance system. 28% believe the same, but to a lesser degree, citing that in their view, Islamic economics and finance are an interest-free version of the capitalist conventional system. This issue was also discussed in Chapter 6, Section 6. 8, it was argued that the Islamic economic thought is based on three main concepts and principles. Those concepts and principles are: the concept of unity, the concept of viceregency of human being on earth and the concept of free-will and responsibility. The principles are considered to be the principle of moderation, the principle of economic efficiency and the principle of social justice (Ahmed, 1980 and Naqvi, 1981).

This view is close to the current reality of Islamic finance, but excludes particular aspects of Islamic finance that extend beyond eliminating dealing with interest. The ban on interest payments could be the main feature of an Islamic economics (Visser, 2009: 26-30), but it is by no means the only defining feature. There are, indeed, certain other features and requirements that underpin financial practices and contracts in Islamic economics and finance. For example, stipulating that the subject matter of a sale transaction should exist and be possessed by the seller at the time of sale, this Shariah requirement suggests that short selling and options in the financial market prohibited under Shariah. Also the exchange of the subject matter and the price in a sale transaction should not happen in a future date, this feature of the Islamic economics and finance system prohibits future contracts that are heavily practiced in the financial market.

8% of respondents believe that, Islam offers a middle way approach to finance, but not an independent economics and finance system. This is because they believe that, while Islamic finance is more than just an interest-free capitalism in both ethos and product design, in reality it is not financially independent enough from the conventional banking to be considered a truly independent system.

Only 2% agreed with the idea that whatever Islamic finance is offering, it is just a form of business ethics. Business ethics here refer to the manner in which a financial transaction is conducted, rather than what underpins the transaction itself. This would include e.g. honesty in conducting the financial transaction, disclosing all defects and risks, avoiding cheating or misleading the other parties to the transaction and so on. A probable reason for such a low rate of agreement with this statement is the concept of Shariah going beyond the ethics, as explained above, to explain how financial transactions should be conducted, determining exactly what kind of financial transactions are permitted or forbidden.

All the above views imply that Shariah has its own perspective regarding financial innovation and engineering, which its financial model means that Islamic economics and finance is different from the conventional system in that regards.

b. Perceptions about financial innovation

How respondents view financial innovation is very important to determine their attitude towards it and provides insights of current practices. Innovating new financial products is very important for the survival and growth of an IFI. However, also equally important is that financial innovation is also in accordance with Shariah requirements.

Table 9.3: Respondents' perceptions about financial innovation

Respondents' Views about Financial Innovation	Total (% & Count) 100%	(61)
Harmful to society and the financial system.	0.00%	0
Useful to society and the financial system.	34%	21
Regulatory and Shariah induced innovation (i.e. which is driven by and complies with both Shariah and regulations) which serves a beneficial purpose in society.	57%	35
A way to circumvent and avoid financial regulations and the objectives of Shariah-based Islamic financial principles.	8%	5

None of the respondents view innovation as being harmful to society in general. 34% believe that financial innovation is useful to society and the financial system. 57% of respondents have more defined view of financial innovation. They believe that only financial innovation that is based on Shariah rulings and requirements and also incorporates regulations that do not contravene or compromise the Shariah is considered to be beneficial to everyone. Otherwise, it would not benefit the society as a whole, and it would instead benefit only a small group at the expense of others.

However, 8% believe that nothing positive could come from financial innovation, which they see only as an approach to circumvent Shariah requirements and avoid certain regulations to achieve a self-serving outcome. This negative view of financial innovation could be attributed to a wider distrust of financial innovation in the banking system, particularly the events that precipitated the 2008 global economic crisis. This is also supported by the literature, (see e.g. Plosser, 2009 and Sveiby et al, 2012).

Hence, the majority of respondents believe that properly controlled and regulated financial innovation that is based on Shariah cannot be harmful, which is not considered the case with many existing conventional financial innovations.

c. Perceptions of the Shariah position in relation to encouraging financial innovation

As presented in Table 9.4 below, overall majority of respondents (97%), believe that Shariah encourages financial innovation and provides a solid ground for a proper and useful version of innovation that benefits everyone. Only 3% of respondents do not think that financial innovation is encouraged, even if the innovation does not compromise the principles of Shariah. This might be due to a sensitive issue in relation to a viewpoint of innovation in Islam as being a negative deviation from the intended practice of the religion, which is a view that a small group of Muslims advocate (see Ali, 1968).

Table 9.4: Perceptions of the Shariah position in relation to encouraging financial innovation

Shariah encourages financial innovation	Total (% & Count) 100%	(61)
Yes	97%	59
No	3%	2

Ibn al Atheer mentioned that innovation is of two types, a good one (innovation of guidance (*huda*)) and a bad one (innovation of misguidance (*dhalaal*)), if the innovation is in accordance with and does not contradict the Qur`an and the *Sunnah* of prophet Muhammad, then it is a good acceptable innovation (Ibn Mandhur, 2009). Therefore, this section and the other sections that follow focus on what is widely acceptable by the majority of Muslims under Shariah in terms of financial innovation. Hence, this approach aims to manage this sensitive issue carefully and minimises any potential bias in the respondents' answers.

d. Possible instruments for financial innovation and engineering

85% responded it is the concept of *Al Maslaha Al 'amah,* (see Al Buti, 2005 for a discussion about this concept), which can be translated as the concept of acting in the interest of benefiting the wider society, which brings good to a defined group or groups in society as long as this does not cause harm to other groups. 75% also believe that *ijtihad* is an instrument that would provide a solution for a financial innovation to be based on Shariah. Also, 67% agree with *istihsan* being another instrument that can be used for determining whether a financial innovation can be considered from a Shariah perspective. *Istihsan* usually is based on a scenario of, when faced with two competing Islamic rulings, choosing the ruling that provides the greatest likely benefit is given preference.

Table 9.5: Respondents' perception of possible instruments for financial innovation

Financial Innovation Instruments	Total (% & Count) 100%	(61)
Ijma' (consensus of qualified scholars/Shariah Supervisory Board/Committee)	54%	33
Ijtihad (individual scholarly interpretation)	75%	46
Qiyas (analogical reasoning based on established precedents)	41%	25
Maslaha 'ammah (public good)	85%	52
Istihsan (judicial preference for one legal analogy over another, usually to give preference for the public welfare)	67%	41
Other, please specify	3%	2

54% of respondents think that the consensus of qualified Shariah jurists in agreeing an approach or finding a solution for a financial problem is another tool that can be used for financial innovation. Close to that view, 50% also consider *qiyas* as a technique which helps innovating financial product that is based on analogy of the similar rationale of an existing financial innovation with the proposed one. All of those methods can be used for financial innovation and may be used as guidelines when conducting financial innovation. However, not all methods will be applicable in every circumstance of financial innovation.

9.2.2 Underlying concept of financial innovation in Islamic finance

It is important to understand the approach taken by IFIs towards financial innovation, in order to gauge their attitudes towards new ideas. Also, to understand the main drivers of new ideas for financial innovation, who drives them within the IFI and the objective of developing new financial innovation. This would help understanding how IFIs perceive financial innovation. This is illustrated in the following sub-themes below.

a. Attitudes towards financial innovation

The attitude of Islamic banks towards financial innovation is important in overcoming challenges they may face. As presented in Table 9.6 below, 62% of respondents' banks are supportive of new ideas for financial innovation as opposite to 30% of respondents who are neutral towards new ideas.

Table 9.6: IFIs' attitude towards financial innovation

Respondents' Attitude Towards Innovation	Total (% & Count) 100%	(61)
Supportive of new ideas	62%	38
Resistant to new ideas	2%	1
Reluctant to try new ideas	7%	4
Neutral towards new ideas	30%	18

The findings of this sub-theme are, in general, positive. It shows a positive attitude towards new ideas and trying new financial innovation. However, 7% of respondents are reluctant to try new financial ideas or products. This could be, as we would assume from the analysis, due to associated risks, costs, business restraints, size of the bank or even business plan or strategy of the bank.

b. Sources of ideas for financial innovation

The source of new ideas for financial innovation in IFIs shows the method adopted by each IFI. It indicates whether the IFI is actively looking to innovate and being proactive in the market or taking a reactive position by replicating financial innovation of other financial institutions to offer it to its customer base. This could be by either replicating other products on offer by other IFIs or reengineering traditional financial innovation in a Shariah compliant way. The findings are presented below.

Table 9.7: Respondents' sources of ideas for financial innovation

Sources of New Innovation/product	Total (% & Count) 100%	(61)
Replicating products of conventional banks (re-engineering conventional financial products).	30%	18
Products of other Islamic banks.	69%	42
Customer surveys and feedback.	33%	20
Market research.	66%	40
In-house Research & Development.	84%	51
Other, please specify	5%	3

The source of ideas for financial innovation and products would be more viable and rewarding if it is based on a clear structured process. If the Islamic bank incorporates new ideas for financial innovation as part of its business, and there is a dedicated function in the bank to research and develop new ideas, this implies that the bank is pro-innovation and would lead from that perspective. This could have its positive influence on the Islamic finance industry as a whole.

84% of respondents have a dedicated in-house research and development function to generate new ideas for financial innovation and drive the development of those ideas. This reflects a structured positive approach towards new financial innovation. 69% of respondents are driven by competition with other IFIs and the decision to try new financial products is influenced by products of other IFIs.

Those respondents are taking much less proactive approach to idea generation of financial innovation and development. On the other hand, almost equal number, 66%, of respondents generate their new ideas for financial innovation from market research. Their decision to innovate or develop new financial products is based on the market need and an identified segment of the market.

33% of respondents also use customer surveys and feedback as a source of new ideas for financial innovation. An idea can then be either tested on a sample of customers, or the customers could be the source of generating an idea, e.g. by conducting a focus group. In contrast to the above, 30% of respondents obtain new ideas for new financial products from conventional banks. This is what is known in the industry as reengineering a conventional financial product so that it can be used in a Shariah compliant way.

c. The objective of financial innovation

The objective of an IFI to innovate and develop new financial products could be influenced by different factors, such as expanding in the market, seeking a competitive advantage, meeting the need of financially excluded segment in the market or all of the above. This objective(s) would influence the IFI approach towards financial innovation and its orientation. The main objectives of developing new financial products in the market as stated by respondents are shown below.

Table 9.8: IFIs' objective of developing new financial products

Aim of the Institution for Developing Financial Product	Total (% & Count) 100%	(61)
Developing new products to compete with conventional financial institutions for a share of the market.	18%	11
Developing new products to address the need of a religiously excluded customer segment.	13%	8
To offer an alternative to conventional financial institutions.	84%	51
Expanding its reach in the market for better profitability.	28%	17
Being socially responsible and serve the overall Shariah economic purpose of developing the society, establish justice, fairness and equality etc.	38%	23

The IFIs views presented in this section would provide some insight into whether Islamic banks exist to compete with conventional banks, or to serve a segment in the market that is financially excluded due to their religious beliefs. Respondent banks were able to tick more than one answer, as their aim may include more than one objective. Some people may think that IFIs are excluded from the mainstream financial market and their offerings are not for that market, they exist to serve the financial needs of Muslims only. The majority of respondents 84% stated that their main objective is to develop new financial products to offer an alternative to conventional banking.

38% mentioned that one of their main objectives is to be socially responsible and serve the overall Shariah economic purpose of developing the society and establishing justice, fairness and equality. Those three aims are believed to be the main Islamic elements that are sought, when using economic resources (Wilson and El-Ashker, 2006) and this is also the case when innovating and engineering financial products.

However, commercial interests remain a strong motivation, with 28% of respondents stating that they develop new financial products to expand their reach in the market for a better profitability, as one of the main objectives. In a similar manner, 18% of respondents consider developing new financial products to compete with conventional banks for a share of the market. This might be an influencing element that could compromise on the quality of Shariah compliance of the new financial product or innovation. Shiller (1993) argued that financial innovation can and should be deployed to manage society's largest economic risks. By this argument, he advanced many proposals on how financial instruments can be deployed to manage and help reduce fluctuations in people's lifetime income and wealth, (see Chapter 5, Section 5.7.2).

Finally, 13% of respondents made it clear that their objective of developing new financial products is to meet the needs of religiously excluded segment in the market. The objective of offering Sharia compliant financial innovation to Muslims does not in any way contradict the aim to compete in the mainstream financial market. IFIs provide a different approach to offering financial products, which are open to people from all faiths and backgrounds and are not restricted to one religious group or market.

9.2.3 Process of Financial Innovation

Understanding the process of financial innovation as practiced in IFIs would shed a light on how Shariah is enacted as a shared boundary object across different functions and the level of checks and approvals considered for such religious orientation of the financial innovation process. The following sub-themes discuss this process as practiced by IFIs.

a. Approval process of financial innovation

The approval process for financial innovation in IFIs sets out the control and check points undertaken by an IFI for each stage of the process. It also explores the methodology followed by an IFI to ensure the right governance is adhered to. This process is discussed below.

Table 9.9: Respondents' answer to Shariah compliance approval

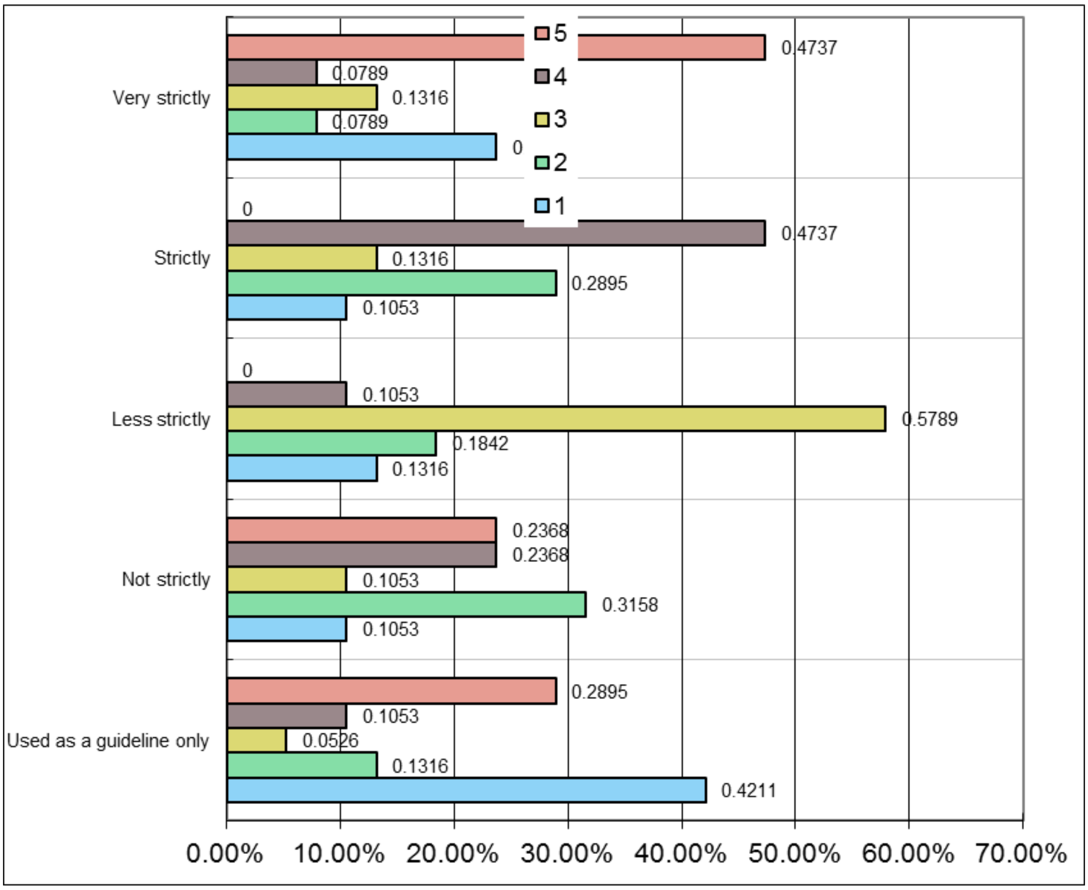
Shariah Approval of the Product Development Process	Total (% & Count) 100%	(36)
Yes	53%	19
No	47%	17

This section explores the level of Shariah governance and consideration given to the process of financial innovation by IFIs, by asking if the formally documented process is signed off from a Shariah perspective for incorporating all Shariah requirements. 53% of respondents stated that the formally documented product development process is approved by the Shariah Supervisory Committee or the Shariah compliance department.

However, 47% answered 'No', indicating that the Shariah Supervisory Committee does not participate in their product development process. This is a high proportion of respondents and would indicate that there is a gap in current practices. It shows and lack of giving due attention to ensuring that this formally documented process is vetted as being in accordance with Shariah requirements.

It is important that the formally documented process for product development is regularly updated to ensure that it incorporates all new requirements, such as Shariah and regulatory requirements or changes. 32% of respondents said that they do not update the document, which implies that the document is there as a ticking box exercise, but it is not necessarily effective. This is in contrast to 68% of respondents, who update the formally documented process for financial product development regularly. In the 'specify how often' part of the question, the average answer was every year and a substantial proportion said when any update to the document is required.

Figure 9.1: IFIs' adherence to their own documented NPD process



Respondents who had obtained Shariah compliance approval for their documented process were asked to rate the level of their adherence to the formally documented product development process. They were asked to rate each of the following from 1-5 (where 5 is very strictly), used as a guideline, not strictly, less strictly, strictly and very strictly. 47% of respondents stated that they follow the documented process strictly and very strictly equally as shown in the Figure 9.1 above. 58% of them said they would adhere to the documented process less strictly; 32%, however, rated adhering to the documented process as ‘not strictly’, and 42% would use the documented process as a guideline.

Table 9.10: Existence of a committee to authorise financial innovation in the respondents’ institutions

Committee for approving new products	Total (% & Count) 100%	(61)
No	18%	11
Yes	82%	50

This section of the questionnaire aims to establish whether there is a business committee in the financial institution that is tasked or designated to check new innovations/products to authorise the development process to proceed. The existence of this committee is important in order to demonstrate a proper governance structure for new financial innovation and product development. This committee would challenge the assumptions and financial modelling, business viability, compliance with Shariah and suitability in the market of the proposed new financial product.

18% of respondents answered no, this could be due to the proportion of independent Islamic scholars, who completed the questionnaire and to ensure accuracy of their responses, they answered no. There is also a possibility, that the question could be misunderstood by those who answered ‘no’, because there is no designated committee in the institution for that role, or possibly there is a different structure for that process in their institutions.

A ‘yes’ response was given by 82% of respondents and they then named the committee/individual. Nonetheless, although all of them have the same role, the title of this role varied widely. Respondents IFIs call it one of the following, Assets and Liability Committee, Product Structuring Committee, New Product Approval Committee and some said it is the Sharia Supervisory Committee, and 2 respondents said it is the CEO/general manager of the bank. It is clear that such governance or committee exists in a way or another despite different names and roles of that committee. This would be usually based on the mandate and terms of reference for such committee.

b. Process of financial product development

This sub-theme explored key factors that an IFI takes into account for the product development process of a new financial innovation. This helped in identifying what elements that are considered to be the most important for IFIs when developing a new financial product. The findings are summarised below.

Table 9.11: Factors considered by IFIs in the NPD process

Factors considered in the product development	Extremely important		Very important		Important		Less important		May be considered		Total (% & Count) 100% (61)	
a. Financial consideration (potential turnover, profit, revenue, etc.).	66%	40	23%	14	7%	4	0%	0	5%	3	100%	61
b. Market considerations (consumers' needs and demands etc.).	24%	14	51%	30	24%	14	0%	0	2%	1	100%	59
c. Competition in the market.	12%	7	40%	24	42%	25	3%	2	3%	2	100%	60
d. Fit with corporate strategy and plan.	27%	16	51%	30	15%	9	2%	1	5%	3	100%	59
e. Fit with the objectives of Shariah (Maqasid Al-Shariah).	25%	15	50%	30	17%	10	5%	3	3%	2	100%	60
f. Resource availability (human skills, budget, system capability, etc.).	8%	5	45%	27	35%	21	7%	4	5%	3	100%	60

This section lists various possible factors that IFIs would take into consideration when engineering new financial products. Respondents were asked to rate each factor according to its importance to the institution from 'extremely important' to 'may be considered'. Their answer would show the level of importance of each of the listed factors to the IFI and its inclination towards Shariah when making a decision about developing new financial products.

The highest rating of 57% said ‘extremely important’ for factor (a) financial consideration, then 51% said ‘very important’ for factors (b) and (d) equally, where important considerations are given to market and corporate strategy and plan. Also 50% of respondents give ‘very important’ consideration to factor (e), how the new product fits with the objective of Shariah and its requirements. This could be clearly linked to the conceptulaisation provided in Figure 7.2. Figure 7.2 extends Siguaw’s, et al. (2006) theoretical framework of innovation orientation to analyse religious orientation towards financial innovation and engineering in IFIs. This approach is useful to explain the orientation of financial innovation and engineering in Islamic finance as a learning philosophy.

Then, 45% and 40% of respondents give ‘very important’ considerations to factors (f) and (c) respectively. 42% of respondents rated factor (c) competition in the market as ‘important’, then the rating declines substantially as it moves to ‘less important’ and ‘may be considered’.

Table 9.12: Steps followed by respondents IFIs when developing new financial product

Steps for developing new financial product	Never		Seldom		Occasionally		Often		Always		Total 100% (61)	
a. Market research	7%	4	2%	1	28%	17	47%	28	17%	10	100%	60
b. Brain storming exercise to generate new products ideas	0%	0	25%	15	34%	20	36%	21	5%	3	100%	59
c. Formal ideas screening process	0%	0	12%	7	59%	34	26%	15	3%	2	100%	58
d. Preparing a Concept Paper for the new product	2%	1	7%	4	5%	3	60%	36	27%	16	100%	60
e. Approval of Concept Paper by the Shariah Board/Committee	3%	2	0%	0	10%	6	19%	11	68%	40	100%	59
f. Preparing a detailed Product Definition Paper (business case/ financial modelling)	2%	1	3%	2	19%	11	24%	14	52%	30	100%	58

g. Approval of the Product Definition Paper from the relevant committee	2%	1	7%	4	10%	6	15%	9	66%	39	100%	59
h. Review of the product documentation to ensure compliance with AAOIFI rules	2%	1	3%	2	17%	10	27%	16	51%	30	100%	59
i. Obtaining Shariah Supervisory Committee approval	3%	2	2%	1	3%	2	10%	6	81%	48	100%	59
j. Development of IT system and operational processes/procedures	3%	2	2%	1	10%	6	47%	28	37%	22	100%	59
k. Product testing	2%	1	3%	2	3%	2	50%	29	41%	24	100%	58
l. Training of staff	2%	1	5%	3	15%	9	51%	30	27%	16	100%	59
m. Post launch review	3%	2	3.%	2	27%	16	56%	33	10%	6	100%	59
n. Shariah audit of the product	2%	1	7%	4	3.%	2	5%	3	83%	49	100%	59

The respondents' views in this section aimed at exploring and describing steps and frequencies followed by respondent IFIs when developing new innovation/products. The question lists all possible steps for developing a new financial product to find out, which the constant steps that are always followed, and which the infrequently followed steps are. The analysis of this section would be based on each step used in the product development process.

Step (a), Market research is often used by 47% of respondents. Step (b), Brain storming is used often by 36% of respondents, used occasionally by 34% of respondents and used seldom by 25% of respondents. Step (c), Formal ideas screening is used occasionally by 59% of respondents and often by 26%. Step (d), Concept paper is used often by 60% of respondents and always by 27% of respondents. Step (e), Approval of concept paper by the Shariah supervisory committee is used always by 68%, used often by 19% of respondents and used occasionally by 10% of respondents.

Step (f), Preparing detailed product definitions/business case paper is used always by 52% of respondents, used often by 24% of respondents and used occasionally by 19% of respondents. Step (g), Approval of the detailed product definition paper from a business sounding perspective by the relevant committee is used always by 66% of respondents, used often by 15% of respondents and used occasionally by 10% of respondents. Step (h), Ensuring that product documentation complies with Shariah standards, such as AAOIFI Shariah Standards is used always by 51% of respondents, used often by 27% of respondents and used occasionally by 17% of respondents.

Step (i), Obtaining Shariah approval from the Shariah supervisory committee is used always by 81% of respondents and used often by 10% of respondents and much less frequently by the remaining respondents. Step (j), Developing the IT system and operational processes and procedures is used always by 37% of respondents, used often by slightly more number of respondents 47% and used occasionally by 10% of respondents.

Step (k), Product testing is used always by 41% of respondents and is used often by 50% respondents. Step (l), Training staff on the newly developed product is used always by 27%, used often by 52% of respondents and used occasionally by 15% and much less frequently for the remaining respondents. Step (m), Post launch review is used always by only 10%, used often 56% and used occasionally by 27%. Finally, step (n), Auditing the newly developed product from a Shariah perspective is used always by 83% of total respondents, used often 5% and used seldom by 7% of all respondents.

c. Product definition

Financial institutions, usually, prepare a document defining the new financial innovation or product intended for development. This process also followed by IFIs, however the components of the product definition document for IFIs would differ, as it has to address the Shariah compliance structure and requirements of the new product. This is discussed below.

Table 9.13: Components of the product definition document

Components of the Definition Paper	Total (% & Count) 100%	(61)
Market research (products on offer, pricing, products specifications etc.)	84%	51
Consumer analysis and market segmentation	8%	49
Explanation of how the new product will fulfil consumer's needs and demands	8%	49
Documentation describing product nature, benefits & features	89%	54
Identifying the main objectives of the new product	85%	52
Customer and business risk analysis	85%	52
Operational impact analysis	80%	49
Legal & regulatory requirements	82%	50
Identifying the main objectives of the new product	11%	7
Other, please specify	3%	2

This section aims to describe the main components that respondent IFIs included in the definition/business case paper of new financial innovation. It asks them to tick all relevant boxes that relate to the item they include in that paper. Their answer would provide an insight into what the main components of a new product development definition paper are, as this would help in formalising a possible framework for financial innovation and engineering. This will satisfy one of the main research objectives.

It is clear from the findings presented in Table 9.13 above that the majority of respondents, an average of 86% of total respondent banks, include the following components in the new product development definition paper:

- Market research, (products on offer, pricing, products specifications).
- Consumer analysis and market segmentation.

- Explanation of how the new product will fulfil consumer's needs and demands.
- Documentation describing the product's nature, benefits & features.
- Identifying the main objectives of the new product.
- Customer and business risk analysis.
- Operational impact analysis.
- Legal & regulatory requirements.

However, only 11% of respondents include the last component, 'identifying the main objectives of the new product', in the product development definition paper. This component is very important as it measures the objectives of developing the new products against the Shariah objectives. It also states whether those objectives consider a broader perspective and the society as a whole, and whether this new financial product would benefit and be useful to everyone involved.

d. Shariah compliance structure and assurance in financial innovation

Each financial innovation would require the use of different Islamic finance principles as the basis of its structure. However, there is not a one size fits all in that regards, as each Islamic finance principle has its own features and characteristics that would not be appropriate for all product structures. Therefore, a suitability metrics or criteria of the chosen structure should be outlined and approved. This is explored in this section.

Table 9.14: Basis on which respondents IFIs decide the most appropriate Shariah structure

Basis of Appropriate Shariah Structure	Total (% & Count) 100%	(61)
The structure that provides the most protection to the institution	21%	13
The structure that provides most protection to the customer	0%	0
The same structure as most other institutions in the market	3%	2
The structure that provides the best fit from a Shariah perspective	25%	15

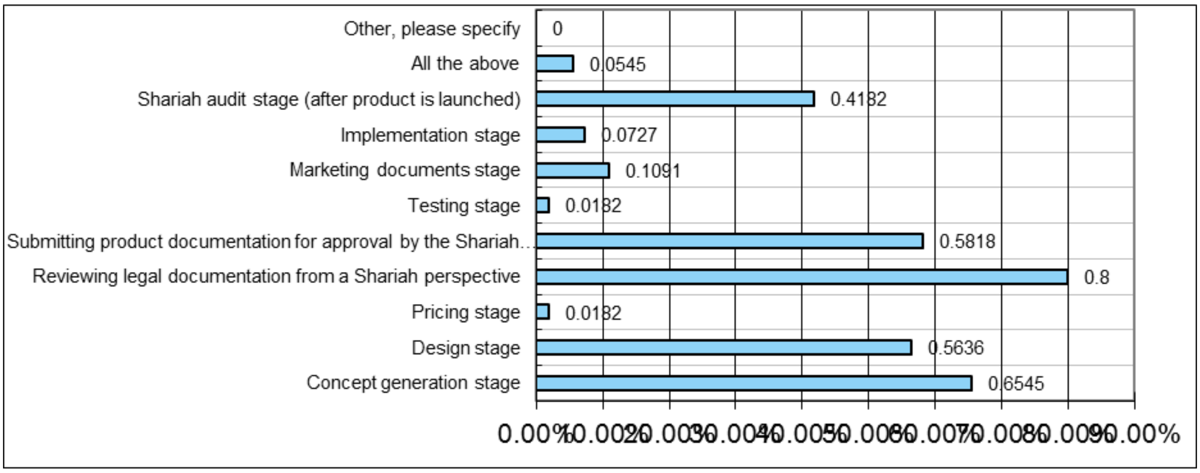
The structure that brings in the highest yield compared to its cost	2%	1
A combination of the above	48%	29
Other, please specify	2%	1

This section has provided an idea of what drives the decision of an IFI to choose a certain Islamic finance structure for a new product over others. Some Islamic finance structures for developing new financial products may be less risky, but are not encouraged or preferable from a Shariah compliance perspective, as they may not represent the essence of the profit and loss sharing concept in Islamic finance.

48% of respondent banks said that the decision on the most appropriate structure would be based on a combination of the listed options in Table 9.14 above. Thus, their decision would be based on a structure that provides protection to the bank and the customer; also a structure that is already available in the market, which is a profitable structure to the bank as well. But, at the same time is the best fit structure from a Shariah compliance perspective. Also, 25% of respondents singled out the option of providing the best fit structure from a Shariah perspective as a determining factor for their decision. 21% of them give priority to the structure that offers the best protection to the bank, and 3% would use the structure that is widely used in the market by other Islamic financial institutions.

This approach might explain the widespread *Murabaha* (cost plus profit contract) structure and *Tawarruq* (monetisation), which are not favoured in Shariah, to develop new financial products in the Islamic finance industry as the most common structure. It also limits the scope of financial innovation in the Islamic finance market. It is worth noting that none of the respondent banks singled out the option of choosing 'the structure that provides most protection to the customer' as a driver of their decision. However, the majority of respondents said the decision is based on a combination of the provided options, which include protecting customers.

Figure 9.2: Level of involvement of the internal Shariah compliance function in the financial innovation process



The level of involvement of the Shariah compliance department in IFIs in the product development cycle shows the level of Shariah governance, ensuring that all Shariah requirements are considered across all stages of the product development cycle as shown in Figure 9.2. It is important to note that respondents can tick all the stages that the Shariah compliance department/person is involved in.

This would provide an insight into current practices of Shariah control in the product development process as practiced by IFIs. 80% of respondents said that the Shariah compliance department/individual is involved at the stage of reviewing legal documentation from a Shariah perspective, which takes place before the review of the Shariah Supervisory Committee. This is followed by 65% of respondents who said that it gets involved at the concept generation stage. 58% responded that involvement happens at the stage of submitting product documentation for approval by the Shariah Supervisory Board/Committee.

56% responded that involvement occurs at the new financial product design stage, followed by 41.82% at the Shariah audit stage (after the product is launched), followed by 11% at the review of marketing documents stage is when the involvement takes place, and finally, 5.45% stated that the Shariah compliance department/person is involved in all stages specified.

Table 9.15: Types of post-implementation reviews for compliance assurance

Types of Post-Launch Review	Total (% & Count) 100%	(61)
Review of product profitability	89%	54
Review of sales target	52%	32
Review of pricing	79%	48
Review of policies and procedures	36%	22
Review of Shariah compliance	52%	32
Review of defects in the product's ability to meet consumer needs	64%	39
Other, please specify	2%	1

This section describes the types of post-launch review of the financial product that IFIs undertake. There is no guarantee that when the financial product is launched, it will work exactly as planned. There are different elements that could change just before launching the products or immediately after, such as regulatory changes, market shift, defects in the product, system issues, Shariah issues in the implementation of the product, or pricing and profitability issues.

Respondent banks were asked to tick all applicable review types, 89% of them review the profitability of the product and whether it is in accordance with the financial modelling and budget or not. 79% review pricing of the products and the need for any adjustment in line with the market movement. 64% of respondents also review the product for any defects in meeting customers' needs, as any defect will slow and reduce the take up of the newly launched product. 52% of respondents undertake the post launch review to check for any Shariah compliance issues in the implementation of the product and a review of sales targets. 36% of respondents also review the effectiveness of any policies and procedures relevant to the newly launched financial products. The post-launch review of the developed financial innovation/product is something healthy and recommended in the financial institution to ensure better delivery of new financial products.

9.2.4 Challenges in Financial Innovation

Some of the challenges in financial innovation are shared between traditional financial institutions and IFIs, and others are specific to IFIs due to their religious orientation and the role of Shariah as a boundary object in the financial innovation process. Those challenges are explored below in the following sub-themes.

a. Availability of resources for financial innovation

Resources are not always adequately allocated to address the need of a new financial innovation. This is, perhaps, due to various factors such as cost, budget, technological advances and people with the required Shariah compliance knowledge and skills for structuring financial innovation. The table below shows IFIs' views regarding this issue.

Table 9.16: Availability of resources for financial innovation

Level of Allocation	Financial (budget)		People (knowledge, skills, etc.)		Technology		Total (% & freq col) 100%	(61)
Nothing specifically allocated	33%	20	45%	27	22%	13	100%	60
Allocated subject to requirements	35%	20	37%	21	28%	16	100%	57
Specifically allocated	36%	20	20%	11	45%	25	100%	56

This section aims to gauge the level of allocated resources by IFIs in relation to financial product development for three specified categories. The three main areas that are essential for the development of financial innovation are financial budget, people, and technology. The answer also shows the level of planning and importance given by IFIs to the development of new financial products, and also finding out whether each of the three categories are not allocated, allocated subject to requirements or specifically allocated.

For the ‘specifically allocated’ level, there is more attention given by respondent banks to system capability/technology 45%, than to financial budget 36%, and lastly to people and required skills. This indicates that the system and technological capability of an IFI is the main driver for new financial innovation and product development. This means system technology is a key ingredient in the financial product development cycle, and the success of the delivery of a new financial product, due to the attention given to that element by IFIs, is subject to that technological capability.

b. Existence of a specialised function for financial innovation

The existence of a dedicated function of financial innovation and engineering in IFIs might be affected by different constraints, such as cost, budget and size of the IFI. This issue is explored below by examining different approaches taken by IFIs to address this challenge.

Table 9.17: Existence of a specialised function for financial innovation in the respondents' institutions

Existence of NPD function	Total (% & Count) 100%	(61)
Yes	84%	51
No	16%	10

This section explores whether there is a dedicated specialised product development department/team in the IFI or not. The majority of respondent banks 84% have a centralised product development department in contrast to 16% who do not have a product development function. This is explored further in the next section.

C. Approaches adopted in the absence of a specialised product development function

IFIs addressed the challenge of not having a specialised function for product development, due to various reasons, by adopting certain approaches. Those approaches are outlined below.

Table 9.18: Different approaches taken in the absence of a specialised product development function

Functional Responsible for Product Development in the Institution	Total (% & Count) 100%	(13)
Marketing Department	8%	1
Internal Shariah Compliance Officer/Controller	15%	2
Strategy/Planning Department	23%	3
Research & Development Department	31%	4
Other, please specify	23%	3

Respondents who stated that they do not have a dedicated function for product development, have provided more details on whom or which function provides that role in this section. 31% of those (16% respondents), who answered 'No' in the previous section, stated that this role is covered by the research and development department. 23% stated that this role is done by the strategy/planning department and 15% said the Shariah compliance officer covers this role. 23% answered others, and their comment was that, this role is done by a specified committee and 1 respondent said it is the Shariah supervisory committee. The answer to this question would gauge the level of governance around the product development cycle and how appropriately it is controlled.

d. Perception of key barriers for Shariah compliance financial innovation

IFIs are usually criticised of not going beyond Shariah compliance to meet the spirit of Shariah in relation to their financial products. This could be due to different barriers that they may face in the process of financial innovation and engineering. Those key barriers, as perceived by IFIs, are explored in this section.

Table 9.19: Perceptions of key barriers for fully Shariah compliant financial innovation encountered by respondents IFIs

Key Challenges	Total (% & Count) 100%	(61)
Shariah Scholars' lack of knowledge about banking products and operations.	43%	26
Resistance of Shariah Scholars to new, contemporary applications of Islamic finance.	7%	4
Shariah is not flexible enough to accommodate and provide solutions for contemporary financial needs.	3%	2
Innovation is not encouraged in Islam as it is considered as creating something that is not from Shariah.	2%	1
Lack of understanding of the risks associated with Islamic finance products.	59%	36
Lack of research in the area of Islamic product development.	87%	53
Costs associated with developing new innovative products.	21%	13
Legal, tax and regulatory constraints for Islamic financial innovation and products.	82%	50
Other, please specify	5%	3

Identifying the problem is the first step towards finding a solution for it. Therefore, it was important to learn from the respondents what they think is the main challenge facing Islamic financial innovation. Their responses varied and identified different factors as being hurdles. 87% of respondents cited a lack of research in the area of financial innovation and product development.

This paucity of research might be due to having to accommodate already pre-existing financial needs in the market, needs which have been created by the current conventional financial system. To promptly address this, it was concluded that Islamic banks had to reengineer those conventional products in a Shariah compliant way, under market pressures, instead of influencing the market with new financial innovation.

82% believe legal, tax and financial regulations are the main challenge for financial innovation initiated by Islamic banks. This is may be because of the lack of awareness by the relevant authorities of the structure and requirements of Islamic financial innovation that is different from the conventional counterpart.

Hence, IFI have to go through the same issues with any financial innovation or product they develop, because the current system is not, by default, readily familiar with it. Such challenges are e.g. double taxation treatment, charging VAT on commodities traded as an underlying asset of financial products and the structure of legal agreements (Archer, 2007).

59% of respondents believe that a lack of understanding of the Islamic finance principles and their risks is also one of the main challenges and could be the reason for not exploring and trying different financial innovation. They tend to stay on the safe side by using products and financial principles that they are familiar with them and their risks profile.

Another major challenge according to 43% of respondents is the Shariah scholars' lack of knowledge about banking and their operations, which potentially according to this view, might render some of their suggested solutions impractical for implementation by IFIs. However, it could be argued that, it is not their responsibility to ensure that whether the suggested solution could be implemented or not, IFIs should explain to them this aspect and what could be implementable as a solution in that scenario.

Furthermore, costs associated with new financial innovations or products are to some extent a challenge, according to 21% of respondents. Due to their requirements and structure, the cost of developing Shariah compliant financial products is believed to be higher than their conventional finance counterpart according to the perception of the respondents IFIs. This would put Islamic banks in a disadvantaged position.

9.3 Conclusion

This chapter analysed the primary data collected through the questionnaire survey. Out of a sample of 150, 61 (41%) Islamic banks completed the questionnaire. Given the small size of the Islamic finance industry and tha the number of IFIs around the world is not known precisely, the best estimate by various market reports is that there are around 300 financial institutions offering Islamic finance products. This includes banks, traditional banks with Islamic windows offering few Shariah compliant products, *takaful* operators, fund managers and joint ventures. Achieving this number of respondents is very satisfactory and exceeded the expected outcome. The respondent banks confidently represented the population of IFIs, as they consisted of 61 Islamic banks, based in 21 countries and spread over 4 continents (Asia, Africa, Europe and North America).

The descriptive and exploratory statistical analysis conducted in this chapter revealed the important elements and practices in the Islamic finance industry in relation to financial innovation and engineering. It further provided an account of the conduct, steps, processes and considerations in relation to financial product development in Islamic banking and the relevant Shariah governance. Shariah is in the core of the Islamic banking operations however, its vision and parameters are interpreted by IFIs in different degrees according to certain variables and influencing market factors.

There is a strong view by respondents that Shariah could offer a full Islamic economics and finance system that is free from interest and other prohibitions in Islam, and which incorporates Shariah requirements. This view is shared among all respondents to different degrees, envisaging that Islamic finance would be able to acquire a significant share of the market in the near future. They also emphasised the importance of Shariah and its governance in their institutions, although that emphasis might be influenced by other factors in the market according to current practices. There is to some extent a gap between what respondent banks view in relation to Shariah and the actual practices on the ground, which in any case fulfils Shariah requirements, but might not extend beyond the basic Shariah requirements.

The findings, from the analysis of the collected data through the questionnaire survey, would greatly help in developing a possible best practice framework for financial innovation and engineering from an Islamic perspective that incorporates the role of Shariah as a shared boundary object. The findings of the analysis of the questionnaire data is strengthened by the findings from the interviews as discussed in the following chapter (Chapter 10). The primary data collected and its findings that are presented in this chapter would form the structure for the theoretical and empirical framework of financial innovation and engineering that is needed for the Islamic finance industry. The findings were also used to design and structure the interview questions to explore certain issues further and more in-depth.

Chapter 10: Analysis of Data Collected via Interviews

10.1 Introduction

The previous chapter (Chapter 9) provided an analysis and the findings of the primary data collected through a survey. The survey questionnaire is conducted in order to provide an insight into financial innovation and engineering practices in IFIs. This chapter provides an analysis of the semi-structured interviews that have been conducted with key Islamic finance experts and influential Islamic scholars in the Islamic banking and finance industry. As the interview method is qualitative in nature, it involves analysing and interpreting the answers given by the interviewees to their exact meaning. The aim is to ascertain if the responses of the interviewees can contribute to the basic objective of finding relevant, authentic, reliable and satisfactory answers to the main research questions and their sub-questions.

This chapter provides more in-depth insight to the two main research questions and their sub-questions as detailed in Chapter 1, section 1.9. It also focuses on finding more insights into issues emerged from the analysis of the data collected in the questionnaire survey (Chapter 9) in relation to the theoretical framework of religious orientation, and the role of Shariah as a boundary object, towards financial innovation and engineering. Also, articulating what constitutes this theoretical framework from a religious perspective in Islamic finance.

The emerged themes are presented in the next sections with analysis of the themes and their sub-themes by linking them to the relevant theories. The findings of the data analysis in this chapter substantially contribute towards developing the proposed theoretical and empirical framework for financial innovation and engineering from an Islamic perspective (see Appendix 2). Conclusions are drawn at the end of the analysis in the last section of this chapter.

10.2 Bankers' View on Economic Activities and Financial System in Islam

Islam as a way of life addresses many issues related to life and conduct, such as creed, belief, worship, civil matters, international relations, governing and economics and finance. The philosophy of economics in Islam is based on sharing economic resources, the moderate use of those resources and maintaining social justice of all resources and its distribution, as it was discussed in Chapter 6. It recognises individuals' rights and protects their wealth, but observing at the same time social welfare and benefit of society. Islamic finance and its ethics emerged from this economic philosophy.

Some, however, (Ramadan, 2009) argue that 'Islamic economy' does not exist and if we look into it differently, we find a set of principles for an ethical framework. These ethics are a general philosophy of the economy's aims, but there is nothing called an 'Islamic economy', it is just mere ethics that govern business transactions. All interviewees disagreed with the above statement, when they were asked about their views. One interviewee replied as follows:

> *Those who claim that (i.e. there is no Islamic economics and finance), believe that economics is an abstract science like mathematics, therefore it is not right to say that there is an Islamic mathematics and conventional mathematics, so, they use this analogy for economics and hence, they deny the existence of an Islamic economics. This analogy is not correct, because economics is not an abstract science; it has its theory, philosophy, ethics and religious affiliation. Therefore, every nation has their own characteristics from that perspective and Muslims have their economic principles, philosophy, theory and ethics which are based on their religion. (Shariah scholar, AAOIFI Shariah Board(5)).*

Another interviewee said:

> *The principles of conventional economics are based on profitiration and when it faces many challenges in its application and approach, conventional economics had to address the ethical issues and focus on their relevance. Our religion has an ethical dimension that is embedded in everything we do. (Shariah scholar, AAOIFI Shariah Board(6)).*

Islamic economics and finance cannot be implemented in isolation of other Islamic principles and philosophies, otherwise it will be incomplete. This is important for a meaningful application of Islamic finance. Financial innovation and engineering and the way Islamic banks operate should incorporate the philosophy of Islamic economics and finance. Development and financial innovation or product should be based on its theories, as mentioned above, such as originality of all matters are to be permissible, Shariah objectives, social good and *dhamaan*.

> *Shariah focuses on self-supervision as man follows Shariah voluntarily as a Muslim and he will be doing an act of worship when he follows Shariah in his financial transactions. Thus, financial dealings and activities are part of the religion similar to other aspects of worship, it all flows from the overall arching philosophies and principles. (Islamic finance expert, al Qaseem University, Saudi).*

Financial activities in Islam cannot be viewed in isolation from other Islamic principles and economic theories and philosophies. An honest financial dealing is part of worship where the person would be rewarded by God in Islam. Shariah is the (divine) judging criterion for an issue to be considered ethical or not, even if all people agreed that an issue is accepted as being ethical. This is because what is seen as being ethical could be driven by our own personal subjective interest. Such as charging/paying interest, this is considered in Islamic finance not ethical, unlike other societies and economic thoughts and theories.

As humans, people are driven by their desires and personal motives, and in order to feel good about what they do, they seek a comfort by leaning on an ethical value. This aspect of human's desires and behaviour is described in the Qur`an, "Beautified for people is the love of that which they desire of women and sons, heaped-up sums of gold and silver, fine branded horses, and cattle and tilled land. That is the enjoyment of worldly life, but God has with Him the best return". (Qur`an, 3: 14). When people disagree about what they think is right according to their interest and desire and what is actually right, they would need neutral judging criteria. Therefore, the Qur`an says: "… And if you disagree over anything, refer it to God and the Messenger, if you should believe in God and the last day". (Qur`an, 4: 59).

However, who decides whether an act or a financial product is ethical or not. Even if a group of people practiced that act or accepted that financial product, it does not mean it is ethical. The assessment could be done by examining what drives this sort of behaviour and e.g. the objective of launching a financial innovation. A non-smoking person, e.g. who happened to share a place with a group of smokers is out-numbered, and may be perceived as the odd person within that group.

Although, he or she embraces the right behaviour for his or her health by not smoking. This is how an interviewee expressed his view about this issue:

> *Therefore, in deciding about something being ethical or not, I would ask about the criteria, is it our overall interest because we say so, or there is a divine criteria that supersede any other. So, Shariah is the judge, if we say Islamic finance is ethical, that because it observes the ethical principles according to Shariah, but this does not mean that everything perceived as being ethical is Islamic. (Shariah scholar, Head of Shariah at Abu Dhabi Islamic Bank).*

Hence, there is a need for a superior power that defines the criteria for assessing what is good and what is not, how we can judge a financial product to be ethical and providing social good from other financial products that could bring harm. This is provided by Shariah in the case of Islamic finance. This is what Adam Smith (1789) refers to as the 'invisible hand'. Smith's theory originated in the 18th century, when he described his theory about the 'invisible hand', in the context of a very simple and basic financial market. It should be noted, in order to provide a balanced view, that Smith's theory is contested by other views who may disagree with it. The financial market and products have substantially evolved since then and have become more complicated and sophisticated.

10.3 The Perceived Necessity of Islamic Banking and Institutions

The existence of financial institutions that comply with Shariah is required to address financial needs in the market. This institutional existence is perceived to be required in accordance with the theory of *'wajib Shar'i'* (Malik, 1951 and Al Sharbini, 1957), which literally means 'required by Shariah'. This theory is based on the concept that the existence of an Islamic financial institution, which serves the financial needs of a society, is a religious duty. If a group in the society satisfies this duty that will suffice the rest. However, if no one in the society addressed this need or satisfies it, Shariah and the society consider it sinful until it is satisfied.

> *A Muslim should follow Shariah in each and every part of his/her life, therefore, the existence of Islamic banks is wajib shar'i (required by Shariah). Hence, Islamic banking is an alternative rather than a competitor to conventional banking system, it is there to fulfil a Shariah requirement for Muslims and also for non-Muslims who wish to use their products. (Shariah scholar, Chairman of the Shariah Supervisory Committee of the Islamic Bank Palestine).*

It is believed that without this institutional existence of Islamic banking, Islamic finance industry would not have developed. Douglass North (1971), in his work relating to economic and institutional change, discussed economic change influenced by institutions. North defines institutions as 'humanly devised constraints that structure political, economic and social interactions'. Constraints are devised as formal rules (constitutions, laws, controls and Shariah requirements in the case of Islamic financial institutions) and informal restraints (sanctions, taboos, customs, traditions, code of conduct governing the offering of financial products), which usually contribute to the perpetuation of order and safety within a market or society.

10.4 Coordinating Shariah Approval for Financial Innovation in IFIs

Islamic banking is perceived to work in a unique way because of the way financial engineering is structured and the approval process of new financial products. Islamic scholars at various levels play an important role in the approval process. At the first level, the biggest body that represents Islamic scholars from all over the world is the Islamic *Fiqh* Academy (IFA), which brings together around a maximum of 300 (estimate) Islamic scholars on different levels of knowledge. IFA takes relatively long time to reach a decision or *fatwa* (Shariah legal opinion) about an issue related to Islamic finance. This is due to its lengthy rigours process.

On the second level there is the AAOIFI Shariah Board, representing institutionalised religious rulings at a global level. It consists of a maximum of 20 scholars and is divided into 4 committees. Each committee looks after certain tasks. AAOIFI sets Shariah, accounting, auditing, governance and ethics standards for the Islamic finance industry. If a decision is made by AAOIFI contradicts earlier one made by IFA, AAOIFI would refer the issue to the IFA.

On a more micro level, each Islamic financial institution has to have a Shariah supervisory committee, usually between 3-5 scholars, with a minimum of 3 Shariah scholars. This committee may deal with specific issues relevant to that financial institution, and sometimes the *fatwa* issued by that committee may contradict or is not in accordance with a decision or *fatwa* issued by IFA or AAOIFI.

Islamic banking currently works as an inverted pyramid, there are around 300 scholars from all over the world in the Islamic Fiqh Academy, it takes them 4 years to make a fatwa, not because they are very slow, but because they allocate the task of reaching a solution for the issue to 15 of them, each one of whom will tackle an aspect of the issue in question. (Islamic finance expert and practitioner, Nizwa Bank, Oman).

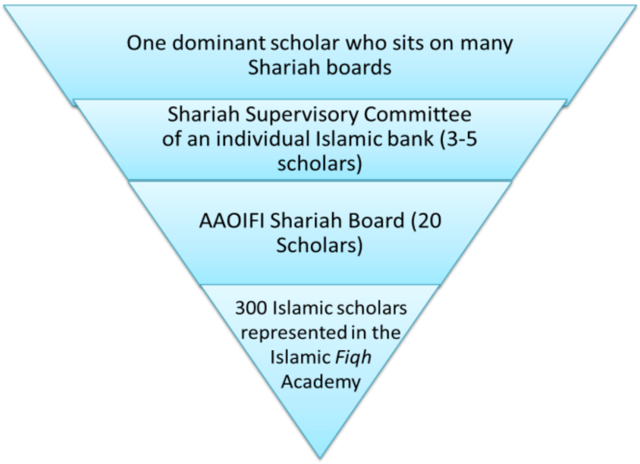
10.4.1 The Inverted Shariah Approval Process

Scholars in the Islamic finance industry highlighted the importance of financial engineering in financial innovation process. An Islamic financial innovation requires financial engineering in order to implement a financial product, as represented in a Shariah scholar's view below. This could be achieved by using certain instruments, in order to meet a real financial need of people and provide a financial benefit to the society in accordance with the Shariah criteria and framework.

Islamic banking currently works as an inverted pyramid,… In every Islamic institution there is a Shariah committee of between 2 to 5 scholars and their opinion or fatwa to be given to that institution overrides the one issued by AAOIFI. This explains what I referred to as an inverted pyramid, instead of following the fatwa issued by 400 scholars, eventually the opinion adopted is the one issued by the Shariah supervisory committee of that Islamic financial institution and not the majority consensus (ijma'). So, if this scholar who influenced the opinion of the committee of that Islamic financial institution is on the committee of 100 others and he applied the same ruling to all 100 Islamic financial institutions, however, that opinion was found to be wrong, but in a good faith, then a large proportion of the industry will be following that opinion. (Islamic finance expert and practitioner, Nizwa Bank, Oman).

The fatwa issuance process in the Islamic finance industry is illustrated in Figure 10.1 below. Figure 10.1 depicts an inverted pyramid in the process of making a Shariah legal opinion regarding a matter related to financial innovation and engineering. If one scholar on that committee is more dominant and charismatic than the others, his view regarding a financial innovation or engineering would dominate the views of other Shariah scholars in that committee.

Figure 10.1: Inverted pyramid of Shariah legal opinion issued in the Islamic finance industry



As a result, a *fatwa* would be issued to that financial institution based on the view of this influential Shariah scholar. Furthermore, if that dominant Shariah scholar sits on numerous Shariah supervisory boards for other financial institutions, assuming that his view on that particular issue is incorrect, and then this view is transmitted to those other financial institutions, what would be the impact on the Islamic finance industry.

Therefore, the process of issuing a fatwa moved from main bodies, such as IFA and AAOIFI to an individual charismatic and influential Shariah scholar. This concern was raised by an interviewee when he highlighted how a collective decision can be swayed by another Shariah opinion issued by an influential Shariah scholar, who influences many Islamic banks. Another issue was also raised by an Islamic finance expert, he said:

If I developed a product that is fully based on and structured according to Shariah requirements, then introduced it to the market, the product will not sell. The reason for that is because customers do not want to take an asset risk, or a price fluctuation of the underlying assets. The market wants a product that guarantees the principal amount and gives a return regardless of the structure. Therefore, we will have to make concessions and reduce the standard to the market demand and possibly mimic the conventional products, and this is what raises the problem. (Islamic finance expert and adviser, UK).

Hence, there is a market influence about the financial products that are introduced by Islamic banks. The Islamic finance industry needs to educate the market about the structure of Shariah compliant financial products and possible benefits to customers and the wider society in comparison to existing traditional financial products in the market. This, however, would require some empirical research to explore this issue in-depth.

10.5 The Role of Shariah as a Shared Object in Financial Innovation

Islamic banking revolves around financial innovation; it is believed, as some interviewees Islamic scholars stated, to have around 12 different contracts as opposite to one loan contract, which its counterpart, the traditional banking system, uses. Financial innovation is encouraged and practiced throughout the Islamic history, *'the use of bait al maal (state treasury) and the system put in place at the time of Umar Ibn Al Khattab is a financial innovation'* (as one Shariah scholar put it). However, there must be a way to ensure this encouragement for financial innovation is not abused and is monitored. This dynamic role of Shariah was conceptualised in Figure 7.3 and was expanded with further details in Appendix 2, Figure A2.1 and A2.2.

10.5.1 Shariah rules in financial matters

Financial innovation would require some essential tools and equipment of certain Shariah sciences that help reaching the right conclusion. This is because financial innovation from a Shariah perspective is based around what is permissible and what is not under Shariah. The Shariah requirements stipulate that financial innovation and engineering must avoid all prohibitions in order to serve societies in different times and locations.

Therefore, there are controls and steps should be taken in order to achieve that aim. Any financial innovation should ensure that it does not become the backdoor for achieving anything that is prohibited under Shariah. It should not e.g., as Al Sarkhacey (1978) mentioned, be a way around charging interest in a financial transaction or engineering a financial product that leads to this end. An Islamic finance practitioner highlighted this issue by stating that Shariah scholars are most capable to innovate in Islamic finance and lead on that:

> *Qualified Shariah scholars are a key factor for financial innovation and engineering. They understand the Shariah rules and how they can be implemented in order to develop new financial innovations, which is very important. However, this knowledge should be complemented by understanding finance and banking as well. They are very busy as they supervise many banks at the same time and do not have any time to train and develop new generation of qualified scholars. Therefore, the human factor is very important for financial innovation in the Islamic finance industry with the support of other professionals. (Islamic finance expert, Nizwa Bank, Oman).*

It is stated in *usul al fiqh* that 'originality in all matters are to be permissible', therefore, any person can innovate within those rules that are set out by Shariah. This theory i.e. the original permissibility of all matters (Al Zaraqa, 1968; and Qutub, 1974) is the basis for any financial innovation that exists or could exist in the future, however, there is a rigours process for the implementation of this theory in order to innovate.

This will lead to the conflict between two key concepts, 'the originality in all matters is to be permissible' and 'avoiding what is prohibited takes a precedent over bringing the good'. Therefore, the judging criteria that an Islamic scholar should consider, in that regard, is giving a priority to avoiding harm to the society as opposite to bringing good, when there is a conflict between the two theoretical concepts. This was a shared view among many of the interviewees, as an interviewee stated:

> *A Muslim should follow Shariah in each and every part of his/her life, therefore, Islamic banking is an alternative, rather than a competitor, to the conventional banking system, it is there to fulfil a Shariah requirement for Muslims and also for non-Muslims who do not wish to deal with riba, because riba is a danger that is threatening mankind. A Muslim should free himself, his family and business from any usurious dealings as a priority to block the haram before bringing in a good. (Chairman of the Shariah supervisory committee, Dubai Islamic Bank, UAE).*

There are three pivotal factors that are required for financial innovation as emerged from the findings of the interviews analysis, the technical factor, personnel factor (qualified experts and true representation) and the market factor. These factors should be put together in order to be able to produce something that truly represents Islamic finance. The lack of qualified experts who are versed in both Shariah and financial matters is a key weakness in the Islamic finance industry.

Also, there is not enough technological deployment and supported research for financial innovation. Moreover, the market is not matured yet and there is a lack of education and awareness of Islamic banking, as some interviewees pointed out. Thus, there are some important elements that need to be considered in additions to the Shariah rules for financial innovation and engineering in Islamic finance. A religious orientation towards financial innovation is not enough on its own.

10.5.2 Constant Shariah rules in relation to financial matters

The importance of understanding the theory of constant Shariah rules (*al qwa'ed al Shar'iyah al thabitah*), in particular those relate to financial matters emerged from the analysis of the interviews. Those rules are universally accepted rules among all, or at least most, Islamic schools of thought and Muslims, they are known to remain the same unchangeable regardless of place or time.

Al Zaraqa (1968: 924-926) and Qutub (1974: 83) demystified this theory and its application in life on a very high level. They stated that the constant divine rules are universal amongst all religions, not only Islam, such as believing in one God, His messengers, establishing justice, honesty, truthfulness, enjoining the good and forbidding the evil, matters are according to their objectives, harm should be removed and the prohibition of usury. This is how one interviewee explained it:

> *If we study the Qur`an, we find that it mentions general comprehensive constant rules without going into details. This is based on a divine wisdom to address issues regardless of place or time. The Qur`anic expressions show that it extends to any time in the future even if its application changes over time, e.g. riba (usury) now has different forms and shapes, it is also used by different people and on various levels. Nonetheless, that does not change the Shariah ruling about it. Therefore, we need accurate components of qua'id usuliyyah (principles of fiqh) that encompass all aspects including linguistic understanding and careful consideration of the Shariah objectives. (An interview with a Shariah scholar from the AAOIFI Shariah Board(1)).*

Any development in Islamic finance transactions, whether in relation to financial innovation and engineering or finding a financial solution, must observe the Shariah constant rules as an overarching umbrella, in order for it to be acceptable. This is, however, currently done on an ad hoc basis as the appropriate framework is absent. Therefore, the Islamic finance industry is fully dependent on Shariah scholars, involved in various Shariah supervisory committees, in highlighting and enforcing that aspect to some extent.

10.5.3 Shariah Instruments for Financial Innovation and Engineering

There has been some ambiguity, which emerged from the survey's findings in Chapter 9, about the instruments that could be used for the development of a financial innovation with Shariah orientation and its processes. Those potential instruments, as emerged from the interviews analysis, have been identified and explored within this section below. The initial understanding is that those instruments are not any different from what an Islamic scholar uses to deduct a Shariah ruling related to, e.g. an aspect of worship. The same methodology would be used for initiating a financial innovation or examining and judging whether a financial innovation is acceptable or not under Shariah.

Instruments that could help in developing financial innovation and engineering are the Qur`an, *Sunnah*, *Ijma'* (consensus of qualified Islamic scholars regarding a financial matter), *qias* (analogical reasoning), *ijtihad* (individual scholarly interpretation), *istihsan* (approving something on the basis of the common good, the Hanafi school equivalent of social good), *al masaleh al mursalah* (common good) and *bab sad al tharae'* (blocking legal tricks and causes of prohibitions). A Shariah scholar illustrated the use of the above instruments in the following way:

> *The Qur`an and Sunnah are limited texts, but some texts may have different interpretations as their meaning is not definite. These interpretations, however, may differ and change according to time and place. Ijma' might be very difficult in our time, some Islamic scholars, such as Imam Ibn Hanbal and Ibn Hazem said that ijma' after the time of the companions of the Prophet is impossible. Regarding qias, qias is a very important and principal instrument for financial innovation. Other instruments also are important such as Istihsan, which could be according to the text or to the maslaha (social good) and Istihsan according to maslaha is more important. Both of them are very important instruments for many reasons, Islamic scholars are not able to use the other instruments mentioned these days. Qias e.g. requires a lot of studies researching its rationale which is a complicated analytical process. (Shariah scholar, Qatar Foundation).*

Qur`an and *Sunnah* have provided the constant Shariah rules from which we can derive other rules as long as there is not any contradiction. The basis for using one's efforts to employ logical reasoning, own interpretation of an event or Shariah rule, analysing its rationale in order to derive a new rule to address a financial matter or develop a financial innovation flows from those Shariah instruments.

> *All Islamic finance principles and instruments are considered to be a type of financial engineering, because they involve other tools such as the inclusion of a promise and a pledge in the core contract. This, in itself, is a form of financial engineering, an example for that would be the Murabaha principle. The engineering of this principle is supported by other tools such as an agency, a promise and collateral to achieve its purpose; this is the concept of financial engineering. (Shariah scholar from the AAOIFI Shariah Board(1)).*

The process of financial engineering would require the use of 2 or more Islamic financial instruments or principles in order to achieve the desired outcome of the financial innovation, as described in the interviewee's view above. Many Islamic financial products are based on the use of 2 or more financial instruments, e.g. the use of the diminishing *Musharaka* (co-ownership) with lease to offer a home finance product, which would also include an agency agreement and a legal charge.

10.6 Application of a Shared Object: Applying *Maslaha* as an instrument for financial innovation and engineering

Maslaha (common good) is the most powerful instrument, *maslaha* is concluded by studying the Shariah text, however there is a potential that it could be misused as a tool. Islamic scholars have researched the theory of *maslaha* under Shariah (Suliman, 1898; Al Nadawi, 1993 and Al Buti 2005) with the objective of ensuring it is not going to be misused in the process of developing a financial innovation or other matters. *Maslaha* is a very powerful concept for financial innovation and engineering; this was highlighted by a prominent Shariah scholar as follows:

> *If all the required conditions for maslaha are met, it will be the best and most appropriate tool for financial innovation and engineering. (Shariah scholar, AAOIFI Shariah Board (2), Bahrain).*

This has led them to come up with Shariah controls for the use of *maslaha.* Thus, It should be part of the Shariah objectives, it should not contradict the Qur`an or *Sunnah*, it also should not contradict *qiyas* and it should not dismiss another *maslaha,* which is more important or equal to it (Al Buti, 2005: 25-35). The above controls for the employment of the concept of *maslaha* should be carefully considered in the process of financial innovation and engineering, in order to be acceptable.

The main control for *maslaha* as a tool is that, it should not contradict Shariah and its text; it should be also a real *maslaha* and benefit and should not generate harm or something impermissible under Shariah. It is important for a *maslaha* to be considered a real *maslaha*, that it demonstrates its viability and benefit for a wider segment of society rather than a benefit for a small group. What is perceived as a *maslaha* for a small group in the society could be harmful for others.

Therefore, *maslaha* cannot be used on its own as an instrument under Shariah for justifying whether a financial innovation is of a real benefit to the wider society or not, it should be supported with at least one of the Shariah objectives. This would ensure the objective employment of the theory of *maslaha* rather than the subjective view, which could eventually abuse the use of *maslaha*. This point is illustrated in the next sub-theme.

10.6.1 Application of a shared object: linking *masaleh* with *maqasid al Shariah*

The link between *al masaleh al Shar'iyya* (the common good/welfare in Shariah) and *maqasid al Shariah* (Shariah objectives) is well known among Islamic scholars and they use them interchangeably. Achieving the general common good via *maslaha* meets and satisfies the spirit of Shariah. Maintaining Shariah objectives in financial innovation is an evidently important aspect, and yet somewhat neglected in the Islamic finance industry and product development process. This theme is in accordance with the conceptualisation portrayed in Chpter 7, Figure 7.2. This suggests that the strategic direction of any financial innovation in IFIs is social welfare that incorporates all actors in society. The concept of purity and growth implies that any financial innovation should go beyond just meeting the minimum Shariah compliance requirements (Amabile, 1997; Atuahene-Gima and Ko, 2001), this is further discussed in Chapter 11, section 11.2.

Shariah is, in general, predicated on the benefits of the individual and that of the society. Its laws and rules are designed so as to protect these benefits for all and, as a result, facilitate improvement of the conditions of human life on earth. In order to understand the meaning of what a Shariah objective means, we should understand its definition within the contextual meaning. This was clearly emphasised by the interviewed scholars and practitioners, as one scholar stated:

> *Maslaha is concluded by studying the Shariah text and objectives, however there is a potential that it could be misused as a tool. Scholars set controls for the use of maslaha as a source of legislation, the main control is that the maslaha should not contradict Shariah and its text, it should also be a real maslaha and benefit and should not generate harm. Therefore, if the maslaha is mixed with some bad or harm, it is not a real maslaha. (Shariah scholar, AAOIFI Shariah Board (3), UAE).*

Islamic scholars have adopted a textualist approach (Ibn ‘Ashur, 1966: 15-17), which confines the meaning of the Shariah objective to the clear text, commands and prohibitions, which are the carriers of the Shariah objective. This means, according to this view, that the Shariah objective does not have a separate existence outside this framework. Given that a Shariah command is explicit and normative, it conveys the objective of the Lawgiver in the affirmative sense. Prohibitions are indicative of the Shariah objective in the negative sense in which the purpose of a prohibitive command, such as avoiding usury, is to suppress and avert the evil that the text in question has contemplated. An Islamic finance expert highlighted the link between *maslaha* and the Shariah objective in the following statement:

> *The link between al masaleh al Shar’iyya and maqasid al Shariah is well known among Islamic scholars and they use them interchangeably. Achieving the general public interest via maslaha meets and satisfies the spirit of Shariah. People may think, due to the recent misuse and wrong understanding of maslaha, that maslaha means lessening the Shariah control. (Islamic finance expert and practitioner, Islamic Development Bank, Saudi).*

Abu Hamid Al Ghazali (1058- 1111C.E/450-50H) is believed to be the originator of the Shariah objectives theory. According to him (1987, Vol. 1, pp. 3-9), Shariah came to achieve benefits. Shariah never states anything except to achieve a real benefit (*maslaha*). Islamic scholars observed that all the teachings of Shariah aim at preserving and protecting five main benefits, namely, religion, life, intellect, progeny, and property (or wealth). Those five benefits (or necessities as some call them) are essential to the human life.

Bringing about benefits and removing harm, according to Al Ghazali, is essential to people. However, what is meant by the benefit is what Shariah aims at. It aims at five objectives for human; that is to preserve and maintain their religion, life, intellect, progeny/lineage and wealth. Anything that protects these is a benefit and anything that emaciates those objectives, is considered to be a harm and overcoming it is a benefit.

This meaning as explained by Al Ghazali is what should be incorporated in the process of financial innovation and engineering. Therefore, a beneficial financial innovation is when the outcome of this process would be a good financial innovation that benefits the society, as well as individuals, and incorporates at least one of the Shariah objectives.

10.7 Application of Boundary Object: Flexibility of Shariah instruments in relation to financial innovation

It is acknowledged that any rulings or Shariah legal opinions made about financial matters should be in accordance with and does not contradict the constant acceptable Shariah rules, as explained above. If this fact is observed, the concept of 'original permissibility' (Kokasal, 2000: 37) would apply to any new financial innovation. This concept provides the basis for any financial innovation and engineering to address current and future financial needs, as long as it does not contradict the constant Shariah rules. It is believed that the scope of this type of Shariah rules is very wide and left flexible as a boundary object for a specific divine wisdom.

> *It is stated in usul al fiqh (sources of Islamic jurisprudence) that 'originality in all matters is to be permissible, therefore, any person can innovate within those rules that are set by Shariah. (An interview with a Shariah scholar from Qatar Foundation).*

The flexible variables in Shariah for financial innovation and engineering are in accordance with the constant rules. Shariah views within the context of flexible rules may change for different reasons, such as new emerging facts that were not known before and changes of time and place. However, such a change should be justified and rationalised with reference to Shariah rules.

These reasons for a change in the Shariah ruling or view regarding a financial matter are: the abuse of an existing Shariah legal view due to lack of moralities, changes in customs and traditions, a change required because of the common good, economic and technological development, evolution of financial instruments and methods, and the emergence of new financial needs necessitated by a new lifestyle and life cycle (Al Muzaini, 2007). This was emphasised in the findings of the interviews, an interviewee sated:

> *When we study the Qur`an, we find that it mentions the general comprehensive rules without going into details, this is all for a Divine wisdom in order to address issues regardless of a place or time. The Qur`anic expressions show that it extends to any time in the future even if its application changes over time.(Islamic finance expert and practitioner, Meezan Bank, Pakistan).*

Shariah is flexible enough to address any changes and requirements in the financial needs. This implies that Shariah acts as an object in the process of financial innovation and engineering in accordance with the boundary object theory, as explained in Chapter 7, section 7.5. There are many examples in Shariah of flexible rules being changed due to changes in time, place or customs and traditions, which necessitated the change. Understanding the rationale of the existing Shariah rules and their founding reasons is a key for an Islamic scholar to be able to change the interpretation of that rule.

A sale contract, for instance, as practiced today is different from a sale contract used 200 years ago, which was also different from a sale contract used 1400 years ago. This is of course due to the expansion of the financial market and requirements of new clauses to be inserted and added to the contract, in order to address issues related to technological, operational, institutional, financial and legal changes. These changes necessitated Islamic scholars to revise some Shariah rules related to the sale contract and address new issues that did not exist before in that contract (Al Zaraqa,1968: 642).

10.8 Challenges in Maintaining Boundary of Shariah-Oriented Financial Innovation

The degree of effectiveness of Islamic financial institutions is subject to varying circumstances, such as a government's limited coercive force, a lack of organised state, or the presence of strong religious precept. Islamic banking is viewed as ethical and keen to promote good values. However, the alternative banking institution needs to compete with conventional banks for a bigger share of the market.

> *Islamic banks currently are facing a challenge to compete with products offered by conventional banks, this is the reality that we should not hide. The concept of Islamic finance and banking is perceived in the West as an approach that serves a group of people and provides a different investment approach. Islamic finance is not designed to target a specific group of people, it is open to all whether the money put forward to invest in it is from a Muslim or non-Muslim client. But, the important thing for Islamic banks is to have the trust of investors that they offer a different approach, and this cannot be proven without developing different financial innovation. (Islamic finance expert and practitioner, CEO Inayah Group, Jordan).*

Some, on the other hand, are of the view that Islamic banks are there to provide an alternative to the interest-based financial products, in order to satisfy a gap in the market and protect Muslims from compromising their faith. Here is how one interviewee described his view about this issue:

> *To be very honest with you, neither of both, because we are not competitive enough to compete with conventional banks, if we look into the total capitalisation of the Islamic finance industry, we find that it makes only 1% of the global assets. Also, Islamic banks do cater for those who are financially excluded, as a matter of fact there are so many Muslims that have not been accessed by Islamic banks, we need to resolve the issue of financial inclusion. (Islamic finance expert and economist, IDB, Saudi).*

Hence, there are different views about the role of Islamic finance and banking in the market as an alternative or being open to all and compete with traditional banks. The majority of views expressed by the interviewees suggest that Islamic banking is an option available to people from all faiths, and as it provides an ethical approach to finance and banking, it would attract the mainstream market.

Some Islamic banks' products have been criticised because they mirror the conventional products. Views of interviewees were divided into two, the first is that Islamic banks should innovate out of the space of conventional financial products, the second view, however, did not find any issue in taking what is good, from the conventional banking system, and leaving out what is not. The issue is debatable; however the process is what matters here. If there is a robust approach for filtering the re-engineering processes of conventional financial products to make it fully compliant with Shariah, without any compromises to its objectives, then why not do it.

The process of financial innovation and engineering in the Islamic finance industry lacks standardisation, coherence or existence of a guiding framework. The development of a framework would help streamlining the best practices in the market for financial innovation and engineering. This would help in reducing the use of legal tricks, which would impact negatively financial products on offer by IFIs. The following is one view that was shared by the majority of interviewees when they were asked about the need for a possible guiding framework for financial innovation and engineering.

> *I believe this is the right approach; we should have this framework as a pre-requisite for innovating or engineering any financial products, and not the other way round. This framework e.g. will be based on avoiding all prohibitions, such as avoiding dealing with all types of riba or its outcomes, monopoly, alcohol, pork, drugs etc…. When we use this framework as the base, this will make our job much easier and will save us time. (Shariah scholar, Chairman of the Shariah Supervisory Committee for Islamic Bank of Palestine).*

Shariah gives an importance to the form of a financial transaction, but also gives a more importance to the substance and core objectives. This is an imperative feature for any framework to be developed; it should focus on the core substance of Shariah and its objectives of the innovation being contemplated or financial product being engineered. This is what an interviewee has said about this subject:

> *'…the objective of a sale contract is to provide needed commodities to people, a wholesale trader buys commodities to do business and ultimately reach the retail consumer. The objective, for instance, of an Ijara contract is the lease or sale of usufruct to another party so they can use the property, house or shop etc.'. (Islamic finance expert and practitioner, Islamic Development Bank, Saudi).*

Therefore, the required framework should not only consider the form required of a financial transaction, as a tick-box exercise, it should rather deliver a real benefit and economic value.

Maqasid al Shariah (Shariah objectives) cannot be an instrument on its own for financial engineering, they are criteria and measurement tools that help in ensuring that *ijtihad* is in accordance with Shariah. Shariah objectives as theorised in the writings of Islamic jurists is similar to *maslaha*, in terms of not being acceptable to be used as an instrument for financial innovation on its own (Al Buti, 2005: 134).

It should be always used as a complementing tool for rationalisation and justification of the intended benefit and outcome of a financial innovation or a product being engineered. It is a way of assessing the financial product in the eyes of Shariah in order to support the *Ijtihad* or *Qiyas* that is used as an instrument. The role of Shariah objectives is articulated by a Shariah scholar as being a protecting factor from deviation, he said:

> *This brings us to the third rule or matter, which is the maqasid (objectives) of Shariah, if we consider these issues carefully we will shut the door for any legal trickeries (hiyal Shar'iyah), and we will open the door for acceptable Shariah exists by incorporating that into any new framework to be developed. (Shariah scholar, AAOIFI Shariah Board (3), BCB).*

Financial innovation and engineering should be built on existing Shariah rules and based on new understanding of those rules, rather than trying to reshape those rules. There has been an agreement among all interviewees that innovating and engineering financial product do not require abandoning existing Shariah rules, this rather suggests a new reading and interpretation of those rules. It is important to build on the existing Shariah rules and re-consider the variable rules as a boundary object in the new financial environment, development of the market and emergence of new financial needs.

Those variable Shariah rules are flexible enough within a prescribed structure to provide the ground for addressing any new financial innovation, and are part of the evolution theory of Shariah rules, (Al Zarqa, 1989 and Al Ashqar, 1991). This theory is divided by Islamic scholars into constant and variable rules, as discussed earlier. Financial innovation and engineering should not rely on a particular school of *Fiqh* (jurisprudence) or the need of absolute *Ijtihad* as this would limit its scope. This is known as an acceptable view, with the understanding that all schools of jurisprudence in Shariah complement each other in matters relating to financial transactions. The importance of a guiding framework that combines the views of the four main schools of *Fiqh* was noted by an interviewee, he said:

> *Any proposed standardised framework for financial innovation and engineering should represent the views of the four main fiqhi schools, otherwise it would be limited in its scope if it is based on one view or school of fiqh. (Islamic finance expert and practitioner, al Meezan Bank).*

This approach is taken by AAOIFI in issuing Shariah standards, and incorporating different views within those standards rather than building them on a particular *Fiqhi* view or school of *Fiqh*. Also, all regarded schools of *Fiqh* are represented in its Shariah Board. This approach would be adopted for the development of a framework for financial innovation and engineering to ensure its inclusivity. The above main theme leads to the following sub-themes.

10.8.1 Building on existing compatible financial platforms with Shariah

Financial engineering from an Islamic perspective does not intend to re-invent the wheel; it should take what is good in the conventional system and build on it within a Shariah framework. It is worth noting that this view is supported in the Islamic tradition. The *mudaraba* contract (profit sharing agreement) existed before the time of Islam and was practiced by Prophet Muhammad (pbuh) himself in the pre-Islamic period.

When Islam came, it took the *mudaraba* contract and re-engineered it in a Shariah acceptable way, specifying its conditions and requirements, as they exist currently in the classical books of jurisprudence, to be acceptable for Muslims to use it. Therefore, the re-engineering of existing conventional financial products in a Shariah compliant way, within a robust and controlled framework, is not any different from the re-engineering of a *mudaraba* contract in the early days of Islam. This is how one interviewee commented on this issue:

> *Traditional financial institutions have developed and innovated many financial products along with their processes, system and tools which are widely accepted. This does not mean that we do not benefit from this development and take the good aspects of it within our religious framework and without contravening Shariah, there is nothing against that. Take any traditional financial contract that is widely accepted and practised, such as the letter of credit,*

if we adjusted it to be in compliance with Shariah, e.g. if it involves interest we can adjust it to avoid interest and ensure that it complies with Shariah, there is nothing in that case prevents us from doing so. (Shariah scholar, AAOIFI Shariah Board(2)).

One may think that the above statement sounds sensible, and question why Islamic banks have to reinvent the wheel if they can build on what is already achieved by traditional banks, after, of course, screening and filtering what contradicts Shariah. This, however, may convey a wrong perception about what Islamic finance represents as another interviewee noted:

Products that are not fully compliant with Shariah or mimic interest-based products could be the reason that some people have misperception about Islamic finance. This will be different if we do not follow the conventional finance and free ourselves from it, then people will see clearly the difference and true meaning of Islamic finance. (Shariah scholar, Qatar Foundation).

10.8.2 Shariah controls, a limiting or protecting factor

Shariah controls do not limit the scope of financial innovation and engineering; on the contrary it protects the Islamic finance industry. People who cannot see the Shariah wisdom and objectives of prohibiting certain actions or financial practices, as detailed above in previous themes, would think that Shariah requirements are constraints for financial innovation and engineering, which hold back its development. This is how a practitioner described Shariah controls for financial innovation and engineering:

If there is a river that has windy routes and its riverbed is not deep, then, there was a heavy rain, what will happen! The river will flood and destroy the field, livestock, properties and lives. So, can I say that the riverbed is a limitation to the river that hinders its movement or, that it helps control the flow of its water in the best possible way to reach its final destination when it meets the sea! It is of course the latter, and this is Shariah. If there is not a riverbed for the river we usually build it ourselves and build dams to reduce the risk of flooding, so Shariah is not a restriction, it is there to protect us and help us to achieve our financial benefit in the best possible way according its regulations. (Islamic finance expert and practitioner, Nizwa Bank, Oman).

Shariah requirements are, thus, the riverbed that keeps the Islamic finance industry on the right path to reach its potential and protects it from harming itself or others. Therefore, the theory of Shariah objectives, as detailed by Al Ghazali (1987, Vol. 1, pp. 3-9), plays an important role in Islamic finance and the development of financial innovation and engineering. It provides the measurement tool in determining whether a financial innovation or a product being engineered fits for purpose and qualifies within that framework or not.

Islamic scholars, who struggle to fully understand this theory and its application on the Shariah variable rules, tend to take more cautious approach. '*traditional Shariah scholars who are not trained in financial transactions and banking avoid divulging in issues related to new financial innovation and prefer to stay on the safe side*', (Islamic finance expert and practitioner, ISRA, Malaysia). They prefer to confine themselves to the existing Shariah rules without further analysis and examination based on the changes in its application. Therefore, this group of Islamic scholars are perceived to be conservative as opposite to progressive Islamic scholars, who take steps to assess and reinterpret the variable Shariah rules in light of the new changes and financial needs.

10.8.3 Religious orientation: issues regarding what constitute an acceptable financial innovation

Shariah requirements are for the benefit of all involved parties, they restrict financial innovation that leads to harm and prohibitions under Shariah. If we examine financial transactions closely, we would find that Shariah requirements for each transaction serve certain purpose. A Shariah scholar referred to the importance of substance and core objectives of the intended financial innovation, and how the form of the innovation is in accordance with the substance as a manifestation of the Shariah orientation.

> *Shariah gives an importance to the form of a transaction, but also gives a more importance to the substance and core objective. If we look carefully we find Islamic banks follow the form and leave the substance in the financial engineering process, because of the risk associated with the substance and they do not want to take risk. We forgo things related to the form to make things easier and accommodate new transactions, but not the substance. (Shariah scholar, AAOIFI Shariah Board (4)).*

The requirement for an offer and acceptance in a financial contract is to ensure that the consent of both parties is there to entre and conclude that contract. The condition for the subject matter of a financial contract to be specified clearly is to eliminate any uncertainty about the financial transaction and, as a result, avoid potential dispute between the contracting parties. An interviewee explained this as follows:

> *Also, a problem about the behavioural practices such as buying and selling metal in London Metal market, what is the economic benefit of that? Is this the Shariah objective of a sale contract, where both parties, seller and buyer, will benefit from the sale contract? This commodity will be bought and sold then bought again as if you are in a vicious circle. Even if you buy Shariah compliant acceptable shares or stocks, trading without a real objective and benefit could harm the market by raising or declining the prices of shares or commodities. (Shariah scholar, Chairman of the Shariah Supervisory Committee for Islamic Bank of Palestine).*

This is a real issue that is currently affecting the Islamic banking industry, the heavy reliance on debt instruments rather than equity instruments.

10.8.4 Challenges for financial innovation and engineering

The common differentiator between conventional and Islamic finance, from a religious orientation towards financial innovation perspective, is the issue of *dhamaan* (bearing risks associated with the financial transaction). The theory of *dhamaan* (Imam Malik, 1951; Al Zarkashi, 1982 and Ibn Rushd, 1988) in the Islamic commercial law is of paramount in Islamic financial transactions. It defines who bears the risks of the subject matter of a financial transaction, in a sales contract, e.g. the seller bears the risk of the commodity being sold, as long as it is in his possession. The risk transfers to the buyer only when the buyer has actual or constructive possession of the commodity. This issue is what differentiates financial transactions in Islamic banks from its conventional counterparts. This forms a substantial challenge for Islamic banks, a Shariah scholar said:

> *The most important point, in my modest view, to differentiate between an Islamic financial transaction and a traditional one is the issue of dhamaan (assuming associated risk) as described by Islamic jurists, or taking risks as known conventionally. If you review all Islamic financial transactions you will see that risk is an integral part of them and there cannot be a possibility of zero risk, when there is always mukhatarah (risk) related to an ownership. For instance, if we take the conventional loan as an example, there is no risk related to the ownership, the risk involved is a credit risk, which means the possibility of the borrower to return the loan with the interest due or not. Therefore, there is no ownership of an asset or usufruct (manfa'ah). Islamic financial transactions are based on an ownership*

of assets, rights or usufruct that can be traded or leased. Such ownership involves taking risk. However, the avoidance and shifting of risk in different ways would contradict the Shariah element in those transactions even if they still appeared to be compliant with Shariah in their form. (Shariah scholar, Head of Shariah compliance at Abu Dhabi Islamic Bank, UAE)

All financial products offered by Islamic banks are based on an underlying asset, which is the subject matter of the transaction, unlike conventional banks where their financial products are based mainly on a loan agreement, which does not involve trading in any asset. Therefore, Islamic banks bear greater risks associated with their products. As a result, some Islamic banks try to engineer their products in a way that could shift almost all of the risks associated with the underlying asset to the client, and this negates an important Shariah element in any financial transaction. This would make the transaction compliant with Shariah only in form as the interviewed Shariah scholar noted above.

10.9 Conclusion

This chapter analysed the data collected through the method of interviews. The interviews were targeted towards influential Islamic scholars and expert practitioners who are decision makers in the Islamic finance industry. The aim was to obtain more in-depth information and support for further details related to issues highlighted in the analysis of the data collected by the questionnaire survey.

The overall findings of the interviews are consistent with the findings of the questionnaire survey in Chapter 9 and the theoretical lens of the research as set out in Chapter 7. Both findings lead towards a theoretical framework of what constitutes religious orientation towards financial innovation and engineering, and the key components of this theoretical framework. Also, it addresses the mechanics and dynamics of this framework as a shared boundary object that links all actors and various factors involved in the financial innovation and engineering process in IFIs. It focuses on the role of Shariah as a boundary object and the level and extant of its elasticity in relation to financial innovation.

20 influential decision making Islamic scholars and experts in the Islamic finance industry, as the key selection criteria, were interviewed, the objective and selection criteria are detailed in Chapter 8 section 8.4.2.1. The data were analysed and categorised to 7 main themes and their sub-themes. The

overarching theme that emerged from the interviews analysis, and was based on the 7 main themes, was in accordance with the emerged theme from the questionnaire analysis. This theme is the religious orientation towards financial innovation, and how it is manifested in Islamic finance and banking, which is facilitated by the role played by Shariah as a boundary object.

The analysis has highlighted very pertinent issues to the Islamic finance industry, which we have raised and discussed in this chapter. Each theme resulted from the analysis of the interviews could be a stand-alone research subject due to the richness of the data obtained. However, for the purposes of this research and the development of a guiding framework for financial innovation and engineering, the data collected will satisfy the requirements for building this framework and supporting the conceptual framework. The focus therefore would be on selected themes that contribute directly towards the development of this conceptual framework, these are shown in Table 10.1 below.

Table 10.1: Themes that would directly contribute towards the proposed framework for financial innovation and engineering

Theme No.	Selected Theme
5	The Role of Shariah as a Shared Object in Financial Innovation. 5.1 Shariah rules in financial matters. 5.2 Constant Shariah rules in relation to financial matters. 5.3 Shariah Instruments for Financial Innovation and Engineering.
6	Application of a Shared Object: Applying *Maslaha* as an instrument for financial innovation and engineering. 6.1 Application of a shared object: linking *masaleh* with *maqasid al Shariah.*
7	Application of Boundary Object: Flexibility of Shariah instruments in relation to financial innovation.
8	Challenges in Maintaining Boundary of Islamic Financial Innovation. 8.1 Building on existing compatible financial platforms with Shariah. 8.2 Shariah controls a limiting or protecting factor. 8.3 Religious orientation: issues regarding what constitute an acceptable financial innovation.

	8.4 Challenges for financial innovation and engineering.

The proposed framework should incorporate highlighted theories such as 'the originality of all matters is being permissible', 'Shariah objectives and rationales', '*dhamaan*' the concept of constant and variable Shariah rules and the role of Shariah as a shared object in each of them. Also, the role of Islamic banking as an institution that brought about changes and developed the Islamic finance industry, and how Shariah requirements provide protection to all stakeholders, nonetheless, they may be perceived as constraints by some people.

There has been an agreement between both categories of interviewees, the Islamic scholars and Islamic finance practitioners, on the above aspects and requirements for a Shariah oriented framework for financial innovation and engineering and its components. Some disagreement emerged between the interviewees in relation to the role of Islamic banking, whether to compete for a share of the market with traditional banks or only cater for a religiously excluded segment. However, all interviewees agreed to the importance of the incorporation of all Shariah requirements in the financial innovation and engineering processes.

The interviews and their analysis have provided a great insight into the questions being raised by this research study and meeting the research objectives. They also provided substantial value in answering those questions and providing further insight into the subject that could offer avenues for future research. Next chapter (Chapter 11) provides a full account of the research setting out the discussion in accordance with the research objective, theoretical framework and how they are linked to the research findings, contribution and policy implications.

Chapter 11: Discussion and Conclusion

11.1 Introduction

In accordance with the main research objectives stated in Chapter 1, section 1.8, this research study has explored the approach of the Islamic banking industry in defining and implementing a religious orientation towards financial innovation and financial engineering at all levels within the Islamic Financial Institutions (IFIs). The research has examined various approaches exhibited in individual and institutional behaviour and practices of an IFI in relation to the enactment and application of religious theories into the processes of financial innovation and engineering.

This study investigated how IFIs are embracing religious guidelines in their structure to drive the processes of product development and its outcome in order to be compatible, at the same time, with the rapid growth of the financial system. This was achieved by adopting a triangulated method of employing questionnaire survey that covered practices of IFIs in various countries around the world, interviews with key influential figures in the Islamic finance industry, observations and finally a documentary analysis (see Appendix 3), which was conducted to assure robust and reliable findings. This chapter extendes further the discussion of the reasrch findings provided in Chapters 9 and 10 and outlines and discusses the findings of the research as presented in those chapters. It also states parsimoniously the contribution of this study to relevant theory and draws a conclusion. It further outlines policy implications of the research for various stakeholders, it reflects on the research process assessing what influenced the research process and analysis, and finally it suggests avenues for future research.

11.2 Discussion

The religious imperative to provide alternative financial services that comply with the principles and teachings of Shariah in IFIs was discussed in Chapters (2, 3, 4 and 6) of this research study (see also: Wilson and El-Ashker, 2006; Ahmed, 1980 and Naqvi, 1981). Chapter 4 explored how, financial innovations developed over 1400 years in the historical context of the Islamic civilisation and the key influencing factors that impacted its development, (Al Omar, 2003; Lewis, 1970 and Hitti, 1963). Chapter 5 discussed innovation bias and innovation from a conventional perspective with a view to 3 Schumpeterian schools of innovation, which paved the way for outlining the Islamic school of innovation in Chapter 6. The process of financial innovation and engineering remains not clear enough as discussed in Chapter 6. This is due to the wide-ranging interpretation of Islamic commercial law and the lack of standardisation of such processes. This has created a major challenge for the Islamic finance industry and the compliance of the financial innovation with religious requirements that they must seek to adhere to (Asad, 1993; Al Aqla *et al*, 2004; Al Zarqa, 2012).

Chapter 7 concluded that the absence of a coherent conceptual definition of what constitutes religious orientation towards financial innovation is a major challenge. This conceptualisation would act as a tool to facilitate further examination of the incorporation of Shariah-induced financial innovation. The research also employs the theory of boundary object as a supporting theoretical lens for the research, by reflecting on the role of Shariah as a boundary and shared object in the financial innovation process as a dynamic concept.

The different degrees to which Shariah rules are implemented or infused in financial innovation and engineering emphasises the IFI's lack of agreed upon accepted standards regarding what constitutes religiously oriented financial innovation. Albeit, they all, as the findings of the survey and interviews clearly show, agree to the importance of fully implementing Shariah rules in all processes, but the absence of a unified approach or framework is the missing factor in this formula.

Hence, the developed theoretical conceptualisation and need for a coherent definition, proposed by this study. These developments are needed to provide the ground for proposing a standardised framework for religious orientation towards financial innovation and engineering. In order to address this issue, this study built on the theoretical work done by Siguaw, Simpson and Enz (2006) in relation to innovation orientation as the main basis for the conceptualised theoretical lens for this research study. It further strengthened the theoretical lens by combining the theory of boundary objects with it.

The relevance of boundary object theory is due to the dynamic conceptual theoretical lens it provides for the research, in relation to enacting Shariah as a shared boundary object (see Figure 7.3) in the financial innovation and engineering process; (Chapter 7, section 7.5) (see also: Scarbrough, et al., 2015; Bartel and Garud 2003; Bechky 2003; Boland and Tenkasi 1995; Carlile 2002, 2004; Levina and Vaast 2005; Pawlowski and Robey 2004; Star and Griesemer 1989; Nicolini, et al., 2012). This, in addition to the findings reported from the analysis of the survey and interviews as detailed in Chapters 9 and 10, provided another dimension for conceptualising this research. The 2 main contributions that this study offers, by extending existing theories, are articulated below.

11.2.1 Religious orientation towards financial innovation

Existing research studies have examined innovations, focusing on innovation typologies, the economics of research and development and innovation diffusion (Freeman, 1994; Miles and Snow, 1978; Van de Ven et al., 1999; Siguaw et al., 2006). A firm's long-term success may rely more on an overall firm-level innovation orientation that produces quality financial innovations. Some of these studies, according to Siguaw et al. (2006), have, recently, acknowledged innovation orientation as a construct in its own right. Manu (1992: 334) explains innovation orientation as encompassing the total innovation programmes of companies and is strategic in nature because it provides direction in dealing with markets.

Siguaw et al. (2006) provided a clear and theoretically grounded definition of innovation orientation as an important step in building the construct. This proposed definition and theoretical framework is based on an organisational knowledge structure perspective. This perspective has not been frequently used to frame organisational concepts in the literature so far, but this thesis has sought to extended Siguaw et al.'s framework in order to explore religious orientation towards financial innovation as an organisational structure for IFIs.

The findings of the survey and interviews in relation to the structure, governance and processes of financial innovation and financial engineering, as presented in Chapter 9 and 10 respectively and earlier in this chapter have sought to show how innovation orientation in IFIs is directed by and subjected to religious rules. This indicates that innovation orientation in IFIs is a flexible and learning philosophy. According to this learning philosophy, IFIs have common standards and beliefs about learning and knowledge, which guide all functional areas in IFIs toward innovations that are based on Shariah rules. The research findings extend the existing literature on innovation orientation and the theoretical framework presented by Siguaw et al. (2006) to a radically different field and a construct that is based on religious orientation of financial innovation.

This addition to Siguaw et al.'s theoretical framework required the development of a framework for understanding and exploring the management of financial innovation founded on insights from multiple disciplines, knowledge-based theory, and the resource-based view of IFIs. This conceptualisation of religiously oriented financial innovation in IFIs is especially important for a good reason. This reason is the formal recognition of an innovation orientation system rooted in religious belief and philosophy that guides its direction and outcome through a set of pervasive understandings. This set of understanding (see Figure 7.2) should reduce the ambiguity found in the current financial innovation processes, which has yet to agree on a definition of the construct (Garcia and Calantone, 2002).

Therefore, the analysis in this research showed the importance of the role played by religious rules and philosophies in the orientation of financial innovation in IFIs. Smith's (1790: 212 - 216), in reference to God and the role of religion, explores the concept of 'observing an all-powerful being', which is in accordance with the philosophy and theoretical foundations of Islamic economics and finance. He acknowledged religion as a dynamic construct and described the role of religion as providing a safety net and an extra layer of consciousness and self-accountability. These aspects are clearly emphasised in the financial innovation processes conducted by IFIs, and the role of religion directing and governing such conduct and practices, this was evident from the research findings.

The philosophical learnings and principles of this theoretical framework are of paramount importance, they spring from strong beliefs as the key to the economic philosophy in Islam. It is manifested in a person's relationship with the one God, His universe and His creation (see Chapter 6). Innovation orientation is also considered as a calculated plan towards achieving the intended objective (see further discussion in Chapter 7, section 7.3.1).

This strategic intent, which provides directions toward an organisation-wide commitment for financial innovation, is common between IFIs and non-IFIs. However, what defines the strategic direction of an IFI towards a specific commitment, in their innovation orientation, is the learning philosophy that is founded on religious rules, see Chapter 10, Section 10.4, (Worren, Moore, and Cardona, 2002). The learning philosophy that encompasses religious orientation towards financial innovation is a concept that this study adds by extending the existing theory of innovation orientation as explained in Chapter 7. Reflecting on the developed theoretical framework in Figure 7.2 that is based on Siguaw, et al.'s (2006) concept in the context of IFIs, innovation and product development processes are both knowledge-based and resource-based. The knowledge-based component is the religious rules and requirements that IFIs adhere to and gives them their religious orientation identity. The resource-based components, on the other hand, are those experts in interpreting the knowledge-based component and its enactment in the innovation processes within IFIs.

The findings of this research pave the way to empirically examine the effect of financial innovation and engineering with religious orientation on innovation. This research attempted to apply the theory of innovation orientation beyond its existing field of application. This view is in accordance with that of Varadarajan and Jayachandran (1999) and others (e.g. Siguaw et al., 2006) who highlighted the need for research examining the effects of innovations in areas other than new products and the speed of new product introductions on firm performance.

11.2.2 Plasticity of the shared boundary object to manage tensions and conflicting values

The research explored further the role of Shariah as reported from the research findings, in particular the findings from the interviews in Chapter 10, section 10.7. The research findings showed that Shariah, as it encapsulates the religious rules, plays a key dynamic role in the financial innovation cycle in IFIs. The findings emphasised the role of Shariah as a shared boundary object enacted in the financial innovation and engineering processes in IFIs.

This study employs boundary object theory (see: Scarbrough, et al., 2015; Bartel and Garud 2003; Bechky 2003; Boland and Tenkasi 1995; Carlile 2002, 2004; Levina and Vaast 2005; Pawlowski and Robey 2004; Star and Griesemer 1989; Nicolini, et al., 2012) as a combined theory with innovation orientation was crucial to have more in-depth understanding of this organisational framework and processes for religiously-oriented financial innovation.

Objects allow us to act at a distance and to make our interaction endure beyond the present. What makes human sociality distinctive is that practices are not merely constellations of inter-subjectivity; they are also constellations of "inter-objectivity" (Latour 1996: 234; Nicolini, et al., 2012). Recent organisation and management literature (Carlile 2002, 2004; Carlile and Rebentisch 2003; Levina 2005; Star and Griesemer, 1989; Nicolini, et al., 2012) has addressed the role of objects in cross-disciplinary collaboration using the concept of "boundary objects". This concept focuses on the capacity of certain types of artefacts to support collaboration across diverse specialist groups by acting as "boundary objects". This idea works well when used to provide an insight on how, through an object such as religious rules (Shariah) that reside amid different social worlds and groups in the Islamic finance industry cooperate without consensus.

The research findings, in Chapter 10 in relation to the role played by Shariah in the innovation process, thus, showed how religious rules, represented in the role of Shariah as a shared boundary object, acted as epistemic objects in motivating collaborative tasks centred on the overarching objective and narrative. Thereby inspiring collaborative work across the different groups within IFIs and other linked groups for creating a Shariah-induced financial innovation that complies with Shariah rules. Meanwhile, religious rules acted primarily as boundary objects, supporting commonly understood representations of practices, organisational culture and philosophy and product features.

Star and Griesemer (1989: 393); Nicolini, et al., (2012) discussed the feature of boundary objects as being flexible, epistemic artefacts that inhabit several intersecting social worlds and satisfy the information requirements of each of them. They regard boundary object as a shared language, which has to be sufficiently loose and flexible to allow various working community to interpret and enact the knowledge boundary across an organisation. It facilitates flexible interpretations of different meanings in the various groups within the organisation. Yet their structure is common to all these groups, so that they are recognisable to them and can serve as a means of translation (Nicolini, et al., 2012).

The research findings, as discussed in Chapter 10 interviews analysis, however, show a form of plasticity of a shared boundary object. The role of Shariah is a fundamental construct for Islamic financial innovation, where the Shariah constant rules should be maintained at all times in the financial innovation process. The religious orientation, in a static form defines the innovations in IFIs. However, the tensions are arising from the desired outcome to offer innovative products in IFIs, which in some instances are conflicting with the required religious rules in the innovation processes (see further discussion in relation to observing constant Shariah rules in the innovation process in Chapter 10, section 10.4).

An example for that was emerged from the research findings, (see Chapter 10, section 10.5.1); this is where a conflict between two key concepts arises, that 'the originality in all matters is to be permissible' and 'avoiding what is prohibited takes a precedent over bringing the good'. In this example, the judging criteria that an Islamic scholar should consider, is giving a priority to avoiding harm to the society as opposed to bringing good. Financial innovation and engineering or finding a financial solution to meet market needs, must observe the Shariah constant rules as an overarching umbrella, in order for it to be acceptable.

Financial innovation in IFIs could be drawn to show a form of 'plasticity' in the process of innovation. Islamic scholars and Shariah advisers in IFIs translate the religious rules. They use it as a boundary object in innovation for the adjustment of rules, in order to meet local regulations, the internal Shariah compliance certification and the assurance of Shariah compliance.

In turn, the role performed by Shariah in this process as a shared object was not static, but evolved over time to support the ‘emergent action’ involved in coordinating an unfolding innovation process to meet financial needs and market demand. Thus, the plasticity of implementing Shariah as a boundary object in innovation process is apparent, as opposite to flexibility of the boundary objects, as it is controlled by static Shariah rules that provide structured boundaries. This ensures that the flexibility of Shariah rules, which is required by the process of financial innovation and engineering, is not abused and stretched beyond meanings and acceptable translation of its plastic structure.

This plasticity of Shariah as a shared boundary object of the various roles played by it adds to previous work on the ‘hierarchy’ of objects (Nicolini et al., 2012) and the role of a shared object (Scarbrough, et al., 2015). Thus, this study extends this previous work by showing how the relations between Shariah as a shared boundary object and other actors is developed as a process to overcome the tensions and challenges arising from the process of producing financial innovation with religious orientation. This challenge was overcome by unconsciously coordinating multiple collaborative tasks performed by various actors towards an innovative Shariah-induced outcome. Here our analysis centres on the importance of a clear framework for the financial innovation process in IFIs.

Previous work (such as Carlile 2002, 2004; Scarbrough, et al., 2015) has highlighted the ‘centrality’ of such milestones and timelines, i.e. the developed framework as a contribution of this study, based on extending existing theories, (Figures, 7.2, 7.3, A2.1, A2.2 and A2.3), as process-oriented objects, which specify temporal and resource constraints. Nonetheless, their cooperative role has primarily been viewed as that of a boundary object between groups (Carlile 2002, 2004; Scarbrough, et al., 2015). However, it was observed in this study that the centrality and the role of Shariah were not only confined to its specific capacity to act as a boundary object, it was also the link as a shared object for various groups within the Islamic finance industry in general and the IFI in particular.

As articulated by Bruns (2013), these relations enabled groups working on different collaborative tasks of design, production and so on to ‘work alone together’ by linking their emerging contributions to those of other groups, and to the innovation process as a whole. This study also adds to previous work (Scarbrough, et al., 2015; Bartel and Garud 2003; Bechky 2003; Boland and Tenkasi 1995; Carlile 2002, 2004; Levina and Vaast 2005; Pawlowski and Robey 2004; Star and Griesemer 1989; Nicolini, et al., 2012) its depiction of Shariah as a boundary object with plasticity feature that enables IFIs to develop financial innovation within the boundaries of Shariah rules.

Hence, the preferred term here to describe the role of Shariah as a boundary object is ‘plasticity’ rather than ‘flexibility’. Unlike the term flexibility, ‘plasticity’ refers to being flexible within a given structure and demarcated boundaries, those boundaries are the constant Shariah rules, as discussed in Chapter 10 Section 10.7, that shields this plastic structure from collapsing. This was a clear differentiation emerged from the findings of this research (as also discussed in chapters 7, 5, 6, 9 and 10).

This is, therefore, the core difference between the financial innovation process in Islamic finance as a religiously oriented process to achieve Shariah-induced beneficial financial innovation, where Shariah is a shared object, and innovation in the traditional finance system. Thus, when the plasticity of religious orientation towards financial innovation collapses and becomes boundary-less, the Islamic finance innovation would not be any different from the conventional one, because the role of Shariah as a shared boundary object has diminished. Finally, our findings also contribute by adding new vocabularies that are referred to herein; those are religious orientation towards financial innovation, Shariah as a shared boundary object, plasticity of Shariah and Shariah-induced financial innovation as an outcome of the above.

11.3 Research Contribution

This research study has presented theoretical (Chapter 7), empirical (Chapters 9 & 10) and practical contributions (Appendix 2) that demonstrate the novelty and validity of the underlying research. By developing a relational view of the role of Shariah as a shared boundary object for the process of financial innovation with religious orientation, this study makes several contributions to existing theory and provides a platform for further research.

The underlying framework of religious orientation towards financial innovation, explored in Chapter 7, Figure 7.2, is the primary theoretical contribution of this research study. This framework also provides an insight to understand the nature of what constitutes religious orientation towards financial innovation and the dynamics of its implementation in the Islamic finance industry. This concept of innovation orientation helps to explain the empirical consequences of religious orientation towards financial innovation in the existing context of the Islamic finance industry.

It also addresses the challenge to have a clear concept of what constitutes a religious orientation towards financial innovation as a new phenomenon within the innovation orientation field proposed in previous studies (Subramaniam and Youndt, 2005; Siguaw et al., 2006; Varadarajan and Jayachandran, 1999; Amabile, 1997; Worren, Moore, and Cardona, 2002; Burns and Stalker, 1977; Zaltman, Duncan and Holbek, 1973; Hurley and Hult's, 1998). Thus, this concept of religious orientation towards financial innovation suggested two directions for this research study: firstly, a more in-depth investigation of the existing level of religious orientation, and secondly, exploring and examining the process of financial innovation and engineering as a dynamic Shariah-induced concept. This was achieved by employing the boundary object theory and exploring the enactment of Shariah as a shared boundary object (Bartel and Garud 2003; Bechky 2003; Boland and Tenkasi 1995; Carlile 2002, 2004; Levina and Vaast 2005; Pawlowski and Robey 2004; Star and Griesemer 1989; Nicolini, et al., 2012). The findings of this research contribute by articulating the concept of 'plasticity of Shariah as a shared boundary object'.

Major evidence emerged from the survey and interviews findings, which suggested a definition of religious orientation towards financial innovation; this is the second contribution of this study. The study suggest the following definition, which is based on Siguaw's et al., (2006) definition of innovation orientation, a multidimensional framework based on a religious-orientation, strategic direction, and trans-functional religious-orientation that, in turn, guide and direct all organisational culture, strategies and actions, which also are embedded in the formal and informal systems, behaviours, competencies, and processes of the IFI.

The definition above combines various concepts in the literature on innovation orientation and the role of the religious orientation as a shared boundary object in coordinating the efforts of various functions within an IFI. In Islamic finance, innovation orientation is a learning philosophy, in which IFIs share common Shariah standards and beliefs about learning and knowledge, so that all functions of the IFI's financial innovation are based on Shariah (Worren, Moore, and Cardona, 2002). This conceptualisation strongly indicates that a learning philosophy must be an inherent component of the religious structure for innovation orientation in IFIs. This learning philosophy may reinforce the importance of the religious guidance as an orientation (Amabile, 1997) and the role of Shariah as a boundary object from a dynamic perspective (Nicolini, et al., 2012).

Innovation orientation is also considered as a calculated process towards achieving the intended objective. This strategic intent is common between IFIs and non-IFIs; however, what defines the strategic direction of an IFI towards a specific commitment, in their innovation orientation, is the learning philosophy (Worren, Moore, and Cardona, 2002). The above two components, i.e. learning philosophy and strategic direction, drive the IFIs' behaviour in that structure as one united across all functions in the institution, not only the innovation cycle. It is incorporated in all processes and competencies that drive the behaviour of employees in the IFI and coordination of various functions, whether these processes are formally structured or informal in terms of the culture of the IFI. All employees are driven by that culture in their functional areas and practices (Siguaw et al's, 2006). The common beliefs, values and understandings of that religious framework in IFIs are disseminated so that the IFI operates as one collective body that aspires to see the IFI succeed through religious orientation towards financial innovation.

Innovation orientation in IFIs possesses a future vision and belief of the strategic future direction, which was clear from the research findings. This belief defines who the IFI is and how its activities, in relation to financial innovation, are assembled to ensure their alignment with Shariah rules. The term trans-functional (Siguaw et al, 2006) in the definition refers to a set of unique structures and guiding religious principles that drive activities and behaviours in each function and business area of the IFI.

These variables are embedded in the formally documented and informal processes of IFIs in relation to the financial innovation cycle. This was clear in the survey findings (see Chapter 9) where those IFIs, who do not have formal process for financial innovation and engineering, still follow Shariah as a guiding framework of behaviours and activities. Competencies that define the IFI as being good at certain elements, also contribute to this framework; these competencies would be a robust Shariah compliance framework, market position, technological or operational advances.

The above constructs are influenced by environmental uncertainty, which is referred to in the framework (see Chapter 7, Figure 7.2) as environmental turbulences. This uncertainty could be manifested in various forms, such as legal and regulatory constraints that might not appreciate Shariah requirements, market conditions or political and financial instability. This proposed definition is based on an organisational knowledge structure perspective, a perspective not frequently used to frame organisational concepts in the literature.

The third important contribution of this research study is the proposed framework for understanding religious orientation towards financial innovation in the context of IFIs (Figures 7.2, 7.3, A2.1, A2.2 and A2.3). This focused view of Shariah-induced financial innovation and engineering is particularly important for three reasons. Firstly, a focus on explicit areas for financial innovation, such as product development or processes, would provide a new perspective on innovations. This implies that religious orientation towards financial innovation, as the research findings showed, encourages the integration of religiously guided innovation into all areas of an IFI to better create a long-term sustainable Shariah compliant financial model.

Secondly, the formal recognition of an innovation that is based on religious orientation system, as a pervasive set of understandings, should reduce the instability and ambiguity found in the current traditional financial innovation, as was evident in the recent financial crisis. This was clear in the difficulty found in identifying the real generators and owners of the syndicated sub-prime mortgages and other financial products (Plosser, 2009). Finally, the conceptual framework provided here would help IFIs to formally identify and develop organisational conditions and competencies needed to fulfil their objectives as guided by their faith. As recent work has shown, a firm's ability to use its knowledge resources is a key factor in the development of dynamic capabilities (Subramaniam and Youndt, 2005).

The developed framework as presented in Chapter 7, Figure 7.2 and 7.3 and in Appendix 2 Figures A2.1, A2.2 and A2.3 would provide a robust standardised conceptual and empirical framework for the Islamic finance industry. This framework identifies what constitutes Shariah-oriented financial innovation and engineering that could resolve any existing ambiguity and the absence of clear conceptual framework in the industry that advocates best practice. This gap was evident in the literature review (Chapter 3) and from empirical perspective; this gap was also clear in the findings of the survey (Chapter 9) and interviews (Chapter 10).

The fourth contribution of this research study is from a practical perspective for IFIs and the Islamic finance industry as a whole. This contribution is developing an evaluative and measurement tool, provided by the research findings and the developed framework, to examine existing financial products on offer. The findings of this research study would enable IFIs to reflect on their current practices, processes, Shariah compliance framework for financial innovation and engineering in the NPD process. Furthermore, it would enable them to evaluate the financial products and services offered by them in the market.

This was demonstrated in Appendix 3 (documentary analysis) where existing products were examined by using the developed framework for financial innovation and engineering. This developed theoretical and practical framework would offer the Islamic finance industry a useful tool from Shariah compliance governance for the financial innovation and engineering process, product development governance structure, standardised regulatory governance structure for financial innovation and engineering in IFIs and a tool for conducting audit reviews for the NPD process in IFIs.

11.4 Policy Implications

This section discusses the implications of the research findings for various stakeholders. Four main stakeholders have identified who could benefit from the practical implication of the research findings; these are academics, regulators, the Islamic finance industry and banks and audit and risk managers. The policy implication for the identified stakeholders is detailed below. The key policy implication points to be mentioned are listed below:

11.4.1 The developed theoretical framework, which is based on the findings of the research, extends the existing theories to another field and concepts for further academic research.

11.4.2 The research findings provide an in-depth insight for academics, financial regulators, Islamic finance bodies such as AAOIFI, managers and students about the processes and structure of financial innovation and engineering in IFIs, in terms of their philosophy, governance, drivers and knowledge structure.

11.4.3 The developed practical framework and processes as emerged from the research findings could help all stakeholders understand the financial innovation and engineering process and appreciate its influencing factors.

11.4.4 The developed framework also provides financial regulators, central banks and Islamic finance industry regulators a practical framework that could form the basis to help them in formulating their own regulatory framework and policies in relation to IFIs.

11.4.5 The findings of the research along with the developed framework would aid bankers to understand their own processes in relation to financial innovation and engineering. They would also provide a useful practical tool for other professionals in the industry, such as risk, product development, audit managers and Shariah advisers, in their work.

Hence, the findings of this research study offer an in-depth insight into religiously guided processes and practices of financial innovation and engineering. The findings also address the lack of knowledge and research in the field of religious-based economics and finance model. The developed framework provides a measuring tool to assess financial practices of IFIs and their financial products on offer in the market.

Moreover, the findings of this research and the developed framework in Figures 7.2, A2.2 and A3.3 would provide the UK financial regulator, and other financial regulators beyond the UK, a valuable insight into the potential of standardised best practices of self-regulating and accountability driven by a religious-based banking culture. They would help financial regulators understand the dynamics of financial innovation and engineering in IFIs. Regulators and practitioners could use it as a measuring tool, or select suitable elements from the proposed framework to include it in their framework and testing of financial products and their design processes.

In the past the UK financial regulator's regulatory approach was based on the assumption that effective consumer protection would be achieved provided sales processes were fair and product feature disclosure was transparent. But, this approach has not been effective in preventing waves of severe customer detriment. They have therefore come to recognise that there are fundamental reasons why financial services markets do not always work well for consumers. In response, they started adopting a new regulatory approach which involves earlier regulatory intervention (DP 11/1 product intervention), engaging with firms to ensure that new products truly do serve the needs of the customers to whom they are marketed.

The UK regulator started to intervene earlier in the product value chain, proactively, to anticipate consumer detriment where possible and stop it before it occurs. They are looking in more detail at how firms design products and their on-going governance procedures to ensure that products function as intended and reach the right customers. This, however, did not resolve the issue and the development and offering of financial products that were harmful and scandals attached to many banks and their products continued to take place.

The findings of this research would provide the UK financial regulator, and other financial regulators beyond the UK, a great insight into standardised best practices of self-regulating and accountability driven by a religious-based banking culture. The developed conceptual and practical framework in Figures 7.2, 7.3, A2.1, A2.2 and A2.3 would help financial regulators understand the dynamics of financial innovation and engineering in Islamic banks. Moreover, practitioners, such as risk, audit, product development and Shariah compliance managers and officers would also be able to use the developed process and practical framework as a guiding and measuring tool. They could, at least, select suitable elements from the proposed framework to include it in their framework and testing of financial products and their design processes, as demonstrated in the documentary analysis process.

11.5 Reflection on the Research Process and Analysis

The process of conducting this research study and analysis of the data collected has been an exciting and rewarding process. The sequential triangulation based approach of questionnaire survey, interviews and documentary analysis, in addition to observation of the Islamic finance industry, has enabled the researcher to learn about the phenomenon in a more balanced manner and with increased confidence.

Communicative, pragmatic, and transgressive validity together with reliability are proposed as suitable criteria for justifying the findings of this interpretative approach research. In order to achieve communicative validity in the phase of generating the empirical material, a community of interpretations was created. This was achieved by establishing an understanding between the researcher and the research participants in the questionnaire and interviews about their role in collecting reliable data for the research. They were also reminded that the purpose of the interviews is to discuss their experience and views regarding financial innovation (Sandberg, 2005).

Furthermore, the interviews took the form of dialogue in order to achieve high communicative validity. When analysing the collected data, the communicative validity was achieved by striving for coherent interpretations. Hence, conflicting interpretations of the data were judged with respect to how coherent they were with the empirical material (Sandberg, 2005).

In the course of research and analysis, however, having a strong financial services experience and knowledge, as an expert in the Islamic finance industry, has helped me to a great extent and made me aware of the issues existing in the industry. It was important, though also sometimes difficult, to maintain objectivity in the research and its analysis by separating the researcher existing experience from the research, and learning about the phenomenon as an outsider without any preconceptions. This is in order to enable me to perform a critical reflective and objective interpretation and analysis of the data as possible (Ivankova *et al*, 2006; Bryman 2012; Ahrens & Chapman, 2006; Cresswell and Plano Clark, 2007). Nevertheless, this close relationship with the Islamic finance industry, although it may enrich the analysis and the deep understanding of the issue, it might have impacted the way the data was analysed or the presentation of the research findings and its objectivity.

By reflecting on the chosen research method, a case study or multiple case studies approach is may be suitable as well as a method. However, this approach would not offer the extent of collecting data from an extended sample of respondents that stretched over 4 continents, unless a substantial funding is available and at least a team of three researchers are conducting the multiple case studies. Given the limited resources, it is believed that the chosen approach provided better insight into the subject. The chosen method of triangulation based approach, to conduct this research study and analyse the data, thought to be appropriate as it could minimise subjectivity of the research findings, and provides more reliable and robust findings.

This research study provides an essential part of a bigger picture in the Islamic finance industry. The research findings contributed into changing the researcher's perception about practices of IFIs and the level of compliance with Shariah requirements. It also highlighted the importance of the decision making process of Islamic scholars, who approve new financial innovation and possible negative outcome due to an influencing charismatic scholar in the event of making a wrong Shariah ruling (see further discussion in Chapter 10, section 10.4.1, inverted Shariah approval process). The research process has reshaped and influenced the analytical and thinking process of the researcher to critically question existing assumptions in the field of this research.

11.6 Conclusion

By recalling the research questions and objectives that aimed at exploring religious orientation towards financial innovation and the existing practices of IFIs in relation to financial innovation and engineering, (Chapter 1, sections 1.8 and1. 9) and linking them to the findings of this research study (chapters 9, 10 and 11), this study aimed at addressing a gap in the innovation literature. This was achieved by building on the work done by previous research studies in the field of innovation orientation and boundary object theories, and seeking to apply those theories to a new field. This research study aimed at exploring the process of religious orientation towards financial innovation and Shariah compliance implementation in IFIs setting for financial engineering. It also unveiled the absence of clear identified conceptual framework, founding principles, guidelines and Shariah governance of financial innovation in IFIs.

The research attempted to establish and present the theoretical framework and process of enactment of religious orientation towards financial innovation and engineering. As a multi-level research study, it focused more on when and how individual agents are embedded in the philosophical culture and belief of financial institutions with religious orientation. The study also showed that the issue of financial innovation with religious orientation was not explored in the literature prior to this study. The role of religion and its possible positive influence in relation to human interactions and potential reflection of that role on finance, as practiced in the Islamic finance industry, was reflected upon in this study.

The developed framework enabled this study to explore both the financial innovation and engineering processes and the level of religious orientation and compliance with Shariah rules in IFIs, in that regard. It also examined the institutional purposive action to create, maintain, disseminate financial innovation, the new product development cycle and relevant governance processes in IFIs. Based on the research findings, this study proposed a conceptual framework for examining the religious orientation for financial innovation in the Islamic finance industry.

Based on the developed framework of religious orientation towards financial innovation, financial innovations in IFIs are driven by a mixture of IFI's religious orientation and strategic direction, the formal and informal systems, and the key actors' competencies. The learning philosophy, of the proposed framework, suggests that any work or activities carried out by the IFI should follow clear guidelines for the benefit of all stakeholders in the society, The concept of *Tazkiyah* (growth and purification) requires active participation in the material world, in order to build the earth and innovate to satisfy worldly needs in line with Shariah requirements as the main driver of financial innovation in IFIs.

Business history suggests through different examples that financial innovation in products or in processes alone is not, in most cases, sufficient to create long-term survival or a competitive advantage. There, however, as suggested by the reported findings of this research should be a collective set of understandings and beliefs, pervasively accepted throughout an IFI and likely to occur at all levels and functions, that facilitate continual processes to insure sustainable financial model.

Financial innovations today, even after the severe financial crisis of 2008, are and have been driven by competition among financial institutions, risk shifting, circumventing regulations and legal constraints and profit maximisation, rather than market demands and consumers' needs. This approach ignores society welfare and well-being, ethical financial and banking practices, average consumers and users of financial services and the impact on economic development. It focuses on the benefit of very small group in society in contrast to the benefit of all or at least most stakeholders in the society.

This view of financial innovation diverted the cycle of innovation as developed by the early economists with the objective of addressing particular financial needs in the market. However, as we have seen, it works, currently, in reverse; financial institutions create false financial needs in the market to sell their financial innovations for their sole benefit of profit maximisation, risk shifting and resolving liquidity issues. This practice refers to what some academics (Plosser, 2009; Poole, 2011; Duska 2009 and Jameson 2009) and regulators (Turner (former head of the Financial Services Authority), 2012) called as socially useless or harmful financial innovation.

The reasonable way forward, having diagnosed the disease, is to offer the remedy as painkillers do not make the disease go away and will not solve the problem. This remedy will require a cultural change in the financial system and banking practices that should be based on self-imposed moral and ethical criteria that govern the organisation and the cycle of innovation.

Hence, a religious-oriented structure and framework for providing financial innovation, as reported from the research findings, under which financial practices are structured around intrinsic checks and balances could be the sought after remedy. This is believed to make the ideal banking culture in the Islamic finance industry, to some extent, self-regulating. This is in contrast to the conventional system where the ethical framework has to be imposed and monitored by a regulator, such as the Financial Conduct Authority (FCA) in the UK and other regulatory authorities. This claim about Islamic banking's self-regulation and accountability, and its possible positive impact as a remedy to the traditional banking culture would require further research and closer examination.

Regulations are, thought to be, intrinsic to Islamic finance, Islamic finance is derived from rules and regulations of Shariah, without Shariah there would be no Islamic finance. Whereas, in conventional finance, the rules are an external addition to financial practices and may be hugely variable, depending on economic circumstances, competition, availability of resources, political ideology and many other factors.

This study addresses this considerable gap in the literature by placing past research results into an overall framework that should enhance understanding of religious orientation towards financial innovation. The proposed framework in this study would provide a measuring tool, which facilitates the testing and examining of each construct in the overall structure of financial innovation and engineering in the Islamic finance industry.

11.7 Avenues for future research

The most appropriate focus of future research is the broader global conceptualisation of religious orientation towards financial innovation in financial institutions, based on the elements defined in this study. The relative weight of each of the knowledge structure components and the organisational competencies in resources, technology, operations, employees, and markets and their overall influence by the religious-oriented structure of innovation that an organisation adopts should also be determined for such a measure. Specifically, the effects of financial innovation and engineering with religious orientation on innovation have yet to be examined empirically.

The view taken here is in accordance with that of Varadarajan and Jayachandran (1999) and others (e.g. Siguaw et al., 2006) who highlighted the need for research examining the effects of innovations in areas other than new products and the speed of new product introductions on firm performance. This gap has been addressed to a great extent in this study. Other areas of research include a comparison of religiously-oriented financial innovation and their counterparts, an analytical study of the influence of religious-oriented structure of financial institutions on the stability of financial system. Such relationships have, often, been assumed to hold true without rigorous, empirical research to provide support. This proposed conceptual framework will allow such testing of the difference that religious orientation would make to financial innovation.

References

AAOIFI. (2014). *Shariah Standards.* Accounting and Auditing Organization for Islamic Financial Institutions, AAOIFI*:* Bahrain.

'Aashour, Saead. Abdul Fattah, (no date), *Maser wa al Shaam fi 'Aser al Ayyoubean wa al Mamaleek,* Lebanon: Dar al Nahdah al 'Arabiyyah.

Abduh, 'Esa. (1974). *Al Iqtisad al Islami Madkhal wa Manhaj*, Cairo: Dar Nahdat Maser Liltiba'a wa al Nasher.

Abdul Azeem Abu Zaid. (2004). *Bay' al_Murabaha wa Tatbigatuho al_Mu'asirah fi al-Masaref Al Islameyyah. (credit sales and its current applications in Islamic banks***).** Dar al_Fikr: Damascus. (Arabic).

Abdul Meneam, Afer. M. (1979). *Al Niza al Iqtisadi al Islami*, Jeddah: Dar al Mujtama' al 'Ilmi.

Abdul Rahman, Ramadan. (2005). *Mawgef al sharia al Islameyyah mena al Bunook Wa al Mu'amalaat al_Masrifiya wa al_Ta'ameen*. Dar al Salaam: Cairo. (Arabic).

Abdul_Rahman, Yahia. (2010). *The Art of Islamic Banking and Finance , Tools and Techniques For community _ Based Banking,* John Wiley & Sons Inc.: New Jersey.

Abdullrahim, Najat. (2010). *Service Quality of English Islamic Banks.* Doctoral thesis, Bournemouth University.

Abernathy, W. J. and Utterback, J. M. (1978). Patterns of industrial innovation, *Technology Review*, 80 (7): 40 – 47.

Abernathy, W.J .and Utterback, J. (1978)**.** Pattenrns of industrial innovation, in Tushman, M.L and Moore, W.L. *Readings in the Management of Innovation,* New York: HaperCollins.

Abrahamson, E. (1991). Managerial Fad and Fashions: The Diffusion and Rejection of Innovation, *Academy of Management Review,* 16, (3), pp. 586 - 612.

Abu 'Obaid, al Qasim. Ibn Salaam. (1989). *Kitab al Amwal*, edited by: Muhammad 'Amarah, Beirut: Dar al Shorouq.

Abu Yousuf, Ya'qoub. Ibn Ibrahim. (1985). *Kitab al Kharaj*, edited by Ihsan Abbas, Beirut: Dar al Shorouq.

Abu-Sulayman, A. A. (1976). The Economics of Tawhid and Brotherhood, *Contemporary Aspects of Economic Thinking in Islam,* American Trust Publications: Indianapolis, IN.

Ackermann, Josef, in Michael Haliassos (editor). (2012). *Financial Innovation: Too Much or Too Little?* USA: MIT Press.

Adam, Nathif. J. and Thomas, Abdulkader. (2004). *Islamic Bonds, Your Guide to Issuing, Structuring and Investing in Sukuk*, London: Euromoney Books.

Adler, P. S. (2005). The evolving object of software development. *Organization*, *12*, 401- 435.

Aghion, P. and Tirole, J. (1994). The management of innovation, *The Quarterly Journal of Economics*, 109(4):1185 – 1209.

Ahmad, Ausaf. (1993). Contemporary Practices of Islamic Financing Techniques, *Islamic Research and Training Institute*, No. 20, 19 – 59.

Ahmad, K. (1971). *Islam: Basic Principles and Characteristics*. Karachi: University of Karachi.

Ahmed, Habib. (2011). *Product Development in Islamic Banks,* Edinburgh University press: Edinburgh.

Ahmed, Khalid. Abdul Rahman. (1976). *Al Tafkeer al Iqtisadi fi el Islam*, Damascus: Dar al Khaffaqeen.

Ahmed, Khurshid. (1980). Economic Development in an Islamic Framework, in Ahmed, Khurshid (ed.), *Studies in Islamic Economics*, Leicester: Islamic Foundation.

Ahrens, T & Chapman, C. S. (2006). Doing qualitative field research in management accounting: positioning data to contribute to theory. *Accounting, Organizations and Society, 31*(8), 819 – 841.

Al – Zuhayli Wahbah. (2002). *Al – Mu'amalaat al Malyyah al Mu'asirah,* Damascus: Dar al-Fikr. (Arabic).

Al 'Awadi, Rifa'at. (1987). Mena Al Turath al Iqtisadi, *Da'watu el Haqq*, 2, Vol 6, issue: 63.

Al Aqla, Ali, Abdul Raheem, W. and Abu Shariah, A. (2004). *Al Nizaam al Mali wa el Iqtisadi fi al Islam*, Riyadh, KSA: Al Rushed Publication.

Al Bouti, Saead. Ramadan. (1991). *Fiqh al Sirah al Nabawiyyah*, 10th edition, Damascus: Dar al Fikr.

Al Buti, M. Saeed. (2005). *Dawabit al Maslaha*. Damascus: Dar Al Fukr.

Al Dawoudi, Abu Ja'far. Ahmed. Ibn Naser. (2000). *Al Amwaal*, Kuwait: Bank al Kuwait al Sina'I.

Al Doori, Abdul Aziz. (1981). *Fi al Tanzeem al Iqtisadi fi Sader al Islam*, Beirut: Dar al Tali'ah.

Al Doori, Abdul Aziz. (1982). *Muqaddimah fi al Tareekh al Iqtisadi*, (4th ed.), Beirut: Dar al Talia'a.

Al Doori, Abdul Aziz. (1995). *Tareekh al 'Iraq al Iqtisadi fi al Qarn al Rabe' al Hijri*, (3rd ed), Beirut: Markaz Dirasaat al Wihda al Arabiyyah.

Al Farra`, Abu Ya'la. Muhammad. Ibn al Hussain. Al Hanbali. (1973). *Al Ahkaam al Sultaniyyah*, Beirut: Dar al Fikr.

Al Ghazali, Abi Hamed. Muhammad. Ibn Muhammad, (no date), *Ihya` 'Oloom al Deen*, Beirut: Dar al Ma'rifah.

Al Ghazali, Abu Hamid. (1987). *al-Mustasfa min 'illm al Usul*. Karachi: Idarat al Quran.

Al Habishi, Muhammad. Ibn Abdul Rahaman. Ibn Omar. (1978). *Al Baraka fi Fadel al Sa'I wa al Harakah*, Beirut: Dar al Ma'rifah.

Al Hamshari, Mustafa. (1985). *Al Nizam el Iqtisadi fi el Islam*, Riyadh: Dar al 'Oloom Lltiba'a wa al Nasher.

Al Hanbali, Ibn Rajab. (1988). *Al Istikhraj li Ahkaam al Kharaj*, Kuwait: Bank al Kuwait al Sina'I.

Al Haythami, Ali. Ibn Abi Bakr. (1980). *Majma' al Zawa`ed wa Manba' al Fawa`ed*, Mo`asaset al Ma'aref: Syria.

Al Jawziyyah, Ib al Qayyem. Shames al Deen. Muhammad. (1980). *Al Turoq al Hukmiyyah fi al Siyasah al Shar'iyyah*, Beirut: Maktabat al Mu`ayyad.

Al Jazari, Ibn al Atheer. (1978). *Al Kamel fi al Ttareekh*, Beirut: Dar al Fikr.

Al Khun, Mustafa (1994), *Athar al ikhtilaaf fi al aua'ed al ousoliyya fi ikhtilafi al fuqaha'a* Beirut: Mua' asaset al Risalah.

Al Mas'oudi, Abi al Hasan. Ali. Ibn al Hussain. (1973). Murouj al Dhab wa Ma'aden al Jawaher, edited by: Muhammad Muhyi al Deen, (5th ed), Beirut: Dar al Fikr.

Al Mawardi, Abu al Hasan, Ali Ibn Muhammad, Ibn Habib. (1985). *Al Ahkaam al Sultaniyyah wa al Wilayat al Diniyyah*, Beirut: Dar al Kutub al Islamiyyah.

Al Mawardi, Abu al Hasan. (2001). Al Rutbah fi Talab al Hisbah, Kuwait: Bank al Kuwait al Sina'I.

Al Muzaini, Khalid. Ibn Abdullah. (2007). *Al Fatwa wa Ta`keed al Thawabet al Shar'iyyah*. Saudi: King Fahd University.

Al Mydani, Abdul Rahman. Hasan Habanneka. (1996). *La Yasihhu an Yuqal al Insan Khalifatul Allah fi Ardihi Fahiyah Maqulatun Batilah*, Beirut: Alrayyan Publication.

Al Nadawi, Ali. Ahmed. (1993). *Al Qawa'ed al Fiqhiyyah*. 3rd ed. Damascus: Dar Al Qalam.

Al Najjar, Musleh. Abdul Hayy. (2003). *Ta`seel al Iqtisad al Islami*, Riyadh, KSA: Al Rushed Publication.

Al Omar, Fouad. (2003). *Muqadimmah fi Tareekh al Iqtisad al Islami wa Tatawroho (an Introduction of Islamic Economics History and its Development)*, Jeddah: Islamic Research and Training Institute.

Al Qalqashandi, Abi al 'Abbas. Ahmed Ibn Ali. (1963). *Subeh al A'asha fi Cina'ati al Insha`*, Cairo: Ministry of Education.

Al Qaradaghi Ali, (2010). *Al Madkhal ila al Igtisad al Islami 2nd* ed, Beirut: Dar al Basha'er.

Al Qasimi, Muhammad. J. (1976). *Islah al Masajid mena el Bida'ai wal 'awa`ed*, 3rd edition, Islamic Publication, Beirut: (*al maktab el Islami*).

Al Sader, Muhammad. Baqer. (1977). *Iqtisaduna (Our Economy)*, Lebanon: Dar al Kitab al Lubnani.

Al Saead, Mustafa. Kamel. (1970). *Mabad` 'Elm al Iqtisad*, Beirut: Dar al Nahda al Arabiyyah.

Al Sarkhacey, Shames al Addeen. (1978). *Al Mabsout*. 3rd ed. Lebanon: Dar al Ma'arefah Liltiba'a wa al Nasher.

Al Sawwaf, Ali. (1989). *Dareebat al 'Oshur fi al Dawlah al Islamiyyah al `oula*, Journal of Shariah and Islamic Studies, Kuwait University, Vol. 15, pp. 249 – 290.

Al Sharbini, Al Khateeb. (1957). *Mughni al Muhtaj 'ala al Minhaj*. Egypt: Matba'at 'esa al Babi al Halabi.

Al Shiraazi, Abdul Rahman Ibn Naser. (1946). *Nihayat al Rutbah fi Talab al Hisbah*, Cairo: Lajnat al Taleef wa al Tarjamah wa al Nasher publication.

Al Shqar, Omar. Suliman. (1991). *Tareekh al Fiqh al Islami*. Amman: Dar al Nafa`es.

Al Tha'alibi, Abdul Rahman. Ibn Muhammad, (1997). *Al Jawahir al Hisan fi Tafseer al Qur`an*, Vol 2, Dar Ihya` Beirut: al Turath al 'Arabi.

Al Thahabi, Shames al Deen, Muhammad Ibn Ahmed. Ibn Othman. (1996). *Ciyar I'laam al Nubalaa`*, Beirut: al Risalaah Publication.

Al Zarkashi, Muhammad. (1982). *Al Manthour fi al Qawa'ed*. Kuwait: Ministry of Religious Affairs.

Al Zarqa, Mustafa. (1989). *Shareh al Qawa'ed al Fiqhiyyah*. 2nd ed. Damascus: Dar al Fikr.

Al Zarqa, Mustafa. Ahmed. (1968). *Al Madkhal al Fiqhi al 'Aam*. Damascus: Tarabeen Publication.

Al Zarqa, Mustafa. Ahmed. (2012). *Al Madkhal al Fiqhi al 'Aaam*, (3rd edition), Damascus: Dar al Qalam.

Al- Zuhayli Wahbah. (2007a). *Al- Masaref el Islamiyyah , Hayy'at al Mauso'ah al- `Aarabeyyah :* Damascus. (Arabic).

Al-Zuhayli Wahbah. (2007b). *Financial Transactions in Islamic Jurisprudence, 2nd* edition, Damascus: Dar al- Fikr.

Al-Amine, Muhammad. al-Bashir Muhammad (2008), *Risk Management in Islamic Finance: (An Analysis of Derivatives Instruments in Commodity Markets), Brill: The Netherlands.*

Al-Barwari, Sha'ban. (2005). *Boursat al-Awraaq al-Maliyyah men Manzoor Islami, Dirasah Tahlilyyah Naqdiyyah*, Damascus: Dar al-Fikr. (Arabic).

Al-Bouti, Tawfeeq. (2005). *Al-Boyoa' al-sha'ah (common sales), 3rd* edition, Damascus: Dar Al-Fikr. (Arabic).

Al-Bukhari. M. (1985). *Sahih Al-Bukhari*, Damascus: Dar Al-Fikr.

Alchaar, Mohamad. Nedal, *(et al. (2009). Islamic Finance Qualification),* 3*rd* edition, London: Securities And Investment Institute.

Aldrich, H. E and Martinez, MA. (2001). May are called but few are chosen: an evolutionary perspective for the study of entrepreneurship, *(Entrepreneurship Theory & practice).* 25(4): 41 – 56.

Alexakis, Christos and Tasikouras, Alexandros. (2009). Islamic Finance: Regulatory Framework – Challenges Lying Ahead. *International Journal of Islamic and Middle Eastern Finance and Management*, Vol. 2, No. 2, PP. 90 – 104.

Al-Faruqi, I. R. A. (1976). *Foreword Contemporary Aspects of Economic Thinking in Islam*, American Trust Publications: Indianapolis, IN.

Ali, Mahfooz. (1968). *Al Ibda' fi Madhar al `Ibtida'*, Cairo: al Maktabah al Mahmoudiyah al Tijariyah.

Allen, F, and Gale, D. (1988). "Optimal Securities Design", *Review of Financial studies,* 1, 229 – 263.

Allen, F, and Gale, D. (1994). *Financial Innovation and Risk Sharing* , MIT Press: Cambridge, Mass.

Allen, Franklin; Yago, Glenn and Barth, James. R. (2012). *Financial Innovation (Collection)*, New Jersey: Pearson Education Inc.

Almutairi, Humoud. (2010). *A Comparison Between Islamic and Conventional Home Finance in Kuwait: Client perceptions of the Facilities Offered by the National Bank of Kuwait and Kuwait Finance House.* Doctoral thesis, Durham University. Available at Durham E – Theses Online: http: // etheses. dur. ac. uk / 543 /.

Al-Salem, Fouad. H. (2009). Islamic financial product innovation, *International Journal of Islamic and Middle Eastern Finance and Management* , Vol. 2,No. 3, pp. 187 – 200.

Amabile, Teresa M. (1997). Motivating Creativity in Organizations: On Doing What You Love and Loving What You Do. *California Management Review*, 40 (1): 39-58.

Anderloni, Luisa LIewellyn, T. and Schmidt, Reinhard H. (2009). *Financial Innovation in Retail and Corporate Banking*, Edward Elgar Publishing: UK.

Anderson, p. (1999). Complexity theory and organization science, *Organization Science, 10 (*3): 216 – 232.

Angbazo, L. (1997). Commercial Bank Net Interest Margins, Default Risk, Interest Rate Risk, and off Balance SheetBanking, *Journal of Banking and Finance*, 21, No. 1 (1997), 55- 87.

Anwar, Muhammad, (1992). Islamic Banking in Iran and Pakistan: a Comparative Study, *The Pakistan Development Review*, 31: 4, Part II, pp. 1089 - 1097.

Arbrey, Patricia Buckley; Anne Walthall and James B. Palais, (2008). *East Asia: A Cultural, Social, and Political History*. US: Houghton Mifflin.

Archer, Simon and Abdel Karim, Rifaat, Ahmed. (Editors). (2007). Specific Corporate Governance Issues in Islamic Banks, *Islamic Finance: the Regulatory Challenge*, John wilsey & Sons: Singapore.

Archer, Simon and Haron Abdullah. (2007). Operational Risk Exposure of Islamic Banks, *Islamic Finance: the Regulatory Challenge*, Archer, Simon and Abdel Karim, Rifaat Ahmed (Eds), John Wilsey & Sons: Singapore.

Ariff, Mohammad. (1988). Islamic Banking, *Asian-Pacific Economic Literature*, Vol. 2, No. 2, September (1988), pp. 46 – 62.

Ariffin, Noraini. Mohd. (2005). *Enhancing Transparency and Risk Reporting in Islamic Banks,* Doctoral thesis, University of Surrey: Surrey.

Arrif, M. (1982). Monetary policy in an interest free Islamic economy: nature and scope, in Arrif, M. (ed), *Monetary and Fiscal Economic of Islam,* Jeddah: International centre for Research in Islamic Economics.

Arrow, K.J. (1962). Economic welfare and the allocation of resources to invention, in Nelson RR (ed.) *The Rate and Direction of Inventive Activity: Economic and Social Factors,* pp. 609 - 625, Princeton NJ: Princeton University Press.

Arthur, W. B. (1989). Competing technologies, increasing returns, and lock-in by historical events, *The Economic Journal*, 99 (394): 116 – 131.

Arthur, W.B. (2001). How growth builds upon growth in high-technology, Annual Sir Charles Carter Lecture, *Northern Ireland Economic Council*, Belfast: Northern Ireland.

Asad, M. (1993). *Islam at the Crossroads,* Dar al-Andalus Ltd: Gibraltar.

Athanasoglou, P.P. S.N. Brissimis, and M.D. Delis, (2008). Bank Specific, Industry Specific and Macroeconomic Determinants of Bank profitability, *Journal of International Financial Marktes, Institutions and Money,*18, No. 2 (2008). 121 – 36.

Atuahene-Gima, Kwaku and Ko, A. (2001). An Empirical Investigation of the Effect of Market Orientation and Entrepreneurship Orientation Alignment on Product Innovation. *Organization Science*, 12 (1): 54-74.

Baccaro, Lucio. (2010). Does the Global Financial Crisis Mark a Turning Point for Labour? *Socio Economic Review,* 8, 341 – 376.

Bahattacharyya, S, and Nada, V, (1996). *Client Discretion, Switching costs and the Introduction of New Financial Products*, Working Paper, University of Michigan.

Balala, Maha-Hanaan, (2010). *Islamic Finance and Law: Theory and practice in a Globalized World.* B. Tauris & Co. Ltd: London.

Bank for International Settlement. (1986). Recent Innovations in International Banking. Basle: BIS.

Bank Negara Malaysia. (2005). *Money and Banking in Malaysia*, Kuala Lumpur.

Barney, Jay B. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1): 99 – 120.

Barrett, M & Oborn, E . (2010). Boundary object use in cross-cultural software develop ment teams. *Human Relations*, *63*, 1199-1221.

Barry, Brian. (2005). *Why Social Justice Matters*, Polity: UK.

Bartel, C. A. R. Garud. (2003). Narrative knowledge in action: Adaptive abduction as a mechanism for knowledge creation and exchange in organizations. M. Eastery - Smith, M. A. Lyles, eds. *Handbook of Organizational Learning and Knowledge Management*. Blackwell, Malden, MA, 324-342.

Baumann, U. and Nier, E. (2003). Market Discipline and Financial Stability: Some Empirical Evidence. *Financial Stability Review,* June, PP. 134 – 41.

Bechky, B. A. (2003). Sharing meaning across occupational communities: The transformation of understanding on a production floor. *Organization Science*. 14, (3), 312-330.

Becker, M.C. (2004). Organizational routines: a review of the literature, *Industrial and Corporate Change,* 13 (4): 643 – 678.

Beekun, Rafik I. and Badawi, Jamal A. (2005). Balancing Ethical Responsibility among Multiple Organizational Stakeholders: The Islamic Perspective, *Journal of Business Ethics,* (2005) 60: 131 – 145.

Bentley, Jerry. H. (1993). *Old World Encounters: Cross-Cultural Contacts and Exchanges in Pre-Modern Times,* New York: Oxford University Press.

Berger, A. N. (1995). The Relationship Between Capital and Earnings in Banking, *Journal of Money, Credit and Banking,* 27, No. 2 (1995). 432-56.

Berthon, Pierre, Hulbert, James M. and Pitt, Leyland F. (1999). To Serve or Create? Strategic Orientations toward Customers and Innovation. *California Management Review,* 42 (1): 37-58.

Bhattacharyya, Sugato and Nada, Vikram. (2000). Client Discretion, Switching Costs, and Financial Innovation, *The Review of inancial Studies,* Vol. 13, No 4, 1101 – 1127.

Bhattacharyya, Sugato and Nada, Vikram. (2000). Client Discretion, Switching Costs, and Financial Innovation, *The Review of Financial Studies,* Vol. 13, No. (4), 1101 - 1127.

Blum, J. (2002). Subordinated Debt, Marker Discipline and Bank's Risk Taking, *Journal of Banking and Finance*, Vol. 26, No. 7, pp. 1427 – 40.

Bødker, S. (1998). Understanding representation in design. *Human – Computer Interaction, 13* (2), 107-125.

Boland, R. J. Jr. R. V. Tenkasi. (1995). Perspective making and perspective taking in communities of knowing. *Organization Science*. 6, (4), 350-372.

Boot, A. W. A, and Thakor, A. V, (1997). Banking Scope and Financial Innovation. *The Review of Financial Studies,* Winter, Vol. 10, No, 4, pp. 1099 – 1131.

Bourdieu, Pierre, with Loic, Wacquant. (1992). *Reponses*, Paris: Seuil.

Bourdieu, Pierre. (1987). The Force of Law: Toward a Sociology of the Juridical Field, *Hastings L. J*. 38, 814.

Bourdieu, Pierre. (1989). Social Space and Symbolic Power, *Sociological Theory,* 7, No.1, pp. 14 – 25.

Bourdieu, Pierre. (1990). *In Other Words, Essays Towards a Reflexive Sociology*, Oxford: Polity Press.

Boyed, J. and De Nicolo, G. (2005). The Theory of Bank Risk-Taking and Competition Revisited, *Journal of Finance*, 60, 1329 – 43.

Boyer, Robert. (2007). Assessing the Impact of Fair Value upon Financial Crises, *Socio Economic Review*, 5, PP. 779 – 807.

Brozen, Y. (1951). Invention, innovation, and imitation, *American Economic Journal,* 41 (2), pp. 239 – 57.

Bruns, H. C. (2013). Working alone together: Coordination in collaboration across domains of expertise. *Academy of Management Journal*, *56*, 62-83.

Bryman, A .(2012). *Social Research Methods*. 4 ed. New York: Oxford University Press Inc.

Buckle, Michael J. Buckle, Mike and Thompson, John. (2004). *The UK Financial System: Fourth Edition*, Manchester: Manchester University Press.

Burgelman, RA and Sayles LR. (1986). *Inside Corporate Innovation: Strategy, Structure, and Managerial Skills*, Free Press, New York: Collier - Macmillan.

Burgelman, RA. (1983). A process model of internal corporate venturing in the diversified major firm, *Administrative Science Quarterly,* 28 (2): 223 – 244.

Burns, T & Stalker, G. M. (1961). *The management of innovation*. London: Tavistock Publications.

Burns, Tom and Stalker, G. M. (1977). *The Management of Innovation*, 2^{nd} ed. London: Tavistock.

Cantori, L. J. and A. Lowrie. (1992). Islam, Democracy, The State and The West, *Middle East Policy* 1, 49 – 61.

Caprio G. Jr. and Levine, R. (2002). Corporate Governance of Banks: Concepts and International Observations, Paper Presented at the *Conference on Building the pillars of Financial Sector Governance: The Roles of Public and Private Sectors,* organized by the World Bank, IMF, and Brookings Institutions.

Carbo, S, Gardner, E. P. M, and Molyneux, P. (2005). *Financial Exclusion,* Palgrave MaCmillan: New York.

Carcary, M. (2011). Evidence Analysis using CAQDAS: Insights from a Qualitative Researcher, *The Electronic Journal of Business Research Methods*, Volume 9, Issue 1, 10 -24.

Carlile, P. R. (2002). A Pragmatic View of Knowledge and Boundaries: Boundary Objects in New Product Development. *Organization Science,* 13 (4) 442-455.

Carlile, P. R. (2004). Transferring, translating, and transforming: An Integrative Framework for Managing Knowledge Across Boundaries. *Organization Science*. 15 (5) 555-568.

Carlile, P. R. E. S. Rebentisch. (2003). Into the Black box: The Knowledge Transformation Cycle, *Management Science*. 49 (9) 1180-1195.

Catherine Cassell, Victoria Bishop, Gillian Symon, Phil Johnson and Anna Buehring, (2009). Learning to be a Qualitative Management Researcher, *Management Learning,* (2009). 40: 513.

Chandler, A.D. (1962). Strategy and Structure: *Chapters in the History of American Industrial Enterprise,* MIT press: Cambridge, MA.

Chandler, A.D. (1992). Organizational capabilities and the economic history of the industrial enterprise, *The Journal of Economic Perspectives*, 6 (3):79 – 100.

Chapra, M. U. (1992). *Islam and the Economic Challenge,* International Institute of Islamic Thought, Herndon, VA.

Charkham J. (2003). *Guidance for the Directors of Banks,* Global Corporate Governance Forum, Focus 2, The World Bank.

Chesbrough, H. W. and Teece, D. J. (1996). When is virtual virtuous? Organizing for innovation, *Harvard Business Review*, 80 (8): 65 – 74.

Chesbrough, HW. (2003). *Open Innovation: The New Imperative for Creating and Profiting from Technology*, Boston MA: Harvard Business School Press.

Choudhury, M. Alam. (1986). *Contribution to Islamic Economic Theory*, Macmillan: Basingstoke and London.

Cohen, W. M. and Levinthal, D. A. (1990). Absorptive capacity: a new perspective on learning and innovation, *Administrative Science Quarterly*, 35(1): 128 – 152.

Cohen, W. M. and Levinthal, D.A. (1990). A New Perspective on Learning and Innovation, *Administrative Science Quarterly*, Vol. 35, No. 1, 128 – 52.

Cook, M. A. (1970). Introductory Remarkes, In Cook, M. A. (ed.), *Studies in the Economic History of the Middle East*, Oxford: Oxford University Press.

Corbin, J. M. & Strauss, A. (1990). Grounded theory research: Procedures, canons, and evaluative criteria. *Qualitative Sociology*, *13*, 3 – 21.

Corbin, J. M. & Strauss, A. L. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Thousand Oaks, SAGE: CA.

Cordella, T. and Yeyati, E.L. (1998). Public Disclosure and Failure, *CEPR Discussion Paper NO. (1886).*

Corley, K. G. & Gioia, D. A. (2004). Identity ambiguity and change in the wake of a corporate spin-off. *Administrative Science Quarterly*, *49*, 173 – 208.

Corrocher, N, Malerba, F. and Montobbio, F. (2007). Schumpeterian patterns of innovative activity in the ICT field, *Research Policy*, 36 (3): 418 – 432.

Cresswell, J.W. and Plano, Clark, V. L. (2007). *Designing and Conducting Mixed Methods*

Czinkota, M, Kotabe, M. (2001). *Marketing Management* , 2nd ed. South - Western College Publishing, pp. 118 – 133.

De Young, R. and T. Rice. (2004). Non-Interest Income and Financial Performance at US Commercial Banks, *Financial Review,* 39, No. 1 (2004), 101 – 27.

Delving, J. A. (2005). Detailed Study of Financial Exclusion in the UK, *Journal of Consumer Policy,* 28, pp. 75-108.

Denzin, N. K. and Y. S. Lincoln. (2003). *Collecting and Interpreting Qualitative Materials* 2nd ed. California: Sage.

Devahuti, D. (1965). *India and ancient Malaya (from the earliest times to circa A.D. 1400)*, Published by D. Moore for Eastern Universities Press, its original form was printed by: California: the University of California.

DiVanna, J. A. Sreih, A & Ainley, M. (2009). *A new financial dawn: The rise of Islamic finance*: Leonardo and Francis Press.

Donaldson, T. and Preston, L. (1995). The stakeholder theory of the corporation: concepts, evidence, and implications. *Academy of Management Review*, 20, 65 – 91.

Dosi, G. and Coriat, B. (1998). Learning how to govern and learning how to solve problems: on the co-evolution of competences, conflicts and organizational routines, in Chandler JAD et al. (eds), *The Dynamic Firm: The Role of Technology, Strategy, Organization and Regions*, pp. 103-133, New York: Oxford University Press.

Drucker, Peter. F. (1986). *Innovation and Entrepreneurship*, UK: Elsevier LTD.

Drucker, Peter. F. (1998). The discipline of innovation, *Harvard Business Review*, 63 (3): 3 – 8.

Duffle, D, and Rahi, R. (1995). Financial Market Innovation and Security Design, *Journal of Economic Theory,* 65, 1-42.

Duska, Ronald F. (2009). Corruption, Financial Crises and the Financial Planner, *Journal of Financial Service Professionals*, March (2009), 14-16.

Dusuki. Asyraf Wajdi and Mokhtar, Shabnam. (2010). Critical Appraisal of Shariah Issues on Ownership in Asset - Based Sukuk as Implemented in the Islamic Debt Market. *ISRA Research Paper*, (No. 8/2010).

Dusuki. Asyraf Wajdi, et al. (2012). A Framework for Islamic Financial Institutions to Deal with Shariah non-compliant Transactions. *ISRA Research Paper*, (NO. 42/2012).

Dwabeh, Ashraf. Muhammad. (2004). *Sanadeeq al Istethmar fi al Bunook al Islameyyah bayna al Nazariyyah wa al Tatbeeq*, Cairo, (Arabic): Dar al Salaam.

El-Ashker, Ahmed. (1987). *The Islamic Business Enterprise*, UK and USA: Croom Helm.

Eaton, G. (1994). *Islam and the Destiny of Man*, the Islamic Texts Society: Cambridge.

Edmondson, a. C. and Mcmanus, S. E. (2007). Methodological Fit in Management Field Research, *Academy of Management Review*. Vol. 32, No. 4, 1155 – 1179.

El-Diwany, Tarek (editor). (2010). *Islamic Banking and Finance: What It Is and What It Could Be*, UK: 1st Ethical Charitable Trust.

El-Diwany, Tarek. (2010). *The Problem With Interest*, 3rd Edition, Kreatoc Ltd: UK.

El-Gamal, Mahmoud. (2006). *Islamic Finance: Law, Economics and Practice*, New York: Cambridge University Press.

Euben, Roxanne. L. (2002). Contengent Borders, Syncretic Perspectives: Globalisation, Political Theory and Islamizing Knowledge, *International Studies Review*, 4, No. 1.

Financial Holding Companies. (2006). *Journal of Banking and Finance,* 30, No. 8 (2006), 2131-61.

Finnerty, J. D. (1992). An Overview of Corporate Securities Innovation, *Journal of Applied Corporate Finance,* 4, pp. 23 – 39.

Fiol, C. Marlene. (2001). Revisiting an Identity-Based View of Sustainable Competitive Advantage. *Journal of Management*, 27 (6): 691- 9.

Foss, K. Foss, N. Klein, P. and Klein, S. (2007). The entrepreneurial organization of heterogeneous capital. *Journal of Management Studies*, 44, 1165 – 87.

Foster, Alan. (2010). Initiative March, (2010): a Round-up of Products, Initiatives, Mergers and Failures, *Business Information Review*, Vol. 27 (1), 65 – 80.

Frame, Scott. W. and White, Lawrence J. (2010). *Technological Change, Financial Innovation,* and Diffusion in Banking, Working paper (2009) – 10, DIANE publishing.

Freeman, C. (1991). Networks of innovators: a synthesis of research issues, *Research Policy*, 20(5):499 – 514.

Freeman, Chris. (1994). *Innovation and Growth*. In: Handbook of Industrial Innovation, Part I. Mark Dodgson and Roy Rothwell (eds.). Aldershot, UK: Edward Elgar Publishing Limited, 78-93.

Freeman, Christopher, (1982). *The Economics of Industrial Innovation*, 2nd edition, Frances Pinter: London.

Freeman, R. E. (1984). *Strategic Management: A Stakeholder Approach*. Boston, MA: Pitman.

Friedman, A. and Miles, S. (2002). Developing stakeholder theory. *Journal of Management Studies*, 39, 1–21.

Financial Services Authority. (2007). Islamic Finance in the UK: Regulation and Challenges, FSA Paper, Accessed on 12 October 2013, Available at: http://www.fsa.gov.uk/ pages/Library/ Communication/ Speeches /2007/ cb.shtml.

Gambling, T. and R. Karim. (1991). *Business and Accounting Ethics in Islam*, London: Mansell.

Garcia, Rosanna and Calantone, Roger. (2002). A Critical Look at Technological Innovation Typology and Innovativeness Terminology: A Literature Review. *Journal of Product Innovation Management*, 19 (2):110 – 32.

George, Gerard; McGahan, Anita M. and Prabhu, Jaideep. (2012). Innovation for Inclusive Growth: Towards a Theoretical Framework and a Research Agenda**,** *Journal of Management Studies*, 49:4, June (2012),1467-6486 .

Gharajedaghi, Jamshid and Ackoff, Russell L. (1984). Mechanisms, Organisms and Social Systems. *Strategic Management Journal*. 5(3): 289-300.

Ghazanfer, S.M. and Islabi, A. Azim. (1990). Economic Thought of an Arab Scholastic: Abu Hamid Al Ghazali, *History of Political Economy*, 22 (2) 381 – 403.

Gioia, D. A, & Thomas, J. B. (1996). Identity, image and issue interpretation: Sensemaking during strategic change in academia. *Administrative Science Quarterly*, *41*, 370 – 403.

Govindrajan, V. and Trimble, Chris. (2005). Organization DNA for strategic innovation, *California Management Review*, Vol. 47 No. 3, pp 47 – 76.

Graham, M.B.W and Shuldiner, A.T. (2001). *Corning and the Craft of Innovation*, New York: Oxford University Press.

Green, R. M. (1993). *Centesimus Annus*: A Critical Jewish Perspective, *Journal of Business Ethics*, 12, 945 – 954.

Greuning, Hennie van and Iqbal, Zamir. (2007). Banking and the Risk Environment, *Islamic Finance: the Regulatory Challenge*, Archer Simon and Abdel Karim, Rifaat. Ahmed (Eds), John Wilsey & Sons: Singapore.

Greuning, Hennie Van and Iqbal, Zamir. (2008). *Risk Analysis for Islamic Bank*, The World Bank: Washington DC.

Guba, E. G. (1990). The alternative paradimn dialog. In *The paradimn dialog* edited by E. G. Guba. Newbury Park, CA: Sage, 17 – 30.

Hadjimanolis, Athanasios. (2000). A Resource-Based View of Innovativeness in Small Firms. *Technology Analysis and Strategic Management*, 12(2): 263-81.

Haleem, Ibrahim. Beak. (1988). *Al Tuhfa al Halimiyah fi Tareakh al Dawlah al 'Othmaniyyah*, Beirut: Mu`ssaset al Kutub al Thaqafiyyah.

Hamed, Mahmoud. H. (2000). *Al Nizam al Mali wa el Iqtisadi fi el Islam*, Riyadh: Dar al Nasher al Daowli.

Hamel, G. (2006). The why, what, and how of management innovation, *Harvard Business Review*, 84(2):72 – 84.

Haron Abdullah and Hock, John. Hin. (2007). Inherent Risk: Credit and Market Risks, *Islamic Finance: the Regulatory Challeng* , Archer, Simon and Abdel Karim Rifaat Ahmed (Eds), John Wilsey & Sons: Singapore.

Haron, S. (1995). The Framework and Concept of Islamic Interest-Free Banking, *Journal of Asian Business*, 11: 26 – 39.

Hasan, Zulkifli. (2010). Regulatory Framework of Shari'ah Governance System in Malaysia, GCC Countries and the UK, *Kyoto Bulletin of Islamic Area Studies*, 3-2 (March 2010), pp. 82 – 115.

Hassan, H.H. (1992). The Jurisprudence of Financial Transaction, Discussion, *Lectures on Islamic Economics*, (Eds): Islamic Research and Training Institute, Islamic Development Bank. Ausaf Ahmad and Kazim Raza Awan, Jeddah .

Hersi, Warsame. Mohamed. (2009). *The Role of Islamic Finance in Tackling Financial Exclusion in the UK*. Doctoral thesis, Durham University. Available at Durham E-Theses Online: http://etheses.dur.ac.uk/23/.

Hirtle, B.J. and K. J. Stiroh. (2007). The Return to Retail and the Performance of US Banks, *Journal of Banking and Finance*, 31, No. 4 (2007), 1101 – 33.

Hitti, Philip K. (1963). *History of the Arabs: from the Earliest Times to the Present*, 8th Ed., Macmillan & Co: UK.

Homburg, Christian, Hoyer, Wayne D. and Fassnacht, Martin. (2002). Service Orientation of a Retailer's Business Strategy: Dimensions, Antecedents, and Performance Outcomes. *Journal of Marketing*, 66 (4): 86-101.

Hounshell, D.A. (1992). Continuity and change in the management of industrial research: the Du Pont Company, (1902-1980), in Dosi G, Giannetti R and Toninelli PA (eds), *Technology and the Enterprise in a Historical Perspective*, pp. 231 – 259, Oxford: Oxford University Press.

Hounshell, D.A. (1996). The evolution of industrial research in the United States, in Rosenbloom RS and Spencer WJ (eds), *Engines of Innovation: US Industrial Research at the End of an Era*, pp. 13 - 85, Boston MA: Harvard Business School Press.

Hughes, J. R. (1987). The evolution of large technological systems, in Bijker WE, Hughes JR and Pinch TR (eds) *The Social Construction of Technological Systems: New directions in the Sociology and History of Technology*, pp. 51- 82, Cambridge MA: MIT Press.

Hult, G.Tomas M. Hurley, Robert F. and Knight, Gary A. (2004). Innovativeness: Its Antecedents and Impact on Business Performance. *Industrial Marketing Management*, 33(5): 429-38 (July).

Hurley, Robert F. and Hult, G.Tomas M. (1998). Innovation, Market Orientation, and Organizational Learning: An Integration and Empirical Examination. *Journal of Marketing,* 62(3): 42-54.

Ibn ‘Ashur, Muhammad Tahir. (1966). *Maqasid al-Shariah al-Islamiyyah.* Tunis: Matba’at al-Istiqamah.

Ibn al Jawzi, Jamal al Deen. Abi al Faraj. (1995). *Al Muntazam fi Tawareekh al Mulouk wa al Omam,* edited by: Suhail Zakkar, Beirut: Dar al Fikr.

Ibn Khaldun, Abdul Rahmaan. Ibn Muhammad, (no date), *Muqaddimat Ibn Khaldoon*, edited by: Ali Abdul Wahed Wafi, Cairo: Dar Nahdat Maser for Publications.

Ibn Khaldùn. (1958). *The Mùqaddimah: An Introduction to History*, Princeton University Press, Complete three volume English translations by Franz Rosenthal. Princeton: An abridged English version by N. J. Dawood for Princeton University Press.

Ibn Mandhur, M, Ibn Makram. (2009). *Lisan Al Arab*, DKI: Beirut.

Ibn Rushd, Al Qadi. (1988). *Al Muqadimaat al Mumahidaat*. Beirut: Dar Al Ghareb al Islami.

Ibn Taymiyyah, Ahmed. (1973). *Al Hisbah Wal Islam*, Kuwait: Dar al Arqam.

Ibn Taymiyyah, Taqyyul Deen Ahmed. (1994). *Al Khilafah wa Al Mulk*, revised by Hammad Salamah, (2ed.), Jordan: Al Manar Publication.

Iqbal, Munawar and Khan, Tariqullah. (2005). *Financial Engineering and Islamic Contracts,* Palgrave MacMilan: Hampshire.

Iqbal, Zamir. (1999). *Financial Engineering in Islamic Finance*, Proceedings of the Second Harvard University Forum on Islamic Finance: Islamic Finance into the 21st Century, Cambridge, Massachusetts. Centre for Middle Eastern Studies, Harvard University. pp. 229-238.

Iqbal, Zubair and Mirakhor, Abbas. (1987). *Islamic Banking*, International Monetary Fund: Washington, D. C.

Ismail, Muhammed. Imran. (2010). *Legal Stratagems (Hiyal) and Usury in Islamic Commercial Law,* a PhD thesis submitted to Birmingham University in May (2010).

Issawi, Charles. (1991). *An Economic History of the Middle East and North Africa*, Columbia: Columbia University Press.

Ivankova, V. Nataliya, et al. (2006). Using Mixed Methods Sequential Explanatory Design: From Theory to Practice, *Field Methods*, 18:3, pp. 2 – 20.

Jameson, Daphne. A. (2009). Economic Crises and Financial Disasters, The Role of Business Communication, *Journal of Business Communication*, Volume 46, Number 4, October (2009), 499 – 509.

Jelinek, M. (1979). *Institutionalizing Innovation: A Study of Organizational Learning Systems*, New York: Praeger.

Jelinek, M. and Markham, S. (2007). Industry- university IP relations: integrating perspectives and policy solutions, *IEEE Transactions on Engineering Management*, 54 (2): 257 – 267.

Kahf, Monzer. (2004). Islamic Banks: The Rise of a New Power Alliance of Wealth and Shari'a Scholarship, *The Politics of Islamic Finance*, Edinburgh University Press: Edinburgh, 17 – 36.

Kamali, M. Hashim, (2000). *Islamic Commercial Law*, Islamic Text Society: Cambridge.

Kaminsky, G. L. and Reinhart, C. M. (1999). The Twin crises: The Causes of Banking and balance of Payments Problems, *American Economic Review*, 89, 473 – 500.

Kaminsky, G.L. and Reinhart, C. M. (2000). On Crises, Contagion, and Confusion. *Journal of International Economics*, 51, 145 – 168.

Kanter, R.M. (2002). Strategy as improvisational theatre, *MIT Sloan Management Review*, 43(2):76 – 81.

Kanter, RM. (2008). Makes great companies great? *Computerworld*, 42(2): 36 – 26.

Katibi, Ghayda. (1994). *Al Kharaj Menzu al Fateh al Islami Hatta Awaset al Qarn al Thaleth al Hijri: al Mumarasaat wa al Nazariyyah*, Beirut: Markaz Dirasaat al Wihda al Arabiyyah.

Katila R. and Ahuja, G. (2002). Something old something new: a longitudinal study of search behavior and new Production, *Academy of Management Journal*, Vol. 45.

Kazem, Muhsen. (1989). *Tareekh al Fikr al Iqtisadi Ibtida`n benasha`tihi wa Intiha`n bel Mareksiyyah*, Kuwait: Kuwait University.

Keller, G. and Warrack, B. (2002), *Statistics for Management and Economics*, (5th edition), Duxbury: Thompson Learning.

Kerr, Malcolm. H. (1971). *The Arab Cold War: Gamal Abd Al - Nasir and His Rivals, (1958-1970).* 3rd ed. London: Published for the Royal Institute of International Affairs by Oxford University Press.

Keynes, J. A. M. (1972). *The Collected Writings of John Maynard Keynes*, London: Macmillan for the Royal Economic Society.

Khallaf, Abdel Wahhab. (1942). *The Science of Jurisprudence, Ilm Usul al-Fiqh,* Syria: Dar al-Qalam Publication and Distribution.

Khan, Ghulam. Ishaq. (1984). Basic Issues in Islamic Banking, *Journal of Banking and Finance,* 1, 2, p. 24.

Khan, M, Fahim. (1995). *Essay in Islamic economics.* Leicester: The Islamic Foundation.

Khan, Muhammad Akram. (1994). *An Introduction to Islamic Economics,* Islamabad: The International Institute of Islamic Thought.

Khan, Muhammad. M. (1996). *Sahih al-Bukari*, KSA: Darussalam.

Khir, Kamal; Gupta, Lokesh and Shanmugam, Bala, (2008). *Longman Islamic Banking a Practical Perspective*, Malaysia: Pearson.

Kimberly, J. (1981). Initiation, Innovation and institutionalisation in the Creation Process, in. *The Organisational Life Cycle: Issues in the Creation, Transformation and Decline of Organisations* , Jossey-Bass: San Francisco.

King, Adelaide Wilcox and Zeithaml, Carl P. (2003). Measuring Organizational Knowledge: A Conceptual and Methodological Framework. *Strategic Management Journal*, 24(8): 763 – 72.

King, N. (2004). Using Templates in the Thematic Analysis of Text, in C. M. Cassell and G. Symon (eds) *Essential Guide to Qualitative Methods in Organizational Research*, pp. 256 – 70. Sage: London.

Kling, Arnold. (2010). The Financial Crisis: Moral Failure or Cognitive Failure? *Harvard Journal of Law & Public Policy,* Vol. 33, No. 2 508 – 518.

Knorr Cetina, K. (1997). Sociality with Objects. *Theory, Culture & Society*, 14, 1-30.

Knorr Cetina, K. (1999). *Epistemic Cultures: How the Sciences Make Knowledge*. Cambridge, MA: Harvard University Press.

Kokasal, Ismail. (2000). *Taghayur al Ahkaam fi al Shari'ah al Islamiyyah*. Beirut: Dar al Risalah.

Kondratieff, N. D. (1935/51). The long waves in economic life', *Review of Economic Statistics* , Vol. 17, 6 – 105 (1935), reprinted in Haberler, G.(ed), *Readings in Business Cycle Theory,* Richard D. Irwin, Homewood, IL (1951).

Kosmidou, K. and C. Zopounidis. (2008). Measurement of Bank Performance in Greece, *south Eastern Europe Journal of Economics,* 1, (2008), 79 – 95.

Kosmidou, K. F. Pasiouras, and A. Tsaklangano. (2007). Domestic and Multinational Determinants of Foreign Bank Profits: The Case of Greek Banks operating Abroad, *Journal of Multinational Financial Management,* 17, No. 1 (2007), 1 – 15.

Kramer, M. and Porter, M. (2006). Strategy and society: the link between competitive advantage and corporate social responsibility. *Harvard Business Review*, 84, 78 – 93.

Kumar, Sameer and Phrommathed, Promma. (2005). *New product Development, An Empirical Effects of Innovation Strategy, Organisation Learning, and Market Conditions* , Springer Science and Business Media Inc: New York.

Kuran, Timur. (1986). The Economic System in Contemporary Islamic Thought (Alm-Giving Zakat), *International Journal of Middle East*, Vol. 18, pp. 143 – 9.

Kuran, Timur. (2011). *The Long Divergence, How Islamic Law Held Back the Middle East*, New Jersey: Princeton University Press.

Lane, P.J, Koka, B.R. and Pathak, S. (2006). The reification of absorptive capacity: a critical review and rejuvenation of the concept, *The Academy of Management Review*, 31(4): 833 – 863.

Latour, B. (1996). On Inter-objectivity. *Mind, Culture, Activity*, 3, (4), 228-245.

Latour, B. (2005). *Reassembling the Social: An Introduction to Actor Network Theory*. UK: Oxford University Press.

Lazonick, W. and Prencipe, A. (2005). Dynamic capabilities and sustained innovation: strategic control and financial commitment at Rolls-Royce plc, *Industrial and Corporate Change*, 14(3):501 – 542.

Lee, N. and I. Lings. (2008). *Doing business research: A guide to theory and practice*. London: Sage.

Leeuwis, Cees. (2013). *Communication for Rural Innovation: Rethinking Agricultural Extension*, Wiley: UK.

Leonardi, P. M. (2011). Innovation blindness: Culture, frames, and cross-boundary problem construction in the development of new technology concepts. *Organization Science*, *22*, 347-369.

Levin, R.C, Klevorick, A.K, Nelson, R.R. and Winter, S.G. (1987). Appropriating the returns from industrial research and development, *Brookings Papers on Economic Activity*, 3, 783 – 831.

Levina, N. E. Vaast. (2005). The Emergence of Boundary Spanning Competence in Practice: Implications for Implementation and Use of Information Systems. *MIS Quart*. 29, (2), 335-363.

Levine, R. (2003). ‘The Corporate Governance of Banks: A Concise Discussion of Concept and Evidence’, Discussion Paper No. 3, paper presented at the *Global Corporate Governance Forum,* October, Paris.

Lewis, Bernard. (1970). “Sources for the Economic History in the Middle East”, In Cook, M. A. (ed), *Studies in the Economic History of the Middle East*, Oxford: Oxford University Press.

Lewis, Bernard. (1979). Politics and War, in Schacht, J. and C. E. Bosworth (eds.) , *The Legacy of Islam*, Oxford University Press, (1979), (156–209).

Lewis, M. K. (2001). Islam and Accounting, *Accounting Forum* 25, (2), 103 – 127.

Li, W. D. Ong, S. K. and Nee, A. Y. C. (2006). *Integrated and Collaborative product Development Environment Technologies and Implementations,* World Scientific publishing Co: Singapore.

Lincoln, Y. S. & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE: Beverly Hills, CA.

Lissoni. F. and Metcalfe, J. Stanley. (1993). *Diffusion of Innovation Ancient and Modern: A Review of the Main Themes*, University of Manchester: England.

Lotter, Philipp and Howladar, Khalid. (2007). *Understanding Moody's Approach to Unsecured Corporate Sukuk.* Dubai: Moody's Investors Service.

Lyons, R, Chatman, J. and Joyce, K. (2007). Innovation in services: corporate culture and investment banking, *California Management Review,* Vol. 50 No. 1. pp. 1183 – 94.

Maclaurin,W. R. (1953). The sequence from invention to innovation and its relation to economic growth, *Quarterly Journal of Economics*, 67 (1), pp. 97 – 111.

MacMillan, I.C. and McGrath, R.G. (2002). Crafting R&D project portfolios, *Research Technology Management*, 45(5): 48 – 59.

Macy, J. R. and O'Hara, M. (2003). The Corporate Governance of Banks, *FRBNY Economic policy Review,* April, pp. 91 – 107.

Malik, Ibn Anas. (1951). *Al Muwatta`*. Egypt: Matba'at 'esa al Babi al Halabi.

Mannan, M. A. (1980). *Islamic Economic Theory and Practice*, Lahore: SH, Muhammed, Ashraf.

Manu, Franklyn A. (1992). Innovation Orientation, Environment and Performance: A Comparison of U.S. and European Markets. *Journal of International Business Studies*, 23(2):333–59.

Manu, Franklyn A. and Sriram, Ven (1996). Innovation, Marketing Strategy, Environment, and Performance. *Journal of Business Research* , 35 (1): 79-91.

March, J. (1990). The technology of foolishness, in Pugh DS (ed.) *Organization Theory: Selected Readings*, pp. 224 - 238, Penguin Books: Harmondsworth.

Marshall , C. and G. B. Rossman. (1999). *Designing Qualitative Research*. 3rd ed. California: Sage.

Martin, Xavier and Salomon, R. (2003). Knowledge Transfer Capacity and Its Implication for the Theory of the Multinational Corporation. *Journal of International Business Studies*, 34 (4): 356 – 73.

Matten, D. and Moon, J. (2008). "Implicit" and "explicit" CSR: a conceptual framework for a comparative understanding of corporate social responsibility. *Academy of Management Review*, 33, 404 – 24.

McCahery, Joseph and Picciotto, Sol. (1995). Creative lawyering and the dynamics of business regulation, in Yves, Dezalay and David, Sugarman (eds.) *Professional Competition and Professional Power: Lawyers, Accountants and the Social Construction of Markets*, London: Psychology Press.

McGrath, Michael. E. (editor). (1996). *Setting the pace in product Development, a Guide to product and Cycle Time Excellence,* Butterworth Heinemann: Burlington, MA.

McGrath, R.G. and Nerkar, A. (2004). Real options reasoning and a new look at the R&D investment strategies of pharmaceutical firms, *Strategic Management Journal*, 25 (1): 1 – 21.

McNeil, D. (1996). *Epidemiological Research Methods*. New York: John Wiley.

Merton, Robert, (1992), Financial Innovation and Economic Performance, *Journal of Applied Corporate Finance*, 4, No. 4, pp. 12-22.

Mews, Constant J, and Abrahaim. (2007). Usury and Just Compensation: Religious and Financial Ethics in Historical Perspective, *Journal of Business Ethics,* April, (2007) Vol. 72, p. 1-15.

Miera, D. M. and Repullo, R. (2010). Does Competition Reduce the Risk of Bank Failure, *The Review of Financial Studies*, Vol. 23, No. 10, 3639 – 3661.

Miles, Raymond E. and Snow, Charles C. (1978). *Organizational Strategy*, Structure, and Process. New York: McGraw Hill.

Miller D and Friesen PH. (1982) Innovation in conservative and entrepreneurial firms: two models of strategic momentum, *Strategic Management Journal*, 3 (1): 1-25.

Monks, Robert A. G.and Minow, Nell. (2011). *Corporate Governance,* 5th ed, John Wiley & Sons: UK.

Moore, Nick. (2000). *How to do research: the complete guide to designing and managing research projects*, Library Association.

Moorman, Christine and Slotegraaf, Rebecca J. (1999). The Contingency Value of Complementary Capabilities in Product Development, *Journal of Marketing Research* 36(2): 239 – 57.

Mowery, D.C. and Rosenberg, N. (1979). The influence of market demand upon innovation: a critical review of some empirical studies, *Research Policy*, 8 (2):102 – 153.

Mowery, D.C. and Rosenberg, N. (1998). *Paths of Innovation: Technological Change in 20th Century America*, Cambridge: Cambridge University Press.

Mowery, D.C. and Shane, S. (2002). Introduction to the special issue on university entrepreneurship and technology transfer, *Management Science,* 48(1): v – ix.

Mullineux Andrew. (1997). Financial Innovation, Money Banking and Financial Fragility in the UK, in Schachter, B, (ed). *Derivatives, Regulation and Banking,* pp 263 – 285, North Holland, Elsevier Science B. V. The Netherlands.

Murmann, J. P. and Frenken, K. (2006). Toward a systematic framework for research on dominant designs, technological innovations, and industrial change, *Research Policy* 35 (7): 925 – 952.

Muslim, Ibn Al-Hajjaj. (1987). *Sahih Muslim*, Damascus: Dar Al-Fikr.

Naqvi, S. (1981), *Ethics and Economics: An Islamic Thesis*, Islamic Foundation: Leicester.

Nasr, Seyyed. Hossein. (2003). *Islam, Religion, History and Civilisation*. New York: HarperCollins Publisher Inc.

Nelson, R.R. (1959). The simple economics of basic scientific research, *Journal of Political Economy*, 67(3): 297 – 306.

Nelson, R.R. (1992). What is 'commercial' and what is 'public' about technology, and what should be? in Rosenberg N, Landau R, and Mowery D (eds), *Technology and the Wealth of Nations*, pp. 57 – 72, Stanford CA: Stanford University Press.

Nelson, R.R. and Winter, S.G. (1982). *An Evolutionary Theory of Economic Change*, Cambridge MA: Harvard University Press.

Nichols, N.A. (1994). Scientific management at Merck: an interview with CFO Judy Lewent, *Harvard Business Review*, 72 (1): 89 – 99.

Nicolini. D, Mengis. J, and Swan. J. (2012). Understanding the Role of Objects in Cross -Disciplinary Collaboration, *Organization Science*, 23 (3), pp. 612- 629.

Nik Norzrul Thani. (2001). *Legal Aspects of Malaysian Islamic financial Systems*, Kuala Lumpur: Sweet and Maxwell Asia.

Nonaka, I. (1994). A dynamic Theory of Organizational Knowledge Creation, *Organization Science*, 5 (1): 14 –37.

Noonan, John, (1957). *The Scholastic Inquiry Into Usury*, USA: Harvard University Press.

North, Douglass. Cecil, Lance, Edwin Davis, and Calla, Smorodin. (1971). *Institutional Change and American Economic Growth*. USA: CUP Archive.

Obaidulla, Mohammed. (2005). *Islamic Financial Services*, Islamic Economics Research Centre, King Abdul Aziz University: Jeddah.

O'Sullivan, M. (2007). Funding new industries: a historical perspective on the financing role of the US stock market in the twentieth century, in Lamoreaux NR and Sokoloff KL (eds) *Financing Innovation in the United States*, 1870 to the Present, pp. 163 - 218, Cambridge MA: MIT Press.

Pasiouras, F. and K. Kosmidou, (2007). Factors Influencing the profitability of Domestic and Foreign Commercial Banks in the European Union, *Research in International Business and Finance*, 21, No. 2 (2007), 222 – 37.

Patel, P. and Pavitt, K. (2000). How technological competencies help define the core (not the boundaries) of the firm, in Dosi, G, Nilson, R. and Winter, S. G. (eds), *The Nature and Dynamices of Organisational Capabilities*, Oxford University Press: Oxford, 313 – 33.

Pavit, K. (1990). What we know about the strategic management of technology, *California Management Review*, Vol. 32, No. 3, 17 – 26.

Pawley, Michael. (1993). *Financial Innovation and Monetary policy*, Routledge: London.

Pawlowski, S. D. D. Robey. (2004). Bridging user organizations: Knowledge brokering and the work of information technology professionals. *MIS Quart*. 28 (4) 645-672.

Persons, J. C. and Warther, V. A. (1997). Boom and Bust Patterns in the Adoption of Financial Innovations, *The Review of Financial Studies*, Vol. 10, No. 4, PP. 939 - 967.

Peters, TJ and Waterman, RH. (1982). *In Search of Excellence: Lessons from America's Best-Run Companies*, New York: Harper & Row.

Philippe, Jorion and Da Silva, Marcos, (1995). *The Importance of Derivative Securities Market to Modern Finance*, Chicago: Catalyst Institute.

Pisano, G.P. (1990). The R&D boundaries of the firm: an empirical analysis, *Administrative Science Quarterly*, 35(1):153 – 176.

Plosser, C. I. (2009).Financial Econometrics, Financial Innovation, and Financial Stability, *Journal of Financial Econometrics*, Vol. 7, No. 1, 3 – 11.

Poole, William. (2011). Causes and consequences of the financial crisis of (2007–2009), *Harvard Journal of Law & Public Policy*, Vol. 33, No. 2, 422 – 441.

Poolski, T. M. (1986). *Financial Innovation and the Money Supply*, Basil Blackwell Inc: New York.

Porter, ME, (1990). *The Competitive Advantage of Nations*, Free Press: New York.

Prahalad, C.K. and Hamel, G. (1990). The core competence of the corporation, *Harvard Business Review*, Vol. 68, No. 3, 79 – 91.

Qattan, Muhammad. A. (2006). *Islamic Financial Architecture: Risk Management and Financial Stability*, Jeddah: Tariqullah Khan & Dadang Muljawan (eds), IRTI – IDB.

Quinn, JB. (1985). Managing innovation: controlled chaos, *Harvard Business Review*, 63(3):73 – 84.

Qur`an, (printed: 1995). *Qur`an*, Damascus: Dar Al-Fikr.

Qutub, Muhammad. (1974). *Al Tatawour wa al Thabat fi Hayati al Bashar*, Beirut: Dar Al Shorouq.

Rahman, Y. A. (1994). *Interest Free Islamic Banking*. Al-Hilal Publishing: Kuala Lumpur.

Rajan, Raghuram. G. (2010). *Fault Lines*, New Jersey: Princeton University Press.

Ramadan, Tariq. (2009). *Radical Reform: Islamic Ethics and Liberation*, New York: Oxford University Press.

Rammal, H. G. (2006). The Importance of *Shari'ah* Supervision in IFIs, *Corporate Ownership and Control*, Volume 3, Issue 3, pp. 204 – 208.

Rangapriya (Priya), Kannan-Narasimhan , (2014). Organizational Ingenuity in Nascent Innovations: Gaining Resources and Legitimacy through Unconventional Actions, *Organization Studies*, 2014, Vol. 35(4) 483 – 509.

Rao, K. V. (1994). *Research Methodology in Commerce and Management*. New Delhi: Sterling Publishers Private.

Raymond, Andre. (1981). The Economic Crisis of Egypt in the Eighteenth Century, in Udovitch, A. L. (ed.), *The Islamic Middle East, (700–1900): Studies in Economic and Social History*, UK: The Darwin Press.

Reiter, S. Stewart, G. and Bruce, C. (2011). A Strategy for Delayed Research Method Selection: Deciding Between Grounded Theory and Phenomenology, *The Electronic Journal of Business Research Methods*, Volume 9 Issue 1, (2011), (pp 35 - 46).

Rheinberger, H. J. (1997). *Toward a History of Epistemic Things: Synthesizing Proteins in the Test Tube*. Palo Alto, CA: Stanford University Press.

Rice, Gillian, (1999), Islamic Ethics and the Implications for Business, *Journal of Business Ethics* 18: 345 – 358, (1999).

Robson, C. (2002). *Real World Research*, 2nd edition. Blackwell Publishing: USA.

Rogers, Everett M. (2010). *Diffusion of Innovations*, (4th ed.), The Free Press, New York: Simon and Schuster.

Rogers, Everett. M. (1976), *Communication and development: critical perspectives*, Sage Publication: London.

Rogers, Everett. M. (1983), *Diffusion of Innovations*, Free Press: New York.

Rosenberg, N. (1990). Why do firms do basic research (with their own money?), *Research Policy*, 19(2): 165 – 174.

Rosenberg, N. and Nelson, R. R. (1994). American universities and technical advance in industry, *Research Policy*, 23 (3): 323 – 348.

Rosenkop, f L, Metiu, A. and George, V.P. (2001). From the bottom up? Technical committee activity and alliance formation, *Administrative Science Quarterly*, 46(4):748 -772.

Ruttan, V. W. (1959). Usher and Schumpeter on invention, innovation, and technological change, Quarterly Journal of Economics, 73, (4), pp. 596 – 606.

Ryan, M. (2009), Mixed Methodology Approach to Place Attachment and Consumption Behaviour: a Rural Town Perspective. *The Electronic Journal of Business Research Methods,* Volume 7, Issue. 1, 107 – 116.

Sandberg, Jörgen. (2005). How Do We Justify Knowledge Produced within Interpretive Approaches, Organisational Research Methods. Jan, 2005; 8, 1; ABI/INFORM Global, pp 41-68.

Saunders, M. Lewis, P, and Thornhill, A. (2009). *Research Methods for Business Students* 5th edn. Prentice Hall: Essex.

Scarbrough, Harry, et al. (2015). Developing a Relational View of the Organizing Role of Objects: A study of the innovation process in computer games, *Organization Studies*, Vol. 36, (2), 197-220.

Schilling, M. A. and Phelps, C. C. (2007). Interfirm collaboration networks: the impact of large-scale network structure on firm innovation, *Management Science*, 53(7):1113 – 1126.

Schumpeter, J.A. (1934). *The Theory of Economic Development*, Harvard University Press: Boston, MA.

Schumpeter, J.A. (1939). *Business Cycles*, McGraw-Hill: New York.

Schumpeter, J.A. (1942). *Capitalism, Socialism and Democracy*, Allen and Unwin: London.

Shalaq, Al Fadel. (1997). Muhammad wa Sharluman wa `Osoul Awrouppa (Europe) 'Ard wa Mutaba'ah, *Journal of Ijtihad*, Issue: 36, year: 9.

Shiller, Robert J, in Michael Haliassos, (editor), (2012), *Financial Innovation: Too Much or Too Little?* USA: MIT Press.

Shiller, Robert J. (1993). Macro Markets: *Creating Institutions for Managing Society's Largest Economic Risks: Creating Institutions for Managing Society's Largest Economic Risks*, New York: Oxford University Press.

Shiller, Robert J. in Michael Haliassos (editor). (2012). *Financial Innovation: Too Much Or Too Little?* USA: MIT Press.

Siddiqi, M. N. (1981). Muslim Economic Thinking: A Survey of Contemporary Literature, in K. Ahmad (ed.), *Studies in Islamic Economics,* Leicester: The Islamic Foundation.

Siguaw, Judy A. Simpson, Penny M. and Enz, Cathy A. (2006). Conceptualizing Innovation Orientation: A Framework for Study and Integration of Innovation Research. *Journal of Product Innovation Management*. 23: 556 – 574.

Simon, H. (1957). Administrative Behaviour, Free Press: New York.

Sinclair, P. (2001), *Financial Exclusion: an Introductory Survey*, Centre for Research into Socially Inclusive Services: Edinburgh.

Sinkey, J.F. (1992). Innovation as a diffusion process: Bank Technological Innovation, the Payment System, and Information Processing, *The Financial Services Industry*, (4th edn), New York: MacMillan, 113-410.

Smith, Adam, (1976), *The Wealth of Nations,* edited by R.H. Campbell and A.S. Skinner, The Glasgow edition of the Works and Correspondence of Adam Smith, vol. 2b.

Smith, Adam. (1789). *An Inquiry into the Nature and Causes of the Wealth of Nations*, volume 3, edition 5, England: A. Strahan and T. Cadell.

Smith, Adam. (1790). *The Theory of Moral Sentiments*. In S. M. Soares (6th ed.). MetaLibri: Brazil.

Smith, Kristin. (2006). *From Petrodollars to Islamic Dollars: The Strategic Construction of Islamic Banking in the Arab Gulf*, Cambridge, Massachusetts: Harvard University.

Smith, Presten G. and Reinertsen, Donald G. (1998). *Developing Products in Half the Time: New Rules, New Tools*, 2nd edn, John Wiley and Sons: New York, NY.

Socially, Incl. Sinkey, J.F. (1992). Innovation as a diffusion process: Bank Technological Innovation, the Payment System, and Information Processing, *The Financial Services Industry*, (4th edn), New York: MacMillan, 113-410.

Sonenshein, Scott, Decelles, Katherine and Dutton, Jane. E. (2014). It's not Easy Being Green: the Role of Self - Evaluations in Explaining Support of Environmental Issues. *Academy of Management Journal. (*2014), Vol. 57, No. 1, 7-37.

Star, S. L. & Griesemer, J. R . (1989). Institutional ecology, translations and boundary objects: Amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907 –39. *Social Studies of Science*, *19*, 389-420.

Star, S. L. (2010). This is not a Boundary Object: Reflections on the Origin of a Concept. *Science, Technology. Human Values*, 35, (5), 601-617.

Star, S. L. J. R. Griesemer. (1989). Institutional Ecology, translations and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907 –1939. *Social Study Science*. 19, (3), 389-420.

Stenberg, Leif. (1996). *The Islamisation of Sceince: Four Muslim Positions Developing an Islamic Modernity*, Lund: Lunds University.

Stoneman, Paul, ed. (1995). *Handbook of the Economics of Innovation and Technological Change*, Wiley: London.

Suliman, Abdul Rahaman. (1898). *Majma' al Anhur Shareh Multaqa al Abhur*. Cairo: Dar Ehya` al Turath al Arabi.

Sundararajan, V. (2007). Risk Characteristics of Islamic Products: Implications for Risk Measurment and Supervision, *Islamic Finance: the Regulatory Challenge*, Archer, Simon and Abdel Karim, Rifaat. Ahmed (Eds), John Wilsey & Sons: Singapore.

Sveiby, Karl–Erik, Gripenberg, Pernilla and Segercrantz, Beata, (Editors), (2012), *Challenging the Innovation Paradigm*, Routledge: New York.

Tashakkori, A. and C. Teddlie. (2003). *Handbook on mixed methods in the behavioural and social sciences*. Thousand Oaks, CA: sage.

Teece, D.J. (1986). Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy, *Research Policy,* 15 (6): 285 – 305.

Teece, D.J. (2006). Reflections on profiting from innovation? *Research Policy,* 35 (8): 1131 – 1146.

Teece, D.J. (2007). Explicating dynamic capabilities: the nature and micro-foundations of (sustainable) enterprise performance, *Strategic Management Journal*, 28 (13):1319 – 1350.

Teece, David J. Pisano, Gary and Shuen, Amy. (1997). Dynamic Capabilities and Strategic Management. *Strategic Management Journal*, 18(7): 509 – 33.

Thomas. Abdulkader, Cox. Stella and Bryan. Kraty, editors, Euromoney Institutional Investor PLC. (2005). *Structuring Islamic Finance Transactions,* Euromoney Books: London.

To, M.H. and D. Trip. (2002). Factors Influencing the Perfonricince of Foreign Owned Banks in New Zealand, *Journal of International Financial Markets, institutions and Money,* 12, No. 4-5, (2002): 341-57.

Tripp, Charles, (2006), *Islam and the Moral Economy: The Challenge of Capitalism*, Cambridge University Press: Cambridge.

Trist, E. K. Bamforth. (1951). Some social and psychological consequences of the longwall method of coal – getting. *Human Relations*, 4 (1) 3-38.

Trott, Paul. (2008). *Innovation Management and New Product Development*, 4th edition, Pearson Education Limited: England.

Tuan, Le Anh, *et al*. (2010). *Research to Impact: Case Studies for Natural Resource Management for Irrigated Rice in Asia*, edited by F. G. Palis, Manila: International Rice Research Institute.

Turner, Adair. (2012). *Economic after the Crisis, Objectives and Means*, London: MIT Press.

Tushman, Michael L. (1997). Winning through Innovation. *Strategy and Leadership*. 25(4): 14-9.

Tzeng, Cheng-Hua, (2009). A review of contemporary innovation literature: A Schumpeterian perspective, *Innovation: management, policy & practice,* (2009) 11: 373–394.

Ulrich, Karl T. and Eppinger , Steven D. (2008). *Product Development and Design*, McGraw Hill: New York, NY.

United Nations Development Program (UNDP), (1994), *Human Development Report*, (1994), Oxford University Press: Oxford.

Usmani, Muhammad. Taqi. (2005). *An Introduction to Islamic Finance*, Maktaba Ma`ariful Qur`an: Karachi.

Utterback, J. M. (1994). *Mastering the Dynamics of Innovation: How Companies Can Seize Opportunities in the Face of Technological Change,* Boston MA: Harvard Business School Press.

Van de Ven, A. H. (1999). *The innovation journey*. New York: Oxford University Press.

Van de Ven, Andrew H. Polley, Douglas E. Garud, Raghu and Venkataraman, Sankaran (1999). *The Innovation Journey*. New York: Oxford University Press.

Visser, Hans. (2009). *Islamic Finance: Principles and Practice*, USA: Edward Elgar.

Wang, C.L. and Ahmed, P.K. (2007). Dynamic capabilities: a review and research agenda, *International Journal of Management Reviews*, 9(1): 31 – 51.

Warde, Ibrahim, (2010). *Islamic Finance in the Global Economy*, (2nd edition), UK: Edinburgh University Press.

Wenger, E. (1998). *Communities of Practice: Learning, Meaning, and Identity*. New York: Cambridge University Press.

Williams, B. (2003). Domestic and International Determinants of Bank Profits: Foreign Banks in Australia, *Journal of Banking and Finance*, 27, No. 6 (2003), 1185-210.

Williams, Geoffrey and Zinkin, John. (2010). Islam and CSR: A Study of the Compatibility Between the Tenets of Islam and the UN Global Compact. *Journal of Business Ethics*, 91: 519 – 533.

Wilson, R. (2009). *The Development of Islamic Finance in the GCC*. Kuwait: The Centre for the Study of Global Governance.

Wilson, R. (2010) Islamic Finance: Principles and Practices (book review), *Journal of Islamic Studies*, 1 – 4.

Wilson, Rodney El-Ashker, Ahmed A. F. (2006). *Islamic Economics: A Short History*, Boston, MA, USA: Brill Academic Publishers.

Wilson, Rodney, (2012). *Legal, Regulatory and Governance Issues in Islamic Finance*, UK: Edinburgh University Press.

Woodward, J. (1965). *Industrial Organisation: Theory and Practice*, 2nd edn, Oxford University Press: Oxford.

Worren, Nicolay, Moore, Karl and Cardona, Pablo. (2002). Modularity, Strategic Flexibility, and Firm Performance: A Study of the Home Appliance Industry. *Strategic Management Journal*, 23 (12): 1123- 40.

Yousri, Abdul Rahman. (1987). *Tatawour al Fikr al Iqtisadi (the Development of Economic Thought)*, 2nd ed. Iskandariyyah: Dar al Jami'at al Masriyyah.

Zaltman, Gerald, Duncan, Robert and Holbek, Jonny. (1973). *Innovations and Organizations*. New York: Wiley.

Zenjawaih, Muhammad. (1986). *Al Amwaal*, edited by: Shaker Zeab Fayyad, Riyadh: Markaz al Malik Faisal lil Bohouth wa el Dirasat al Islamiyyah.

Appendix 1: Supplementary Sections to the Survey Analysis (Chapter 9)

This Appendix contains sections of the survey data analysis that are not included in Chapter 9 analysis of the data collected via survey. This supplementary data analysis is presented in the sections below for further details of the survey analysis. Appendix 1 is divided into two main sections, the first section provides details of the demographic of the sample respondents that was summarised in Chapter 9. The second section provides further details of the analysis of sub-themes that were presented in Chapter 9.

1. Demographic of the Sample Respondents

This section presents the descriptive statistical tables generated from the collected data, which was then subjected to a rigorous data cleaning and accuracy testing. This was done e.g. by ensuring the accuracy of geographical data provided about the financial institutions. The general characteristics of the sample respondents who participated in the survey questionnaire are explained below. The reason for carrying out these common checks, including data cleaning, was to inspect any unusual or invalid entries. After reasonable assurance of the accuracy of the data entry, the basic descriptive statistical analysis was performed. This analysis is presented in the following sections.

Table A1.1: Total respondents from the population sample

Description	Count	Percentage
Sample	150	100%
Respondents	61	41%

The questionnaire survey was sent to the target sample with 61 respondents completed the questionnaire. This represents a response rate of 41%, which is believed to be a very good rate, in business research, that represents the population (Saunders et al, 2003: 159).

The findings of the questionnaire will be presented below in the same order followed in the design of the questionnaire.

Table A1.2: Respondents profile

Respondents	Count	Percentage
Islamic Banks	53	87%
Universities involved in the field of Islamic finance research	5	8%
Other (Shariah scholar)	3	5%
Total	61	100%

Respondents profile's varied, with the majority 87% being Islamic banks followed by 8% being universities that are involved in Islamic finance and finally 5% which were Shariah scholars. This is a very representative sample of the key players in the Islamic finance industry. The names of the participated institutions are concealed for data protection purposes. Fifty-three banks took part in completing the questionnaire, which exceeds the expected number of participants and provided an excellent representation of the Islamic banking industry. The research network in the industry helped in achieving this result.

Table A1.3: Respondents grouped by region

Region	Count	Percentage
Southeast Asia	5	8%
South Asia	3	5%
Gulf Cooperation Countries (GCC)	33	54%
Middle East	10	16%
North Africa	5	8%
Central Africa	1	2%

Western Europe	3	5%
North America	1	2%
Total	61	100%

Respondents' institutions represented 21 countries around the world and were spread over four continents, Asia, Africa, Europe and North America as shown above in the table. This includes what is known as the Islamic finance hubs such as Bahrain (representing 21%), the high number of respondent banks from Bahrain is due to its position as a major financial centre for Islamic finance. According to Central Bank of Bahrain, there are 24 licensed Islamic banks in Bahrain as of 31st of January 2014. UAE (representing 13%), Malaysia (representing 5%), UK (representing 5%) and Oman (representing 7%). This representation is believed to be more than satisfactory to provide a clear idea about the current practices of Islamic banks in relation to financial innovation and engineering all over the world.

The global market for Islamic financial services, as measured by Sharia compliant assets, is estimated by The City UK to have increased by a fifth in 2012, to a record $1,460bn. The industry is set to grow significantly in the years ahead. Based on the current rate of growth, the market is expected to have topped $2 trillion in assets by the end of 2014. The largest centres remain concentrated in Malaysia and the Middle East, including Iran, Saudi Arabia, UAE and Kuwait[19]. Assets that can be allocated to individual countries from The Banker's survey reveals that the leading countries for Sharia compliant assets are Iran which accounts for around 36% of the global market, Malaysia (17%) and Saudi Arabia (14%). These are followed by other Gulf states including UAE, Kuwait, Bahrain and Qatar, and then Turkey. The UK, in ninth place, is the leading Western country with $19bn of reported assets.

[19] The City UK Islamic Finance Report, published 23/10/2013, available at http://www.thecityuk.com/research/our-work/reports-list/islamic-finance-2013/.

There are over 700 institutions (banks and others) registered globally as sharia-compliant organisations in financial services. Of these, around 500 are fully compliant, and the remainder operate sharia-compliant products within a conventional institution. Countries with most of the 430 firms reporting to The Banker's survey include Bahrain and Indonesia with 74 and 71 firms respectively. Malaysia, Iran, Kuwait and Saudi Arabia were in a group of countries with more than 50 firms (The City UK, 2013)[20]. Hence, this explains the concentration of respondents in particular regions, such as the GCC.

Table A1.4: Respondents' position/role in the Islamic finance industry

Position/Role	Count	Percentage
Academic Shariah Scholar	5	8%
Head of Product Development	35	57%
Head of Shariah Compliance	13	21%
Shariah Supervision/Scholar	4	7%
Sharia Risk & Audit	4	7%
Total	61	100%

For more accurate data, the focus on the respondents' role in the financial institution was very important, as the questionnaire is aimed at respondents in product development and Shariah compliance roles, including Shariah scholars. 57% of respondents were in the role of head of product development and structuring and 21% in the role of head of Shariah compliance with 7% Shariah scholars who may supervise more than one Islamic financial institution. The importance of the views of respondents in a Shariah compliance role or Shariah scholars is due to their involvement in the product engineering and development cycle.

[20] The City UK Islamic Finance Report, published 23/10/2013, available at http://www.thecityuk.com/research/our-work/reports-list/islamic-finance-2013/.

This also applies to the 7% of respondents in a Shariah non-compliance risk or audit role who usually audit the cycle of the product development to ensure that Shariah requirements are taken into account throughout the development process. Some of those respondents who are involved in the product development process, possibly in a supervisory role, who are also lecturers in Islamic studies and Islamic finance, but consider themselves as academics represented 8% of the respondents. This spread of respondents covers the key individuals or functions in the Islamic finance industry, who are involved directly in the financial engineering process according to their respective roles.

1.1 Nature of activities of the financial institutions

As the aim was to explore and describe the current practices in the Islamic finance industry in relation to financial innovation and engineering, it was desirable to cover the main financial activities provided by Islamic financial institutions. This might not reveal any substantial difference in their practices, but will ensure that the developed standardised framework for financial engineering incorporate most, if not all, of the nature of financial activities provided by Islamic financial institutions.

Table A1.5: Nature of activities of respondents' institutions

Nature of Activities	Total (% & Count) 100% Percentage	(61) Count
Islamic Commercial Banking	56%	34
Islamic Investment Banking	10%	6
Islamic Window (in a Conventional Bank)	8%	5
Islamic Retail Bank	11%	7
Islamic Fund	0.00%	0
Takaful Operator	2%	1
Other, please specify	13%	8

The highest rate of respondents, 56% was from Islamic commercial banks that provide corporate, investment and retail banking services. Then, it was followed by retail banking 11%, where they serve the retail customer base and might conduct commercial and business banking as well. The regulations around the operations of retail banking are usually more stringent and such regulations may have an impact on the Shariah compliance of the developed financial product.

Investment banking comprised 10% of respondents. These institutions may only focus on investment for corporate and high net worth clients. Islamic windows of conventional banks (8%) and takaful (Islamic insurance) (2%), are also represented, as it is believed that the process of developing takaful products is not different from a financial product offered by Islamic banks.

However, Islamic windows of conventional banks are frequently criticised for mixing their Islamic operations with their conventional ones, and the lack of Shariah control in the product development cycle.

1.2 Existence of a Shariah Supervisory Board/Committee in the financial institution

This section explores the existence of a Shariah Supervisory Committee/Board (SSC or SSB) in the respondents' financial institutions. The SSC is an independent committee that does not report to any executive management or the board of directors in the Islamic financial institution (IFI). It exists as an essential part of the Shariah compliance governance of IFI and monitors its operations and compliance with Shariah. The existence of the SSC in an IFI implies that suitable Shariah governance is in place in the IFI.

Table A1.6: Existence of a Shariah supervisory committee

Existence of a Shariah Supervisory Committee	Total (% & Count) 100% Percentage	(59) Count
No	15%	9
Yes, please specify below how many members are there in the Shariah Supervisory Board/Committee?	85%	50

Table A1.7: Number of scholars of the Shariah supervisory committee

Members of the Shariah Supervisory Committee	No. of Banks
Three	31
Four	9
Five	5
Six	3
More than six	2
Total	50

The number of the Shariah Supervisory Committee members of the respondent financial institutions varied between minimum of three members (62%) which is in line with AAOIFI Shariah standards and in some cases, over six members. The Shariah Supervisory Committee of one of the Islamic banks consists of 12 members. The purpose of having a minimum of 3 members is for minimising the margin of error in relation to a decision made by the Shariah Supervisory Committee. In contrast, the risk is higher when the decisions are made by one or two members who may have conflicting opinions and therefore, any decisions could not be passed by a majority opinion (AAOIFI Shariah Standards, Standard No. 29).

Any new financial product that is developed by an Islamic bank should be approved by its Shariah Supervisory Committee as being in compliance with, and fulfilling the Shariah requirements for the chosen product structure. Without their approval, the Islamic bank will not be able to launch a financial product; hence, their sign off of the proposed financial product is a stamp that the product is developed according to Shariah. Thus, this approval is very important and is the safeguard to prevent Islamic banks being diverted from Shariah in their financial products and operations. Such a possible deviation forms a huge Shariah non-compliance risk which is unique to Islamic banks.

Therefore, the role of Shariah compliance and a Sharia Supervisory Committee in Islamic banking is vital for the financial innovation and engineering process. We should note here that some respondents indicated that a SSC does not exist in their relevant institutions. This is because, they either identified themselves as academics, amid their involvement in Islamic banking as Shariah scholars or because they identified themselves as independent Sharia scholars. In that case, they would be supervising various banks and they refrained from attaching themselves to a particular IFI, also given the subsequent questions that were asked about the number of the SSC members in the IFI.

1.3 Existence of an internal Shariah Compliance Department/Advisor in the IFI

The existence of an internal Shariah compliance function in IFIs indicates the maturity of the Shariah governance within than that IFI.

Table A1.8: Respondents who have/not internal Shariah compliance department/adviser

Answer	Total (% & Count)	
	100%	(61)
Yes	85%	52
No	15%	9

The majority of respondents' banks (85%), as shown in Table A1.8 above, answered yes to having a Shariah compliance function in their institution, this is due to the importance of the Shariah compliance function in an Islamic bank who advises and monitors the daily operations and reports to the Shariah Supervisory Committee. This function also ensures that any Shariah risk has adequate controls in place and undertakes regular Shariah auditing. We will find out in the next section, how this is done in the case of those who answered No (15%) in Table A.8 above.

1.4 Different approaches of covering the role of a dedicated Sharia Compliance Department in the financial institution

IFIs who do currently have a dedicated Shariah compliance function take different approaches to ensure that they meet the minimum required governance for Shariah. Those approaches are shown below.

Table A1.9: Approaches to cover the role of the Sharia Compliance Department when it does not exist in the IFI

Advising the Institution on the day to day Shariah Issues	Total (% 100%	& Count) (10)
This function is covered by a member of the Shariah Supervisory Board/Committee	20%	2
This function is outsourced to an individual	10%	1
This function is outsourced to an external Shariah Advisory Firm	10%	1
Other, please specify	60%	6

40% of those who answered 'No' in Table A.8 above have different arrangements regarding the internal Shariah compliance function. This function in 2 cases of the respondents is covered by a member of the Shariah Supervisory Committee and in the other 2 cases it is outsourced. This is because some of the respondents are Islamic windows of conventional banks, where their Shariah offering is on a small scale or the bank is very small and outsourcing this function will reduce the cost. The other 60% (6 cases), of those who answered 'No' in Table A.8 above and are categorised as others, are independent Shariah scholars/academics who are possibly involved with various IFI and did not affiliate themselves to a particular financial institution.

The survey findings shows that within the governance and structure of the Islamic financial institution, the internal Shariah compliance function is fulfilled by one method or another and is never left absent or uncompleted.

2. Sub-Themes of the Survey Analysis (Chapter 9)

2.1 Market position in relation to financial innovation

A clear strategy and planning for financial innovation, development of products and the approach used is crucial for Islamic banks. This will shape their future development and the availability of new financial products in the market.

Table A1.10: IFIs' market position in relation to financial innovation

Market Position of the Financial Institution	Total (% 100%	& Count) (61)
Developing new products in new markets	20%	12
Developing new products in existing markets	67%	41
Marketing existing products in new markets	3%	2
Expanding existing products in existing markets.	10%	6

The approach taken by IFIs, regarding their market position, may vary from one bank to another, for example 67% of respondent banks see their position in the market in relation to developing new financial products as developing those products in existing markets. So, they aim to develop new products that serve the needs of the existing market without any current plans to venture beyond this line.

20% of respondents see their market position regarding developing new products as developing new products in new markets. They are willing to explore new markets and develop new products in these markets. For instance, some GCC Islamic banks opened offices in new markets such as the UK and Malaysia and developed new financial products designed for that market. In contrast, 10% see their position in the market as expanding existing products in established markets; this position is less adventurous and does not give great attention to the development of new products.

3% of respondents see their position in the market as marketing existing products in existing markets. This approach implies that they give much less importance to developing new products according to the needs of a new market; they would, potentially according to 2 respondent IFIs, rather market their existing products to the new market even though they might not be suitable for that particular market. These different approaches and strategies reflect the current positions and practices of Islamic banks in relation to financial innovation and development of new financial products to meet the needs of identified markets.

2.2 Main drivers of financial innovation

Generating ideas for new financial product development can be driven by different influencing factors in the financial institution; therefore respondents could choose more than one answer.

Table A1.11: -Main drivers for generating new ideas for new financial products development within the IFIs

Main Drivers of Ideas for New Products	Total (% 100%)	& Count) (61)
Board of Directors	0%	0
CEO/MD	13%	8
Management Committee	38%	23
Marketing Department	57%	35
Internal / External Shariah Officer/Controller	7%	4
Strategy / Planning Department	38%	23
Research & Development Department	48%	29
Product Development Department	83%	50
Other, please specify	8%	5

The new product development ideas of 82% of respondents are generated by the institution's product development department. The new idea is then shared with relevant areas in the business to be assessed. 57% of respondents stated that new ideas are generated by the marketing department of the Islamic bank. This would be due to the marketing team looking into what financial products are available in the market or offered by other providers or by interacting with customers and asking for their feedback.

However 48% of respondents stated that new products ideas are generated by the research and development department. This indicates that those respondents attribute more importance to the generation of new ideas for financial innovation and product development in order to achieve a better result in relation to new financial products. 38% of respondents answered that new ideas are equally generated by the management committee or strategy and planning department. This could be explained as usually there is a separate strategy and planning department in the relatively big financial institutions, in this case of smaller institutions, such functions are usually covered by the management committee or other similar senior committees in the business.

13% of respondents stated that new products ideas come from the top CEO, MD or Executives, where they identify the need for a new product to help address or resolve a problem the business is facing or might face, such as liquidity or funding requirements. This usually will not be based on proper assessment of market research and needs.

Finally, 7% of respondents mentioned that the new idea could come from the Shariah compliance officer and 8% mentioned other functions with different names that would do the same role as the business areas listed in Table A.11 above. It is clear from the different responses provided by the IFIs that idea for new financial innovation and products could be generated from any relevant function within the IFI.

The driver for new products ideas could be business needs, market needs, competition in the market, taking already existing product in the market and improve it further or being pioneering in the market by undertaking market research to innovate new financial products. Whatever the driver is, the product development experts are the people to develop the idea and implement it to satisfy all requirements.

Table A1.12: Frequency of updating the formally documented financial innovation process

Frequency of Updating the Product Development Process	Total (% & Count) 100%	(37)
No	32%	12
Yes, how often, please specify	68%	25

Table A1.13: Existence of a formally documented financial innovation/NPD process

Documented Product Development Process	Total (% & Count) 100%	(61)
Yes	59%	36
No	41%	25

The above shows us the percentage of respondent banks that have a formally documented product development process. Those respondents who answered 'Yes' in Table A1.14 were asked to provide further details in the next section below. 59% of respondents said that they have a formally documented product development process and 41% said they do not.

Table A1.14: IFIs' adherence to their own documented financial innovation process

Frequency	1		2		3		4		5		Total (% & Count) 100% (38)	
Used as a guideline only	42%	16	13%	5	5%	2	11%	4	29%	11	100%	38
Not strictly	11%	4	32%	12	11%	4	24%	9	24%	9	100%	38
Less strictly	13%	5	18%	7	58%	22	11%	4	0%	0	100%	38
Strictly	11%	4	29%	11	13%	5	47%	18	0%	0	100%	38
Very strictly	24%	9	8%	3	13%	5	8%	3	47%	18	100%	38

How Strictly		Total (% & Count) 100%	(38)
Used as a guideline only	1	42%	16
	2	13%	5
	3	5%	2
	4	11%	4
	5	29%	11
	Total	100%	38
Not strictly	1	11%	4
	2	32%	12

	3	11%	4
	4	24%	9
	5	24%	9
	Total	100%	38
Less strictly	1	13%	5
	2	18%	7
	3	58%	22
	4	11%	4
	5	0%	0
	Total	100%	38
Strictly	1	11%	4
	2	29%	11
	3	13%	5
	4	47%	18
	5	0%	0
	Total	100%	38
Very strictly	1	24%	9
	2	8%	3
	3	13%	5
	4	8%	3
	5	47%	18
	Total	100%	38

Table A1.15: Involvement of the internal Shariah adviser in the financial innovation process

Answer	Total (% & 100%	Count) (61)
Yes	90%	55
No	10%	6

It is important to know if the Shariah compliance department is involved in the process of new product development to ensure Shariah governance and oversee the process, although the level of involvement during this process may vary as we will see in the respondents' view in the next section. 90% of respondent banks answered 'Yes' in Table A1.15 confirming that the Shariah compliance department is involved in the product development process.

However, 10% answered ‘No’; this might be because of their small size as an organisation, that they are a window of a conventional bank, or because the Shariah control is applied via the Shariah audit post development of the new product. The involvement of the Shariah compliance officer or adviser, in different phases of the product development cycle, would ensure incorporation of Sharia compliance governance throughout the process and control check.

Table A1.16: Level of involvement of the internal Shariah compliance function in the financial innovation process

Level of Involvement of the Shariah Compliance Function in the Institution	Total (% 100%	& Count) (55)
Concept generation stage	65%	36
Design stage	56%	31
Pricing stage	2%	1
Reviewing legal documentation from a Shariah perspective	80%	44
Submitting product documentation for approval by the Shariah Supervisory Board/Committee	58%	32
Testing stage	2%	1
Marketing documents stage	11%	6
Implementation stage	7%	4
Shariah audit stage (after product is launched)	42%	23
All the above	5%	3
Other, please specify	0%	0

Table A1.17: Respondents’ Shariah governance and compliance assurance for financial innovation

Shariah Governance and Approval of New Financial Product	Total (% 100%	& Count) (61)
The institution’s own Shariah Supervisory Board/Committee	85%	52
Central national Shariah Authority/Board/Council	5%	3
Central bank Shariah Supervisory Committee	10%	6
Other, please specify	8%	5

As the questionnaire was completed by respondents who are spread over four continents, it is important to know from them the established Shariah governance in approving new financial products. As was discussed in the Historical Analysis Chapter (Chapter 4) there are various approaches that are followed by Islamic banks in terms of the Shariah authority or body that supervises their operations. The approach adopted by Islamic banks is due to the jurisdiction of their country of incorporation.

According to 85% of respondent banks, new financial products are reviewed and approved by the institution's own Shariah supervisory committee/board which, as we saw earlier in this chapter, consists of a minimum of three Shariah scholars. 10% are required to approve their products from the central bank's Shariah supervisory committee, and 5% of them are required to sign off any new products to be launched from a central national Shariah authority that may be formed by the financial regulator in that country.

In the 'other' field of the question, 8% of respondents commented that the approval is either outsourced or is done by the Shariah adviser of the institution. This could be possibly because of the respondent is an Islamic window of a conventional bank that offers very limited Islamic financial services, such as 1 or 2 Islamic financial products and this approach, perhaps, helps them keep costs low.

Appendix 2: Conceptualisation of the Research Findings

1. Introduction

The analysis from previous chapters (2, 5 & 6) and the empirical findings from chapters 9 & 10 are conceptualised and encapsulated in this Appendix and presented in Figures A2.1, A2.2 and A2.3 respectively. This framework was then used as a measurement tool for existing financial innovation and engineering practices in the Islamic finance industry as explained in Appendix 3.

2. Conceptualisation of the Research Findings

This section presents the developed theoretical framework as the outcome of the research findings, which also fulfils the research objective in developing and proposing a unified framework for the Islamic finance industry, and possibly for the conventional finance industry alike. The architecture of this framework is based on the findings from the questionnaire survey and the analysis of the in-depth data collected through the interviews, also, the discussion and analysis presented in Chapters 5 & 6.

The process of conceptualising the framework is based on the analysis conducted in Chapters 5, 6, 7, 9 and 10. The interviews findings (Chapter 10), in particular, have provided valuable insights into what constitutes a religious orientation towards financial innovation and engineering. Interviews emphasised the importance of embedding the higher Shariah objectives, the specific five Shariah objectives and other Shariah requirements as shown in Figure A2.1.

The findings of this research also provided a valuable insight into the role of Shariah as a boundary object and categorisation of constant and changing Shariah rules. They further explained the role of Shariah as a shared object that brings different groups and functions together to ensure the financial innovation falls within the scope of Shariah. The findings of the survey (Chapter 9) provided further particular insight into the innovation and financial engineering processes and components as practiced in IFIs.

This theoretical framework is divided into three phases, as shown below in Figure A2.1; the first is for examining the religious orientation of financial innovation and its compatibility with the required Shariah concepts. If the financial innovation passes this phase it should follow the framework sets for phase two financial engineering, and then to phase three of the NPD process. Just as a reminder for the reader, the definition used (see Chapter 1, section 1.2), for the purpose of this research study, for financial innovation denotes to the process of initiating a new innovative idea and the employed factors and concepts that were considered.

Financial engineering, however, is the step that follows, which includes how the product is engineered and structured, this mainly refers to the use of 2 or more possible Islamic finance principles or contracts, in order to structure the approved financial innovation in step one. The actual process after engineering the structure is to develop and deliver the product; this is referred to here as new product development (NPD). This process would include financial analysis, project management, market research, target market, market needs, marketing and commercialisation, operational procedures and processes etc. Figure A2.1 provides a (possible standardised) theoretical framework for religious orientation towards financial innovation and engineering.

Figure A2.1: A Conceptual Framework for Religious Orientation towards Financial Innovation and Engineering

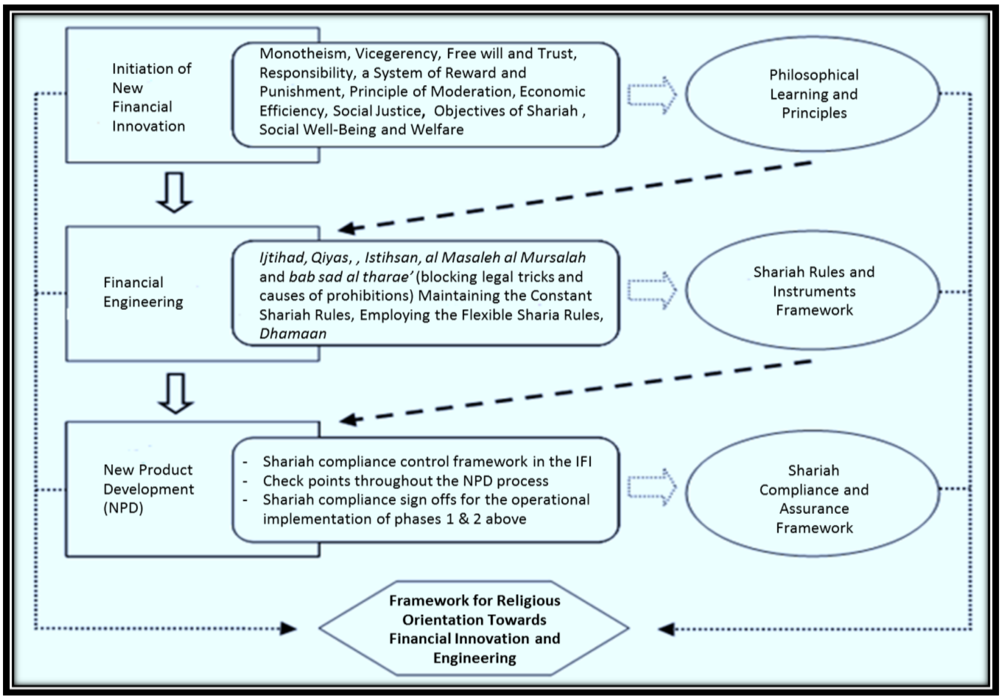


Figure A2.1 above depicts the three-phase cycle for financial innovation and engineering. Phase one refers to the initiation of new financial innovation and factors that should be considered, for the acceptance and approval of any new innovation to ensure the outcome of it is not harmful to the society and is beneficial.

2.1 Phase one: Financial Innovation

This section discusses the drivers of IFIs to innovate and engineer financial products within the religious orientation framework. The philosophical learnings and principles of this framework are of paramount importance, they spring from strong beliefs as the key to the economic philosophy in Islam, which lies in a person's relationship with the one God, His universe and His creation (see Chapter 6). Innovation orientation is also considered as a calculated plan towards achieving the intended objective (see Chapter 7, section 7.3.1). This strategic intent, which provides directions toward an organisation-wide commitment for financial innovation, is common between IFIs and non-IFIs. However, what defines the strategic direction of an IFI towards a specific commitment, in their innovation orientation, is the learning philosophy; see Chapter 7, section 7.4, (Worren, Moore, and Cardona, 2002).

This philosophy, as a common factor with other Abrahamic religions like Judaism and Christianity, is the basis of the moral appeal to humans to surrender themselves to the will of God, see Chapter 2, (Abu Sulyman, 1976; Al Najjar, 2003: 134). This emphasises that people are equal partners or that each person is a brother or sister to the other. As far as economic thought and the theory of financial innovation is concerned, this means cooperation and equality of effort and opportunity, all for the well-being and welfare of people and society as a whole, see Chapter 6, (Rice, 1999).

Therefore, man is believed to be God's *khalifa* on earth who is entrusted with all economic resources. This dictates that the deputy has to perform his duties in accordance with his superior's instructions (see Chapter 6). God has laid down His instructions for utilising economic resources on earth and innovating financial products from these resources in the manner He wishes it to be performed

(Meneam, 1979: 38; Ibn Taymiyyah,1994: 53-54; Al Maydani,1996: 5-10; Al Tha'alibi,1997: 536). Thus, as humans, we have a free will to act in harmony with God's code of conduct, or in other words the straight path, or to divert from it (Al Zarqa, 2012: 48-51). If we choose the latter, we will be accountable to God, for any violation of these rules by virtue of the principles of trusteeship and stewardship, and hence, we would deserve His punishment, see Chapter 6 (Wilson and El-Ashker, 2006: 38; Green, 1993).

Thus, the concept of moderation (*I'tidal*) should play a key part in the process of financial innovation. Islam, on one hand, recognises the contribution of individual self-interest through profit and private ownership of individual initiative, which drives efficiency and enterprise. On the other hand, Islam condemns greed; unscrupulousness and disregard for the rights and needs of others, which some secularists, sometimes encourage this worldly aspect of capitalism. The individual profit motive is not the dominant propelling force in this theoretical framework of religious orientation towards financial innovation and engineering (Ahmed, 1976; Siddiqi, 1981).

Shariah aims to achieve benefits for individuals and the society. Shariah never states anything except to achieve a real benefit (*maslaha*) as discussed in Chapter 10. Islamic scholars observed that all the teachings of Shariah aim at preserving and protecting five main benefits or objectives, namely, religion, life, intellect, progeny, and property (or wealth). Those five benefits (or necessities as some call them) are essential to the human life (Al Ghazali, 1987).

The incorporation of the five Shariah objectives in any financial innovation is very important and should be clear in the documented process of the financial innovation. This is not currently the case in IFIs, as the survey findings (Chapter 9) revealed. For instance, in terms of protecting the religion, this could be achieved by innovating financial products that meet Shariah requirements to help people avoid dealing with interest-based financial products, which are prohibited under Shariah. Such innovation should be pure and should not lead to any prohibition in either form or substance; a Sharia scholar illustrated this point in the following statement:

> *So the standard for any framework is to achieve the Shariah objectives. There are red lines that this framework should not cross, such as riba and gambling even financial innovation that could contain or lead to their substance without the form, will contradict the Shariah objectives. (Islamic scholar from Qatar Foundation).*

Thus, this achieves meeting an urgent need in the market that preserves the religion and help avoiding what is prohibited. Also, the objective of protecting the wealth can be achieved in the same way, people who do not have access to Shariah compliant financial products and are not able to invest their money, they would keep their wealth dull not invested. Providing financial products that meet Shariah requirements would fulfil this Shariah objective, as it would provide the acceptable alternative for people to invest and grow their wealth.

This would also preserve the life, intellect and lineage of the next generation. As a result of protecting people's religion and wealth, they will be able to pass their wealth to their children and grandchildren, start a family and give birth to new generation. Also providing them with a decent education to be more effective and benefit the society intellectually and otherwise. They would be able to do that because, they were able to preserve their wealth, invest it to grow and provide an income, which is *Halal* (permissible) and *Tayyib* (wholesome), that would help them provide a decent life for themselves and their lineage.

2.2 Phase two: Financial Engineering

After fulfilling the requirements in phase one, the process of structuring and engineering such financial innovation according to Shariah and Islamic finance principles would begin. The engineering process would consider how this innovation can be structured and the required Islamic contracts, which could be by using one or more contracts. Usually, the use of one contract would not require any financial engineering, as this would be considered a simple straightforward product development process. However, the financial engineering phase would require, at least, employing two contracts or more together in order to be able to provide the required structure for the financial innovation, and then examining the impact of this financial engineering. This approach is known as financial engineering as was described by some Islamic scholars and industry practitioners.

> *All Islamic finance principles and instruments are considered to be a type of financial engineering, because they involve other tools, such as the inclusion of a promise and a pledge in the core contract and structure of the product. This in itself is a form of financial engineering, an example we can discuss is Murabaha principle, we support this instrument with other tools such as an agency agreement, a promise and collateral to achieve its purpose and that is the concept of financial engineering. (Shariah scholar from the AAOIFI Shariah Board).*

The impact that should be considered, for such financial engineering, would be related to invalidating any of the requirements in phase one, such as contradicting a constant Shariah rule, the combination of more than one contract could lead to interdependency of each contract on the other, which is not acceptable under Shariah or could lead to a prohibited element, such as *riba*, two contracts or sales in one or selling what is not owned by the IFI.

This is, therefore, the key differentiator between the financial innovation process in Islamic finance as a religiously oriented process, where Shariah is a shared boundary object, (Bartel and Garud 2003; Bechky 2003; Boland and Tenkasi 1995; Carlile 2002, 2004; Levina and Vaast 2005; Pawlowski and Robey 2004; Star and Griesemer 1989; Nicolini, et al., 2012), and the traditional finance system. The plasticity of changing Shariah rules within the boundary of Shariah, as a defined structure, addresses modern financial needs. However, the collapse of this Shariah boundary and structure could render the financial innovation process in the Islamic finance industry boundary-less. As a result, the Islamic finance innovation would not be any different from the conventional one, as the enactment of Shariah as a boundary object is diminished in that process.

Instruments that could help in developing financial engineering, as the research findings show, are the Qur`an, *Sunnah*, *Ijma'* (consensus of qualified Islamic scholars regarding a financial matter), *qias* (analogical reasoning), *ijtihad* (individual scholarly interpretation), *istihsan* (approving something on the basis of social welfare, the Hanafi school equivalent of common good), *al masaleh al mursalah* (common good) and *bab sad al tharae'* (blocking legal tricks and causes of prohibitions). Qur`an and

Sunnah have provided the constant Shariah rules from which we could derive other rules, as long as there is no contradiction between them. Following on from the financial engineering process and deciding on the appropriate engineered structure for the innovation, from a Shariah perspective, the NPD process would start.

2.3 Phase three: New Product Development Process (NPD)

Following the initiation of a new financial innovation and considering the financial engineering structure, by ensuring that the engineered structure complements the philosophical learnings in phase one, the NPD process begins. The developed framework for financial engineering and NPD, shown in Figure A2.2 below, was a result of the findings of the questionnaire survey and interviews, which collected data about the existing practices in the Islamic finance industry in relation to financial engineering and NPD.

Siguaw et al. (2006) theoretical concept sees innovation orientation as composed of beliefs and understandings that lead to innovative action; innovative actions are the outcomes, not the components, of an innovation orientation. Based on the framework of innovation orientation developed by Siguaw et al., (2006), the financial innovation in IFIs is driven by a mixture of IFI's religious orientation and strategic direction (as depicted in Figure 7.2in Chapter 7), the formal and informal systems, and the key actors' competencies.

The theoretical framework also introduces the concept of enacting religious orientation as a boundary object, in accordance with the boundary object theory, and the enactment of Shariah as a shared boundary object in coordinating the efforts of various groups. It also introduces the concept of plasticity of Shariah as a boundary object in the financial innovation and engineering process as a dynamic theoretical concept (Nicolini, et al., 2012; Bartel and Garud 2003; Bechky 2003; Boland and Tenkasi 1995; Carlile 2002, 2004; Levina and Vaast 2005; Pawlowski and Robey 2004; Star and Griesemer 1989; Scarbrough, et al., 2015).

Figure A2.2: Standardised Framework for Financial Engineering and NPD

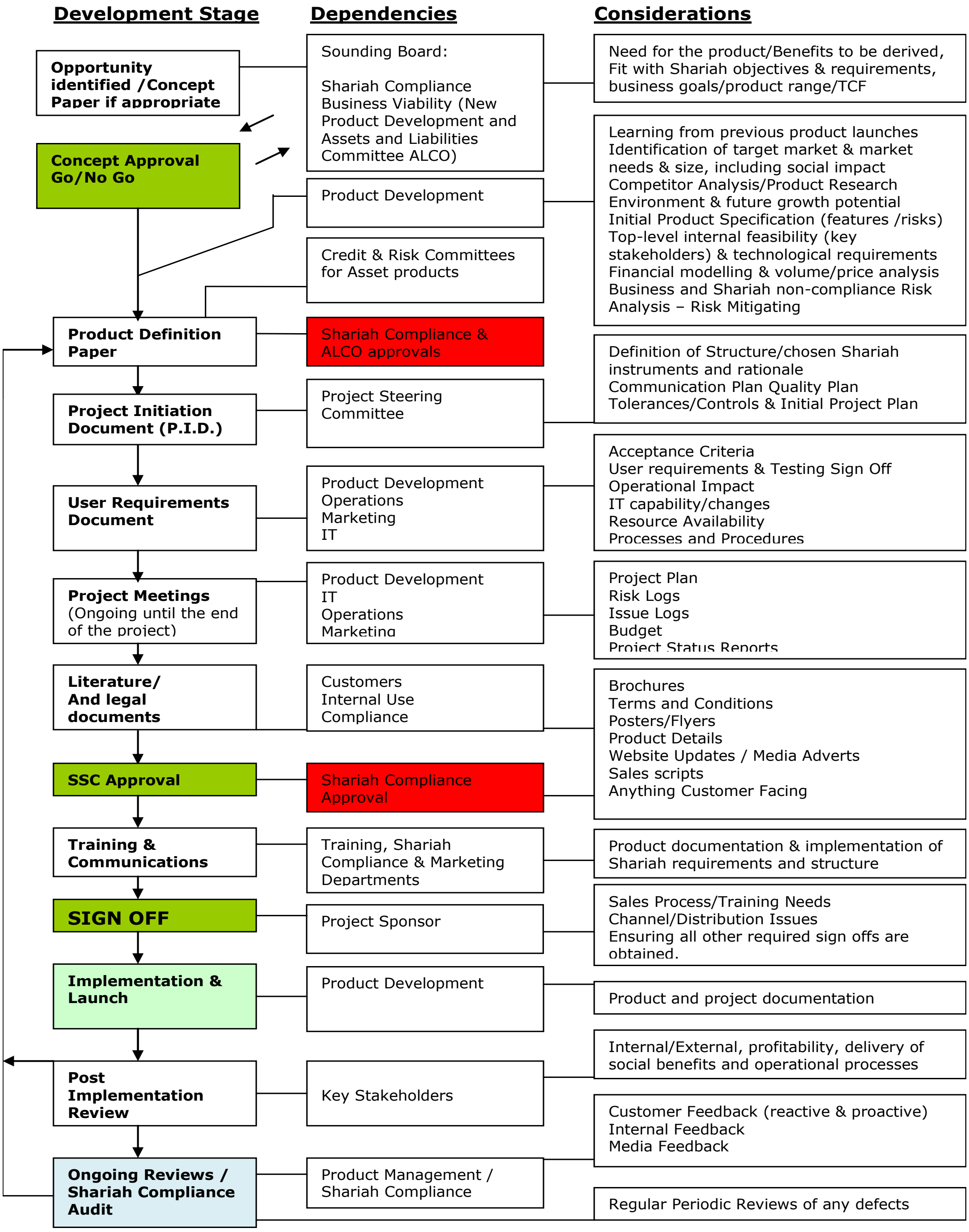


Figure A2.2 builds on the framework developed in Figure A2.1 and the theoretical framework in Figure 7.2 in Chapter 7 and sets the detailed process for phases two and three. This process shows the steps to be followed for what we believe to propose a best practice unified framework for financial engineering and NPD in the Islamic finance industry. The proposed developed framework incorporates business and Shariah requirements for NPD process. It highlights the key controls for required checks and approvals based on progress of key milestones in the development cycle.

The new financial product would start to take much clearer shape in the product definition paper (PDP) where the structure of the product, the engineered Islamic finance principles and the rationale for using the chosen structure are clearly defined and explained. The features, benefits, financial modelling, target market, customer research, sales process to ensure this process follows Shariah ethics and guidelines, and risk analysis is also one of the main components of the PDP. This process would be led by the product development team with close cooperation with other stakeholders in the IFI as shown in the survey findings (Chapter 9).

The Shariah compliance role would be to oversee the development process, review and approve the product documentation, ensure that the approved steps and requirements in phase 1 and 2 are maintained in the NPD process. Also, to monitor any diversion in the operational application from what was approved, and to undertake the post implementation audit review to check if the product is delivering the intended outcome from a Shariah compliance perspective. The product sponsor ensures that all required development work, required approvals and sign offs are obtained and all testing and operational processes are complete, before providing the approval for the launch of the product. Customer feedback would be collated about the product and their experience to address any defects or issue that may arise post implementation.

The Financial Conduct Authority (FCA) in the UK started recently, in November 2014, enforcing conduct risk principles to be incorporated in the conduct of business in the financial market and financial institutions. The FCA sets their 2014/15 forward looking view of the conduct and prudential landscape for the firms they regulate and the consumers who are served by them. They look at what causes risk in the financial markets and how these factors affect the firms and consumers that participate in them. The FCA has divided the drivers of risks into three groups. The Inherent factors, Structures and business conduct features are the internal characteristics of financial markets and market participants and are influenced by the Environmental developments (FCA Risk Outlook, 2014)[21].

IFIs are also required to comply with conduct risk principles in financial innovation and engineering processes; however, they are more prudent as they should also comply with Shariah principles. Ethical conduct in IFIs is an intrinsic feature of Islamic finance and it requirements, it is an internal core part of the operations of IFIs and the NPD process, rather than being an add-on or principles enforced externally by a regulator.

Therefore, for the completeness of the research objectives in providing an empirical contribution that would equip IFIs with a practical guide, the developed framework in Figure A2.3, in addition to Figures A2.1 and A2.2 above provides a working document for NPD. This framework embeds Shariah requirements (as a shared boundary object) and conduct risk considerations. Moreover, it develops key performance indicators (KPIs) for both Shariah requirements that flow from the framework developed in Figures A2.1 and A2.2 and conduct risk considerations related to the NPD process.

[21] Financial Conduct Authority (FCA), 2014, FCA Risk Outlook, accessed on 24/05/2015, available from: http://www.fca.org.uk/static/documents/corporate/risk-outlook-2014.pdf

Figure A2.3: Key NPD Stages and KPIs

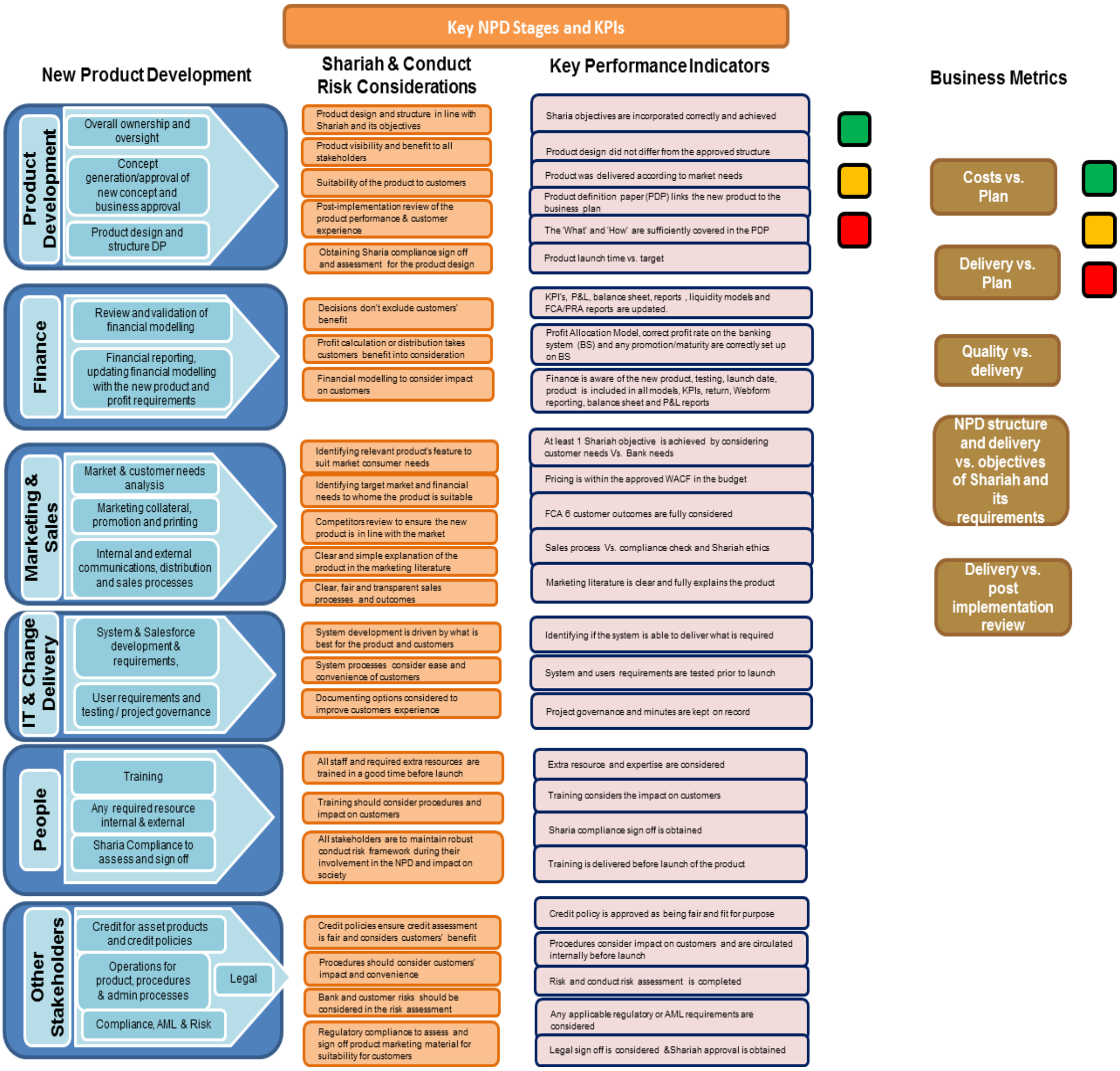


Figure A2.3 above would help managers of IFIs in the NPD process in order to comply with all Shariah and conduct risk requirements. This framework divides the process into six key stages and can be used for each new financial product as a working document to ensure all required and applicable considerations are incorporated. It also includes KPIs and colour coded rating (Green: means all requirements are considered; Amber: means requirements to be watched for full incorporation; Red: means a breach of the requirements) for each stage. It guides IFIs' managers in relation to Shariah and conduct risk considerations during the development process, and would act as an evidence to be provided for a proper governance to Shariah compliance advisers/auditors and regulators. This would demonstrate that the IFI has endeavoured to follow best practice in all aspects. The framework suggests some business metrics that also can be assessed in the NPD process and delivery of the key business metrics, which could be developed further or amended to suit applicable business requirements of the IFI.

The primary data collected in the survey and interviews showed clearly that IFIs seem ambiguous in their response about the financial innovation and engineering process, and how they address its complexity in accordance with Shariah. As a result, the nature of Shariah driven framework in the IFIs is unpredictable and changes dynamically, as explained in role of Shariah as a boundary object in the financial innovation and engineering process (see Chapter 7, section 7.5).

The degree of religious orientation and enactment of Shariah as a shared boundary object is linked to various factors, including the cultural and philosophical learnings that the IFI adopts and the strength and effectiveness of the Shariah compliance control framework. Hence, IFIs are prone to a lack of formally codified religious rules and a measuring tool for the level of religious orientation of their financial innovation and engineering. This would create a substantial business and reputational risk for IFIs. It is hoped that this issue is addressed in the developed frameworks in Figure A2.1, A2.2 and A2.3 above.

3. Conclusion

This Appendix attempted to conceptualise the empirical findings of the research, in particular findings from the survey and interviews that were encapsulated into a possible theoretical framework.

This suggests an urgent need for a comprehensive theoretical and empirical framework to help IFIs standardise and align their practices and processes regarding financial innovation and engineering in the Islamic finance industry. This has, to a great extent, been achieved by the framework that this study developed (see Figures 7.2, A2.1, A2.2 and A2.3).

Appendix 3: Triangulation

1. Introduction

This Appendix presents the findings of the triangulation of the research method through a documentary analysis as discussed in Chapter 8, section 8.4.3. The documentary analysis method, undertaken here, compliments the analysis conducted on the data collected by questionnaire survey (Chapter 9) and interviews (Chapter 10) for more robustness and rigorous findings.

It examines current practices in the Islamic finance industry as a whole and IFIs, by analysing existing financial products and innovation in the market against the framework that has been developed (Figures A2.1, A2.2 and A2.3). This framework was developed, as a result of the research findings from the survey and interviews analysis, which provided an in-depth insight into current practices in relation to financial innovation and engineering in IFIs.

The documentary analysis aims to cover a wide range of existing financial products, for a representative view of the existing practices. Thus, the aim of the analysis was to include a sample of main financial activities undertaken in the Islamic finance industry. The activities were divided into four segments, retail, investment and commercial, derivatives and *sukuk* issuance. By doing so, it is assumed that all areas of financial activities, which included an investment account, a home finance product, a derivative product and a financial market product (*sukuk*) are covered.

The documentary analysis is based on collecting all available documents associated with the financial product being analysed, this includes prospectus, terms and conditions, product structure and processes, product information and Shariah compliance certificate if available. It does not include internal NPD processes as this would not be available to analyse the steps followed by the IFI in developing the financial product due to confidentiality, this element, therefore, was covered in the survey (Chapter 9) that obtained data about such processes.

The available documents from various IFIs were reviewed thoroughly and the analysis process was based on a set of criteria (see Chapter 8, section 8.4.3) that were extracted from the developed theoretical framework for financial innovation and engineering in Figures A2.1, A2.2 and A2.3. This theoretical framework was used as a measurement tool for existing financial innovation and engineering practices in the Islamic finance industry. Details of the scope and guidelines employed in the process of documentary analysis are explained in Chapter 7, section 7.4.31 and 7.4.3.2. The chapter concludes, then, with the evaluation from a Shariah perspective for the examined financial products.

2. Findings of the Triangulation Through Documentary Analysis

As discussed above, the developed framework (Figure A2.1, A2.2 and A2.3) was used as a measurement tool to analyse the level of religious orientation in meeting Shariah requirements of various financial products in the market that are offered by IFIs. This analysis is based on obtaining and reviewing all associated documents related to the financial product in question. The documentary analysis method provides the third dimension for the triangulated-method approach alongside the survey and the semi-structured interviews for more reliable and robustness checks of the research findings as shown below in the coming sections.

2.1 Documentary Analysis of an Investment Product

The documents selected for the analysis of an investment product is a *wakala* agreement for investment that belongs to Islamic banks based in the Middle East. *Wakala* is (Ramadan, 2005: 67) an agency agreement for investment, (see explanation of *wakala* principle in Chapter 2, section 2.4) it is used by Islamic banks for inter-banking placements, when banks deposit funds with each other, or to provide deposit savings products to retail and corporate clients. The document analysed is the Master *Wakala* Agreement for Investment which sets all the terms and conditions of the transaction and the transaction documents.

2.1.1 Shariah objectives

The documents do not specify adhering to certain Shariah objectives, it seems that current practices do not suggest that either. However, that would, usually, be imbedded within the document somehow and would require to be extracted based on the analysis of certain sections of the documents. The analysis identified two Shariah objectives incorporated whether intentionally or not, when the document mentions ‘that the transaction and each related document are for only investment in a Shariah compliant manner and all parties agree to abide by the rules of Shariah’. This incorporates the Shariah objectives of preservation and maintenance of the religion, by avoiding interest-based transactions and using Shariah compliant transaction instead. It also incorporates the Shariah objective of safeguarding wealth, by investing the funds provided by the investor to grow it and make profit in accordance with Shariah.

2.1.2 Social welfare impact

The social impact of this financial product is also not mentioned clearly in the documents. However, it is implied by the way the *wakala* contract works, as there is an investment relationship between the parties which results in purchasing and selling commodities, that complies with the Shariah requirements of undertaking activities that are not harmful, and where other stakeholders in the society would benefit as well. It is worth noting that what they would consider harmful, would be based on the level and robustness of their internal Shariah compliance control.

2.1.3 Suitability of the selected Islamic finance principle or structure

The *wakala* principle is suitable as a structure for this type of product, although another suitable structure is *mudaraba* (see definition of *mudaraba* in Chapter 2, section 2.4).

2.1.4 Compliance of the structure with all requirements of the Islamic finance principle employed

The structure as detailed in the master agreement seems to fulfil all requirements of the *wakala* principle. However, if this structure is used in the context of a retail deposit, as defined in the Financial Services and Markets Act (FSMA) 2000, it means that the IFI has to guarantee the principal amount deposited. This is a clear breach of the Islamic finance principle of *wakala*, where unless there is a clear negligence or gross misconduct of the IFI, the IFI is not liable for any loss in the principal amount because it acts as a trustee. Other IFIs make a specific disclaimer to address this issue in their terms and conditions in order to comply with both Shariah and regulatory requirements, they state:

> *If your deposit amount returns a loss, we shall offer to make good the amount of any shortfall that you may have suffered. We are required by current UK bank regulations and policy, pursuant to clause xx, to make this offer to you. If you choose to accept this offer, you shall be entitled to receive payment from us of the full amount that you had previously deposited with us. You are entitled to refuse this offer from us.*
>
> *We would like to draw your attention to the guidance offered by our Sharia Supervisory Committee. Their guidance is that if you accept our offer to make good the amount of any shortfall (set out in special condition xx), you will not be complying with Sharia principles. (An extract from a UK based Islamic bank's terms and conditions for a wakala investment product).*

This issue presents one of the regulatory restrictions that form a challenge for introducing Islamic finance innovation and financial products that are Shariah oriented.

2.1.5 A Shariah compliant product or a Shariah inspired product in form and substance

The structure of this product seems to go beyond just being compliant with Shariah to the category of being inspired in form and substance, as this structure is not a complicated one. A Shariah compliance certificate of the product was also available which explains the structure and corresponds to the legal terms. There is, however, an issue though in relation to how it can ensure that the trustee is going to follow Shariah guidance when undertaking the investment transactions. This issue is, (Rammal, 2006), covered by the Shariah governance of the IFI and the internal Shariah compliance audit reviews which perform these checks.

2.2 Documentary Analysis of a Home Finance Product

The analysis of this type of financial product, offered by IFIs, is based on all available product documents that are part of the offerings. Islamic home finance is based on three main different structures a *murabaha* based home finance, an *ijarah* based home finance and a diminishing *musharaka* with *ijarah* structure, (see explanation of each of those principles in Chapter 2, section 2.4). For the purposes of this analysis, we have selected a structure based on diminishing *musharaka* with *ijarah* for a home finance, which is also considered financial engineering as it involves employing various contracts within the product. The reason for choosing this particular structure for the analysis is because it is very common structure and is more complicated than other available structures, as it uses various Islamic finance principles (financial engineering) to offer the desired financial product.

The structure works as follows, as described by the Islamic bank offering this product: the bank and its client contribute towards the purchase or refinance of the chosen property, by the client, as partners. The Islamic bank (IB) agrees to sell its share of the property to the client over a period of time, known as the finance term. The IB also leases its share of the property to the client, for which the client pays a monthly rent. Therefore, the monthly payment consists of two elements: an acquisition payment, which is the payment the client makes to acquire the IB's share in the property; and a rental payment which is the charge for renting the IB's share in the property. Monthly acquisition payments will remain constant throughout the term of the finance and the rent element is variable. Once the IB's share is fully acquired in the property, the monthly payments cease and full legal ownership of the property transfers to the client.

The analysis is based on reviewing four associated legal documents, diminishing *musharaka* agreement, lease agreement, service agency agreement and legal charge agreement, in addition to the offer document and product leaflet.

2.2.1 Shariah objectives

The documents do not specify adhering to certain Shariah objectives, although it is a good Shariah compliance practice to do so. However, this is imbedded implicitly within the document. Two Shariah objectives were identified, whether intentionally or not, when the diminishing *musharaka* agreement states that 'the transaction as a whole and each related agreement are for only enabling the IFI to provide finance in a Shariah compliant manner and all parties to the agreement agree to be bound by the rules of Shariah and never to claim interest payments from each other'.

This incorporates the Shariah objectives of preservation and maintenance of the religion, by avoiding interest-based transactions and providing clients with the Shariah compliant alternative. The second

Shariah objective, that was met, is safeguarding wealth by ensuring that the customer share is paid towards a legitimate purpose under a Shariah structure that would financially benefit both the IFI and the client. The IFI financial benefit is made from the rent element in accordance with Shariah and the client acquires its home.

2.2.2 Social welfare impact

The social impact of this financial product is also not mentioned clearly in the documents. However, this is implied by the overall product structure, as there is an approved process as mentioned in the diminishing *musharaka* agreement to ensure that the client chooses suitable property that they can afford. Also, providing the client with a Shariah based finance solutions for housing that meet pressing needs in the market. This product provides a solution for financial inclusion of Muslim clients to be able to finance their homes in accordance with Shariah. Also, ensuring that this process will not generate a negative or harmful outcome to other stakeholders in the society.

2.2.3 Suitability of the selected Islamic finance principle or structure

As mentioned above there are more than one structure available in the market for offering home finance. The diminishing *musharaka* with *ijarah* (DMI) structure is believed to be more appropriate and flexible than the other two structures, i.e. *murabaha* and *ijarah* only structures. This is because (Khir et al., 2008: 229) of the flexibility of the pricing structure of a DMI structure, which works better for possible adjustments of the product and its profit, i.e. rental rate, throughout the finance term, in order to facilitate refinancing, releasing equity, reducing the finance term, lump sum payments by the client to increase its equity or early settlement. Also, this structure is believed to be more suitable from a profit rate risk management perspective, as the rental rate charged by the bank could be adjusted according to agreed intervals based on a benchmark or an index. This would work better for both the IFI and the client at the same time.

2.2.4 Compliance of the structure with all requirements of the Islamic finance principle employed

Components of a DMI for home financing are:

(a) The unilateral promise made by the client to purchase the IFI's beneficial interest in the property over the finance term. This is, usually, countered by an open offer from the IFI to sell its beneficial interest to the client.

(b) A lease agreement that specifies the terms of the lease and particulars of rental payments. It also stipulates the roles and responsibilities of each party, the IFI in our case shifted its responsibilities under the lease in relation to maintenance of the property to the client under an agency agreement.

(c) A service agency agreement which appoints the customer as the IFI's service agent in the IFI's beneficial share of the property, this suggests that the IFI would pay its share of any costs incurred. However, nothing was mentioned in the document about this process in either the lease or the service agency agreements.

(d) A legal charge agreement in order to secure the monthly payments, this should apply only to the rental payment but not the acquisition payments. Nevertheless, that was not the case in the reviewed documents and it is mentioned that a default on acquisition payments constitute an event of default. This could be due to regulatory guidelines in relation to regulated mortgages (in particular with the Mortgage Market Review (MMR), which became effective from April 2014, that was conducted by the UK regulator and tightened the rules on mortgage provides) and what constitutes an event of default. The rules do not differentiate between a Shariah compliant home finance and a traditional mortgage.

(e) The approval of the diminishing *musharaka* model, by many Shariah scholars, was on the view that it is a form of *sharikat al-mulk* (partnership in a property) not as *sharikat al-'aqd* (partnership by contract). While the parties are not allowed to agree in advance a fixed price for the forward sale of partnership shares among themselves, as this would constitute a *riba* transaction, this does not apply in *sharikat al-mulk* (which the analysed product is based on) because the contract is not intended as a profit making venture for either party (Diwany, 2010: 263). Other Shariah scholars disagree with this view, i.e. agreeing in advance a fixed sale price of the IFI's share in the property, because the IFI is not using the market value or price of the property at the time of sale (Diwany, 2010: 263).

2.2.5 A Shariah compliant product or a Shariah inspired product in form and substance

The structure of this product seems to be Sharia compliant; it does not go beyond that to the category of being Sharia inspired in form and substance. The implied complexity in the structure is a key factor for that and differences in the scholarly views in relation to the principle itself. It, however, meets the minimum requirements by Shariah as a Shariah compliance certificate of the product was also available, which explains the structure briefly. We would suggest a possible review of the structure of this product for enhancement of its structure, a better justification and further details in the Sharia compliance certificate of the structure.

2.3 Documentary Analysis of a Derivative Product

The document selected for the analysis of a derivative product is a sale and purchase of currency master agreement, or as also called FX currency swaps, which is used by many Islamic banks. The sale and purchase of currency under Shariah (Ramadan, 2005: 147) is subject to strict rules, as this type of contract should be used on spot basis and not as a future trade. This is because this could render the agreement as a *riba* transaction. The counter values of buying and selling money in a FX contract should be exchanged on spot, according to the applicable exchange rate at the time of executing the transaction. This is because money is classed as a usurious item in Shariah.

This transaction is used between counterparties IFIs to hedge their exposure to currency movements. It involves two spot currency exchange transactions, one at present and the other at a future date, with a binding unilateral promise. The document analysed here is the master agreement for the purchase and sale of currencies, which sets all the terms and conditions of the transaction.

2.3.1 Shariah objectives

The master agreement does not specify its aim to satisfying particular Shariah objectives. However, it is assumed that would be imbedded within the document somehow. The analysis has identified two Shariah objectives incorporated whether intentionally or not and were extracted from the objective of the contract. The document states in the recital that:

B *The Bank and the Customer have agreed to enter into Transactions on the terms and conditions of this Deed.*

C This Agreement is entered into by the Parties in compliance with Shariah principles.

This incorporates the Shariah objectives of preservation and maintenance of religion, by avoiding dealing with interest-based transactions, to achieve the desired outcome by using Shariah compliant transaction instead. The other Shariah objective that was identified is safeguarding wealth, by using transactions that comply with Shariah in order to hedge the position of the IFI against being exposed to currency exposure and market movement. This is a way of risk management for currency exposure that protects against financial loss.

2.3.2 Social welfare impact

The social impact of this financial product is also not mentioned clearly in the documents. However, that is implied by the objective of undertaking this transaction. This objective is to sell and purchase currencies, which is a legitimate economic activity under Shariah as all involved parties will benefit from it. This is also achieved by analysing the outcome of this transaction, which is managing risks involved with the IFI’s exposure to currency volatility in the market, and protecting its position in accordance with Shariah. If the IFI was exposed to this risk and collapsed, as a result of that exposure, this would cause great harm to the welfare of the society and the IFI’s clients.

2.3.3 Suitability of the selected Islamic finance principle or structure

The existing structure, as a hedging mechanism for a currency exposure, is the only available Shariah compliant structure that serves this purpose. It delivers the required outcome as long as; there is a robust internal Shariah control in the IFI to ensure that the documentation and each transaction are executed properly in accordance with Shariah rules. There is, possibly, a room here for an alternative financial innovation that could serve the same purpose.

2.3.4 Compliance of the structure with all requirements of the Islamic finance principle employed

The structure as detailed in the master agreement seems to fulfil all requirements of the sale of currency contract under Shariah, except for the following issues that were identified:

(1) It should be made clear, as a Shariah requirement, at the beginning of this contract that it is for hedging purposes only, (Dusuki et al., 2012), in order not to be used for other purposes , such as pure profit making.

(2) The contract failed to include the standard ‘interest clause’ that is required in each Shariah compliant financial contract, in particular those who are governed by a secular jurisdiction law, such as English law. The purpose of this legal clause is to ensure that neither party to the contract will claim from the other interest payment in any legal proceedings.

(3) The contract also failed to address an important issue associated with this type of transaction, what happens if the transaction is not completed, for any reason, within the spot period of 2 days for settlement. This is an important issue that is omitted in the contract, because if the transaction was not concluded within the spot period, T+2 as practiced in the financial market, the contract will be void under Shariah rules, and a new transaction should be initiated on the same terms.

The above three issues are the main findings from the analysis of the document in question, which affects its full compliance with Shariah.

2.3.5 A Shariah compliant product or a Shariah inspired product in form and substance

The structure of this product seems to fall in the category of not meeting the very minimum of Shariah requirements. There are some serious Sharia non-compliance issues that need to be addressed, as mentioned above. In particular, issue No. 3, Section 6.4 above, which form a substantial uncertainty (*gharar*) in the contract. Therefore, our view in relation to this contract is that, it does not satisfy Shariah requirements in either form or substance.

2.4 Documentary Analysis of *Sukuk* (equity based Islamic certificate) Issue

The analysis of this type of financial product is based on reviewing the base prospectus of the some *sukuk* issuances and their Shariah *fatwa*. *Sukuk* is defined as "certificates of equal value representing undivided shares in ownership of tangible assets, usufructs and services, assets of particular projects or special investment activity" (AAOIFI, standard No. 17, 2014). The analysis was for a *sukuk* issued by a multilateral Islamic bank based in Saudi Arabia. The total *sukuk* issue is for a value of U.S.$6,500,000,000, the trust certificates are issued by a trust company incorporated in Jersey. The programme is based on issuing a series of trust certificates for the total value of the *sukuk*.

2.4.1 Shariah objectives

The sukuk base prospectus does not specify considering certain Shariah objectives, although it is a good Shariah compliance practice to do so. However, this was integrated implicitly within the document. Two Shariah objectives were identified by analysing the base prospectus. It implies raising funds in a Shariah compliant way and observing preservation and maintenance of religion, by avoiding dealing with interest-based transactions to achieve the desired outcome. The other Shariah objective that was identified is safeguarding wealth, by using transactions that comply with Shariah in order to invest and manage the funds collected to generate income that is distributed among the certificate holders.

2.4.2 Social welfare impact

The social impact of this financial product was, to some extent, mentioned clearly in the documents. There was a clear reference to the assets purchased and possible use of it in social projects and improving infrastructure. That was implied by stating that the portfolio, which is the subject of the trust is a portfolio of assets created by the issuing IFI that would be separate and independent from all other assets of the IFI and shall comprise of:

> *(a) at least 33 per cent. tangible assets comprising of leased assets, disbursing Istisna'a assets, shares and/or Sukuk; and*
>
> *(b) no more than 67 per cent. intangible assets comprising of Istisna'a receivables and/or Murabaha receivables, including, without limitation, the right to receive payment of any amounts due in connection with such assets, the right to demand, sue for, recover, receive and give receipts for all amounts payable, or to become payable, under the assets and/or agreements relating to the assets and the benefit of, and the right to sue on, all covenants in favour of the IFI and the right to exercise all powers of the IFI thereunder, the constituent elements of which may be supplemented from time to time with additional portfolio assets.*

This major programme for issuing *sukuk* certificates to raise funds in order to finance big social projects is for the benefit of all stakeholders in that venture and the society as a whole. The IFI makes a clear reference to its socially responsible approach as it states that it carries out a number of other activities which have an impact on social and economic development. These include:

- human capital development, by way of providing scholarships and extending training
- opportunities to individuals engaged in development activities;
- undertaking research in Islamic economics, banking and finance;
- social infrastructure development; and
- various support activities for private sector development.

2.4.3 Suitability of the selected Islamic finance principle or structure

The *sukuk* issue is structured on the *wakala* Islamic finance principles, the issuing trust company appointed an agent to collect the income and distribute it to the certificate holders. The base prospectus sets clearly the method used and state clearly that it follows AAOIFI Shariah and accounting standards. The legal structure seems to be in accordance with the *wakala* principle as described in AAOIFI Shariah standards, and is reflected clearly in the terms and conditions. Therefore, the employed Islamic finance principle is believed to be suitable for the structure of the *sukuk*.

2.4.4 Compliance of the structure with all requirements of the Islamic finance principle employed

The legal terms state that the trust certificates are limited recourse obligations trust certificates issued under the programme ‘are not debt obligations of the Trustee’. Instead, the trust certificates represent ‘an undivided beneficial ownership interest in the relevant trust assets’. This is completely in accordance with the principle of *wakala*. Recourse to IFI in respect of each series of trust certificates therefore, is limited to the trust assets of that relevant series of trust certificates, and the proceeds of such trust assets are the primary source of payments on the relevant series of trust certificates.

The analysis also covered examining if the *sukuk* is asset-backed or asset-based. According to Moody’s (an international rating agency) definition, asset-backed *sukuk* are those whose “investors enjoy asset-backing; they benefit over some form of security or lien over the assets, and are therefore in a preferential position over other, unsecured creditors. In other words, in the event the issuer were to default or become insolvent, the noteholders would be able to recover their exposure by taking control of and ultimately realising the value from the asset(s). It also requires the element of securitisations to be present, true sale, bankruptcy remoteness and enforceability of security, (Lotter and Khalid, 2007).

On the other hand, asset-based *sukuk* are those for which “the originator undertakes to repurchase the assets from the issuer at maturity of the *sukuk*, or upon a predefined early termination event, for an amount equal to the principle repayment. In such a repurchase undertaking, the true market value of the underlying asset (or asset portfolio) is irrelevant to the *sukuk* certificate holders, as the amount is defined to be equivalent to the certificate (Lotter and Khalid, 2007).

In this case, certificate holders have no special rights over the asset(s) and rely wholly on the originator's creditworthiness for repayment. Thus, if the originator is unable to honour its obligation to repurchase the assets, the certificate holders are in no preferential position to any other creditors, or indeed in no weaker position to any other unsecured creditor, stressing the importance that the purchase undertaking ranks *pari passu* with any other of the originator's senior unsecured obligations (Lotter and Khalid, 2007).

Similarly, in asset-backed *sukuk*, the *sukuk*-holders are the owners of the asset, and the actual performance of the underlying asset will determine the return to the *sukuk*-holders (Dusuki and Mokhtar, 2010). Therefore, the analysis concludes that the sukuk issue in question, based on the analysis of its documentation, is asset-backed and fully in accordance with Shariah requirements.

Hence, there is a need to move towards more asset-backed *sukuk* in the market. In order to promote this, Islamic scholars will be the main driving force that will determine the growth of asset-backed *sukuk.* This can be achieved by Islamic scholars demanding that the Shariah requirements and the legal status of the *sukuk*-holders are aligned. Issuers who want to raise funds must be ready to part with their asset, and investors who want to invest in *sukuk* must be prepared to take asset risk (Dusuki and Mokhtar, 2010).

2.4.5 A Shariah compliant product or a Shariah inspired product in form and substance

We can therefore, based on the above analysis, say that asset-backed *sukuk* clearly fulfils the Shariah requirements and eliminates all the controversial Shariah issues that are associated with asset-based *sukuk*. Also based on the incorporation of Shariah objectives and commitment to social welfare by the IFI, the structure of this *sukuk* seems to go beyond Sharia compliant to the category of Shariah inspired in form and substance. This is based on examining and subjecting the *sukuk* issue to all the above criteria.

3 Summary of the Documentary Analysis Findings

This section provides a brief summary of the documentary analysis review and its main findings as discussed above. Table A3.1 below shows the main findings of the documentary analysis for each of the financial products.

Table A3.1: Summary of the documentary analysis findings

Criteria	Investment Product	Home Finance	Hedging /Derivative Product	Money Market Product / *Sukuk*
Islamic finance principle	*Wakala*	Diminishing *musharaka* with *ijara*	Sale and purchase of currency / *sarf*	*Sukuk al wakala*
Shariah certificate is available	✓	✓	✓	✓
Meeting Shariah objectives	✓	✓	✓	✓
Shariah objectives stated clearly	✗	✗	✗	✗
Considered social welfare	✓	✓	✓	✓
Social welfare stated clearly	✗	✗	✗	✓
Structure is Shariah compliant	✓	✓	✓	✓
Structure goes beyond minimum Shariah compliance requirements	✗	✗	✗	✓
Legal terms include 'interest clause'	✓	✓	✗	✓
Asset backed	✓	✗	✓	✓

4 Conclusion

This Appendix conducted a documentary analysis review of key financial products as offered in the Islamic finance industry. Various documents from around 5 IFIs collected for each product. The analysis provided great insight into current practices of IFIs, in relation to financial innovation and engineering. It shows to a great extent, based on the developed framework for financial innovation and engineering (Figure A2.1), various levels of incorporating Shariah requirements in the process of NPD.

The analysis concluded that, although Shariah objectives are not referenced in the product structure or documentation, but it is integrated to some extent in different ways. A good practice for IFIs is to state clearly the Shariah objectives that the developed financial product satisfies, and the justification of how it is satisfied. The analysis also revealed a variation of the level of Shariah compliance and integration of its requirements, in relation to financial innovation and engineering, in the Islamic finance industry.

Appendix 4: Survey Questions

General Instructions and Information

1. All the information given will be treated in the strictest confidence and will be used for academic research purposes. **If you do not have the exact answers to the questions or the question is not related to your area of expertise, please provide your best judgments as to what you think the answer should be by ticking the appropriate boxes in the statements. Your answers are very important for the accuracy of the study**.
2. If you wish to make any comments, please feel free to use the space at the end of the questionnaire.

A. General Information

1. Information about your institution

* Name of the Financial Institution:

* Location/Country of the Institution

2. Respondent's Position/Role

3. Nature of Activities

- Islamic Commercial Banking
- Islamic Investment Banking
- Islamic Window (in a Conventional Bank)
- Islamic Retail Bank
- Islamic Fund
- Takaful Operator
- Other, (please specify below)

4. Does the institution have a Shariah Supervisory Board/Committee?

- Yes
- No

If Yes, how many members are there in the Shariah Supervisory Board/Committee?

5. Does the institution have an internal Shariah Compliance Department/Advisor? If Yes, please go to question 7.

Yes

No

6. If you answered No to question 5, who advises the institution on the day-to-day Shariah related issues? (Please choose the appropriate answer)

This function is covered by a member of the Shariah Supervisory Board/Committee

This function is outsourced to an individual

This function is outsourced to an external Shariah Advisory Firm

Other, (please specify below)

B. INNOVATION

7. Do you think Islam provides: (Please tick all appropriate boxes)

An independent Islamic economic and finance system

An interest-free version of the conventional economic and financial system

A middle way approach to finance, but does not offer a stand-alone economic and financial system.

An Islamic economic and finance system does not exist and what is known as Islamic finance is actually just business ethics.

8. Do you think financial innovation is considered to be:

Harmful to society and the financial system.

Useful to society and the financial system.

Regulatory and Shariah induced innovation (i.e. which is driven by and complies with both Shariah and regulations) which serves a beneficial purpose in society.

A way to circumvent and avoid financial regulations and the objectives of Shariah-based Islamic financial principles.

9. Do you think Shariah encourages financial innovation that does not contravene its principles?

Yes

No

10. What are the acceptable financial innovation instruments in Islam that help in innovating new financial products? (Please tick all appropriate boxes)

☐ Ijma' (consensus of qualified scholars/Shariah Supervisory Board/Committee)

☐ Ijtihad (individual scholarly interpretation)

☐ Qiyas (analogical reasoning based on established precedents)

☐ Maslaha 'ammah (public interests)

☐ Istihsan (judicial preference for one legal analogy over another, usually to give preference for the public welfare)

Other, (please specify below)

11. What are the key barriers and challenges to innovating new financial products? (Please tick all appropriate boxes)

☐ Shariah Scholars' lack of knowledge about banking products and operations.

☐ Resistance of Shariah Scholars to new, contemporary applications of Islamic finance.

☐ Shariah is not flexible enough to accommodate and provide solutions for contemporary financial needs.

☐ Innovation is not encouraged in Islam as it is considered as creating something that is not from Shariah.

☐ Lack of understanding of the risks associated with Islamic finance products.

☐ Lack of research in the area of Islamic product development.

☐ Costs associated with developing new innovative products.

☐ Legal, tax and regulatory constraints for Islamic financial innovation and products.

Other, (please specify below)

12. Please identify the organisational/or your personal attitude (within your organisation) towards innovation in developing new products?

○ Supportive of new ideas

○ Resistant to new ideas

Reluctant to try new ideas

Neutral towards new ideas

13. What are the key sources of ideas for new innovation/products? (Please tick more than one as applicable from the options below)

Replicating products of conventional banks (re-engineering conventional financial products).

Products of other Islamic banks.

Customer surveys and feedback.

Market research.

In-house Research & Development.

Other, (please specify below)

C. PRODUCT DEVELOPMENT - STRATEGY AND PLANNING

14. How would you best explain the market position of your institution in relation to developing new products?

Developing new products in new markets

Developing new products in existing markets

Marketing existing products in new markets

Expanding existing products in existing markets.

15. What is the aim of your Islamic financial institution in relation to developing/innovating new financial products? (Please tick more than one as applicable from the options below)

Developing new products to compete with conventional financial institutions for a share of the market.

Developing new products to address the need of a religiously excluded customer segment.

To offer an alternative to conventional financial institutions.

Expanding its reach in the market for better profitability.

☐ Being socially responsible and serve the overall Shariah economic purpose of developing the society, establish justice, fairness and equality etc.

16. Who in your organisation can be best described as the main driver in generating ideas for new Product Development? (Please tick all appropriate boxes)

☐ Board of Directors

☐ CEO/MD

☐ Management Committee

☐ Marketing Department

☐ Internal / External Shariah Officer/Controller

☐ Strategy / Planning Department

☐ Research & Development Department

☐ Product Development Department

☐ Other, (please specify below)

17. How would you rank the availability of resources for Product Development in the following categories within your institution?

	Nothing specifically allocated	Allocated subject to requirements	Specifically allocated
Financial (budget)	○	○	○
People (knowledge, skills, etc.)	○	○	○
Technology (appropriate hardware and software)	○	○	○

18. Does a central specialised Product Development function/department exist in your institution? If your answer is Yes, please go to question 20

○ Yes

○ No

19. If you answered No to question 18, please specify which department is responsible for Product Development?

○ Marketing Department

○ Internal Shariah Compliance Officer/Controller

○ Strategy/Planning Department

○ Research & Development Department

○ Other, (please specify below)

20. Is there a particular individual/committee in your institution who is responsible to authorise the new products? If Yes, please state the position or title of this individual /committee below.

- Yes
- No

21. Would the in-house / external Shariah Compliance Officer/Controller be involved in the Product Development process? If your answer is No, please go to question 23

- Yes
- No

22. If you answered Yes to question 21, please identify the involvement of the Shariah Compliance Officer/Controller in the following (Please tick more than one as applicable from the options below)

- Concept generation stage
- Design stage
- Pricing stage
- Reviewing legal documentation from a Shariah perspective
- Submitting product documentation for approval by the Shariah Supervisory Board/Committee
- Testing stage
- Marketing documents stage
- Implementation stage
- Shariah audit stage (after product is launched)
- All the above
- Other, (please specify below)

D. PROCESS & STRUCTURE

23. Does the institution have a formally documented Product Development process? If your answer is No, please go to question 27, If your answer is Yes, please complete the subsequent questions

- Yes
- No

24. If you answered Yes to question 23, has the Product Development process document been approved by the Shariah Supervisory Board/Committee or internal Shariah Department?

- Yes
- No

25. Is the product development process document regularly updated?

- No
- Yes, how often (please specify below)

26. How strictly is the product development process adhered to?

- Very strictly
- Strictly
- Less strictly
- Not strictly
- Used as a guideline only

E. DESIGN

27. What are the steps used for developing new products in your institution and how often will the Product Development team follow them? (Please tick all appropriate answers)

		Never	Seldom	Occasionally	Often	Always
a.	Market research					
b.	Brain storming exercise to generate new products ideas					
c.	Formal ideas screening process					
d.	Preparing a Concept Paper for the new product					
e.	Approval of Concept Paper by the Shariah Board/Committee					
f.	Preparing a detailed Product Definition Paper (business case/ financial modelling)					
g.	Approval of the Product Definition Paper from the relevant committee					
h.	Review of the product documentation to ensure compliance with AAOIFI rules?					

i. Obtaining Shariah Supervisory Board/Committee approval (for all documents)

j. Development of IT system and operational processes/procedures

k. Product testing

l. Training of staff

m. Post launch review

n. Shariah audit of the product

Other, (please specify below)

28. When considering products for development, which of the following factors are given higher importance? (Please rank the options as 1,2,3,... according to importance, 1 being extremely important, 2 very important, 3 important, 4 less important and, 5 may be considered)

1 2 3 4 5

a. Financial consideration (potential turnover, profit, revenue, etc.).

b. Market considerations (consumers' needs and demands etc.).

c. Competition in the market.

d. Fit with corporate strategy and plan.

e. Fit with the objectives of Shariah (Maqasid Al-Shariah).

f. Resource availability (human skills, budget, system capability, etc.).

29. What are the main components of the new Product Definition Paper? (Please tick all appropriate boxes)

- Market research (products on offer, pricing, products specifications etc.)
- Consumer analysis and market segmentation
- Explanation on how the new product will fulfil consumer's needs and demands
- Documentation describing product nature, benefits & features
- Identifying the main objectives of the new product
- Identifying the appropriate Shariah structure, (e.g. Mudaraba, Murabaha, Musharakah, etc.)
- Explaining the potential contribution of the new product in achieving the business objectives
- Customer and business risk analysis
- Operational impact analysis
- Legal & regulatory requirements

☐ Other, (please specify below)

30. On what basis does the institution decide on the most appropriate Shariah structure for the new product? (Please tick the most appropriate option)

○ a- The structure that provides the most protection to the institution

○ b- The structure that provides most protection to the customer

○ c- The same structure as most other institutions in the market

○ d- The structure that provides the best fit from a Shariah perspective

○ e- The structure that brings in the highest yield compared to its cost

○ f- A combination of the above,

Other, (please specify below)

F. NEW PRODUCTS

31. Which of the following authorities assess and provide approvals for new products, from a Shariah compliance perspective? (Please tick all appropriate boxes)

☐ The institution's own Shariah Supervisory Board/Committee

☐ Central national Shariah Authority/Board/Council

☐ Central bank Shariah Supervisory Committee

☐ Other, (please specify below)

32. Post launch review: What types of review does the institution usually undertake after the launch of the new product? (Please tick all appropriate boxes)

☐ Review of product profitability

☐ Review of sales target

- [ ] Review of pricing
- [ ] Review of policies and procedures
- [ ] Review of Shariah compliance
- [ ] Review of defects in the product’s ability to meet consumer needs

Thank you for taking the time to complete this questionnaire. Your assistance in providing this information is very much appreciated. If there is anything else you would like to tell us about this survey or other comments, please provide any other insights which you think are relevant in the space provided below.

Appendix 5: Interviews Main Questions and Expected Outcomes

What the researcher needs from the Islamic banking practitioners is:

1. To learn more about the financial products they develop and offer in the market.
2. To assess their knowledge about the Islamic ethics and principles that should be followed in the development of financial products.
3. To discover their strategy in relation to financial innovation and financial engineering.
4. To find out if they follow a clear framework for financial product development that fulfils the requirements of the Islamic ethical code and Shariah objectives and principles.

The responses to the above questions are critical to this research study and the Islamic banks' practitioners who are better positioned to give the right answers to these questions.

The second group which I will be interviewing is academics in the field of Islamic finance and the religious scholars who issue Shariah legal opinions about the compliance of financial products being developed under their supervision. The desired outcome from this interview is as follows:

1. To learn about what they think about product development in Islamic finance and banking so far.
2. To find out what they think about the current products offered by Islamic banks and if these products fulfil the ethical and Shariah requirements.
3. To establish what Islamic banks should do to serve the real economy and provide the example of a responsible and ethical financial system.
4. To find out if they think it is necessary to establish a framework for the financial innovation and engineering process to ensure all developed products are in line with the Shariah ethical

framework and what the main characteristics of this standard framework are for product development.

5. To know their views on whether an Islamic economic and financial system exists and learn more about the philosophy of Islamic economics.

6. To discuss in-depth, the theory of financial innovation in Islam and its constraints in contrast with the conventional theory.

7. To identify the Shariah instruments for innovating and engineering new financial products in order to be compatible with the requirements of the financial market and develop further.