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ISLAMIC FINANCIAL ENGINEERING A Critical Investigation into Product Development Process in the Islamic Financial Industry

by Shaher Abbas

This Thesis is Submitted in Fulfilment of the Requirements for the Degree of Doctor of Philosophy at Durham University

Durham University Business School

2015

بسم الله الرحمن الرحيم

IN THE NAME OF ALLAH THE MOST COMPASSIONATE AND MOST MERCIFUL

Islamic Financial Engineering: A Critical Investigation into Product Development Process in the Islamic Finance Industry by Shaher Abbas

Abstract

In the wake of the recurring financial crises, it is now evident that financial engineering and product development can play a crucial role in either improving the efficacy of the financial markets or bringing devastating consequences, as was the case in the 2008 financial crisis. Although Islamic financial institutions managed to escape the direct impact of the crisis, the role of product development in Islamic finance can be critical in determining the future of the rapidly growing industry.

The general perception in the market is that current Islamic financial products are mere imitations of their conventional counterparts, and therefore, they have failed, so far, to bring the socio-economic impact expected from implementing the rules of *Shari'ah* in the financial industry. Hence, there is a real need to create a new generation of Islamic financial products that contributes positively to achieving *maqasid al-Shari'ah* or 'the objective of *Shari'ah*'.

This research, hence, aims at critically exploring the current practices of product development and financial engineering in Islamic financial institutions, and establishing the methodology and principles for engineering efficient and *Shari'ah*-based financial products. One of the main objectives of this research is to propose a refined product development process that can lead to the creation of a new generation of Islamic financial products that meet not only the form of *Shari'ah* contracts but also the substance of *maqasid al-Shari'ah*. This research uses both questionnaire survey technique, as a quantitative method, with a sample of 45 respondents, and semi-structured interviews, as a qualitative method, where 12 interviews were conducted with different stakeholders in the industry.

The main findings of this research indicate that the majority of Islamic financial institutions are committed to create innovative products and adopt a strategy to develop new products, but fail to transform the strategy into operational plans. The results also demonstrate that the main source of ideas for new products is other Islamic financial institutions, which is in contrast to the general belief that conventional financial products are the main source. The analysis of the primary data also shows that the majority of institutions showed commitment to complete the *Shari'ah*-related stages of the product development process, but they demonstrated lack of discipline in implementing the remaining steps of the process. While compliance with *Shari'ah* seems to be one of the top priorities in product development, there is very little focus on achieving *maqasid al-Shari'ah* which might explain why many perceive Islamic financial products to be *Shari'ah*-compliant rather than *Shari'ah*-based.

The inferential analysis against the independent variables returned a considerable number of differences in opinions among the respondents, the majority of which were related to the institutions' age, location and nature of activities. Most of the differences in relation to age, were related to older institutions, while the US and Africa reported most of the differences related to location. On the other hand, *takaful* companies reported most of the differences related to the nature of activities.

DECLARATION

None of the material contained in this thesis has previously been submitted for a degree in the University of Durham or any other university. None of the material contained in this thesis is based on joint research. The content of this thesis consists of the author's original individual contribution with appropriate recognition of any references being indicated throughout.

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LIST OF ABBREVIATIONS

:	Accounting & Auditing Organisation for Islamic Financial Institutions		
:	Asset and Liability Committee		
:	British Broadcasting Corporation		
:	Central Bank of Bahrain		
:	Board of Directors		
:	Collateralised Debt Obligations		
:	Credit Default Swaps		
:	Chief Executive Officer		
:	Chief Risk Officer		
:	Gulf Cooperation Council		
:	Financial Product Development Centre		
:	Financial Service Authority (Former UK financial regulator)		
:	Gross Domestic Product		
:	Islamic Financial Services Board		
:	International Islamic Financial Market		
:	International Monetary Fund		
:	Research and Development		
:	Kaiser-Meyer-Olkin Measure of Sampling Adequacy		
:	Kingdome of Saudi Arabia		
:	Kruskal-Wallis Test		
:	Over The Counter		
:	Shari'ah Governance Framework		
:	Statistical Package for Social Science		
:	Shari'ah Advisory Board		
:	Shari'ah Supervisory Board		
:	Shari'ah Supervisory Committee		
:	United Arab Emirates		
:	United Kingdom		
:	United States of America		

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GLOSSARY OF ARABIC TERMS

ʻaqd	Legal contract
'aql	Mind / Intellect
bai alinah	A contract involving the sale and buy-back of the same asset by a
	seller. The seller sells the asset to the buyer on a cash basis and
	later buys it back on a deferred payment basis where the price is
	higher than the cash price.
dar' al mafasid	Rejection of what is evil and harmful
daruriyyah	Essential
din	Religion / Faith
falah	Salvation process
fatwa	An authoritative legal opinion based on the Shari'ah.
fiah	Islamic jurisprudence. It is also considered as the jurists'
5 1	understanding of Shari'ah
fiqh al-ibadat	Jurisprudence of ritual worship
figh al-mumalat	Jurisprudence of civil transactions
figh al-mumalat al-	Jurisprudence of financial transactions
maliah	
gharar	Uncertainty in a contract leading to ambiguity in the terms of a
	contract
gharar fahish	Excessive uncertainty
hadith	The sayings of the Prophet Muhammad
hajiyyah	Complementary
haram	Unlawful
hiba	Gift
hijri	The Islamic calendar system
ijarah	Lease contract
Jima	General consensus
ijtihad	Interpretation
istihsan	Juristic preference
istishab	Presumption of continuity
istisna'	A contract of sale of specified items to be manufactured or
	constructed
jalb al-masalih	Acquisition of what is good and beneficial
kafalah	Personal guarantee
khiyar	Option or right
khiyar-e-aib	Option of defect
khiyar-e-ghaban	Option of price
khiyar-e-roiyya	Option of inspecting goods
khiyar-e-shart	Optional condition
khiyar-e-wasf	Option of quality
<i>mafsadah</i> (plural:	The avoidance of some mischief
mafasid)	
mal	Wealth / Property
maslahah (plural:	Anything that brings a benefit, contributes to the public good or
masalih)	prevents harm or corruption
magsad (plural:	The objective(s)
maqasid)	
maqasid al-Shari'ah	The objectives of Shari'ah
mudarabah	Entrepreneurship agreement with one party providing the capital
	and the other party providing skills and experience
murabahah	Cost plus sale transaction

musawamah	Bargaining sale transaction	
musharakah	Partnership agreement	
nafs	Human self / Life	
nasl	Offspring / Lineage	
qard hassan	Benevolent loan	
qimar	Gambling	
qiyas	Analogical reasoning	
Qur'an	The sacred (holy) book of Islam. Muslims believe the Qur'an is	
	God's final message to all of mankind	
rahn	Charge over assets (or mortgage)	
riba	Interest or usury	
salam	A sale contract with spot payment of price and deferred delivery of	
	goods	
sarf	Currency exchange	
Shari'ah	The Islamic law	
sukuk	Islamic bonds	
sunnah	The way Prophet Muhammad led his life including his acts and	
	sayings	
tadawul	Exchange or transfer of wealth from one party to another through	
	lawful transactions	
tahsiniyyah	Desirable	
takaful	Islamic insurance	
tawarruq	A process for liquidating an asset, currently used by Islamic	
	financial institutions to advance cash (in a way similar to loans) to	
	Islamic finance customers	
usul	Principles and usul al-fiqh is the principles of Islamic	
	jurisprudence	
wa'd	Unilateral promise	
wakalah	Agency contract	

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Shaher Abbas 15th July 2015

CHAPTER 1

INTRODUCTION

1.1 RESEARCH BACKGROUND

Financial engineering and new product development have played a significant role in shaping today's global financial system. The objective of using financial engineering is to enrich the economy through the development of new financial instruments that can increase the efficiency of the financial system by reducing transactional costs, increasing liquidity in the market and enhancing financial accessibility. Hence, the design, the features and the risk profile of the newly engineered product determine whether the product benefits the market and all of the relevant stakeholders or it benefits one party only at the expense of the other stakeholders. It is evident now that the inappropriate (or relentless) use of financial engineering has the potential to lead to devastating consequences on the economy, as was the case in the 2008 financial crisis (Carmassi *et al*, 2009). Therefore, the use of financial engineering has to be controlled using suitable guidelines and principles to ensure that the outcome of the financial engineering process and product development achieves the required objectives.

Although the effects of the 2008 financial crisis spread to most types of financial markets in almost all countries around the world, Islamic financial institutions were among the few that managed to escape the direct impact of the crisis and were more resilient to its effect than the conventional financial institutions (IFSB, 2010). The main reason behind this can be attributed to the fact that Islamic financial institutions are required to follow the stringent *Shari'ah* rules in their transactions and operations, which emphasise, among other features, the prohibition of interest (*riba*), uncertainty (*gharar*), excessive risk-taking and carrying out transactions for the mere purpose of speculation. All of these prohibited elements under the Islamic finance rules were present, in one way or another, as factors behind the main reasons that led to the 2008 financial crisis.



Based on the above argument, financial engineering and product development in the Islamic financial industry have to follow a particular process to ensure that the final product complies with Shari'ah requirements. However, many researchers including Ahmed (2011) and Alasrag (2010) argue that the strategies used by Islamic financial institutions to develop new products and create new financial instruments have focused, since the early stages of the industry, on replicating the economic effects of existing conventional products, where Shari'ah compliance status is then achieved by ensuring that the legal contracts used for the new Islamic financial products do not have any of the elements prohibited by Shari'ah. This process, as many believe including Al-Suwailem (2006), has led to the creation of Islamic financial products that look and feel the same as other conventional financial products and while they do meet the Shari'ah requirements, their compliance, in most cases, is to the form of Shari'ah only and not the substance, in the sense that they are not considered to be delivering the outcome that are expected from being compliant with the values of Shari'ah. Hence, as opposed to the expectations, Islamic financial institutions have not created the positive impact on the socioeconomics of the societies until now.

As the size and depth of the Islamic financial industry expands, the need for more sophisticated and innovative products is also increasing. Therefore, the role that Islamic financial engineering and product development can play at this critical stage will be essential to take the industry to the next level and to ensure its continuous growth.

In order to meet the challenges facing the industry, Islamic financial institutions need to improve their strategies and processes pertaining to product development to ensure that the outcome of the process fulfils the substance of *Shari'ah*. In other words, as Kahf (2006) and Siddiqi (2006) among others argue, newly developed financial products and instruments have to contribute positively to achieving the objectives of *Shari'ah*, or *maqasid al-Shari'ah*, which entails many factors including, among others, that the product should fulfil a real need, allocate the risks and rewards among the involved parties in a manner that is mutually beneficial, enhance the efficiency of the market, not to cause hardship, create ease for the user and safeguard the well-being of the individuals as well as the society at large, as indicated by Islamic moral economy.



1.2 RESEARCH PROBLEM AND MOTIVATION

The Islamic financial industry has a great potential to grow further and become a real alternative to the conventional, interest-based system. However, in order to achieve the required growth in the right direction, the processes of financial engineering and product development need to be improved in order to design a second generation of Islamic financial products that are substantially different from their conventional counterparts, enhance the efficiency of the Islamic financial sector and facilitate the growth of the industry. Achieving this objective requires a significant amount of research in different disciplines of the Islamic economy domain and collaborative efforts from academics, *Shari'ah* scholars, practitioners and all relevant stakeholders in the fields of product development, financial engineering and risk management.

However, the survey and the review of literature in the area of Islamic financial engineering and product development indicate a serious lack of research in this crucial area. This view is also confirmed by Ahmed (2011:13) who explains the reason behind the lack of research as "being a relatively new industry and due to the uniqueness of the Islamic banking product, no in-depth study has been done on the process of product development for Islamic banks". Hence, the motivation behind this research is to enrich the scholarly work in this field by highlighting the importance of the product development function as a critical factor in driving the growth of the Islamic financial industry in the right direction. It is, thus, expected that this research can contribute systematically to fill this observed gap.

1.3 AIMS, OBJECTIVES AND RESEARCH QUESTIONS

The current perception in the Islamic financial industry is that product development and financial engineering processes implemented by the Islamic financial institutions are, so far, used only to replicate the products offered by the conventional financial institutions. The essence of these conventional products is then reintroduced in a *Shari'ah* compliant framework to achieve *Shari'ah* compliant financial products.



This view is supported by many researchers including, among others, Alasrag (2010:4), who argues that *Shari'ah* compliance is achieved by modifying the conventional financial practices and their legal agreements to comply with *Shari'ah* requirements. However, the effective implementation of Islamic financial operations requires much more than just refraining from charging interest and conforming to *Shari'ah* contractual requirements. The operation of the Islamic financial institutions and the products they offer are expected to contribute to the improvement of the well-being of the people as well as the creation of a just society.

Based on the above rational, this research aims at conducting a critical exploration on the current practices of product development and financial engineering in Islamic financial institutions, and establishing the methodology and principles for engineering efficient and *Shari'ah*-based financial products that meet not only the form of *Shari'ah* contracts but also the substance of *maqasid al-Shari'ah*.

In line with the identified aims, the following objectives are developed:

- to develop an advanced theoretical understanding of product development process by examining the available literature;
- (ii) to develop an advanced understanding of the consequences of the financial crisis on product development practices;
- (iii) to collect the required primary data through a questionnaire and an interview schedule in order to explore the current product development processes and practices in Islamic financial institutions through the perceptions of various stakeholders;
- (iv) to conduct a critical analysis of the identified product development process in Islamic financial institutions;
- (v) to identify the key sources of ideas driving product development in Islamic financial institutions;
- (vi) to explore the salient underlying features of product development in Islamic finance, in particular *maqasid al-Shari'ah* related conditions and consequences;
- (vii) to develop a particular methodology to integrate *maqasid al-Shari'ah* into the product development process for Islamic financial institutions;



- (viii) to refine the product development process to enable Islamic financial institutions to develop the second generation of Islamic financial products needed to ensure the continuous growth of the industry;
- (ix) to identify the main difficulties facing the process of developing new Islamic financial products.

The objectives of the research will be achieved by answering the following principal questions:

(i) What are the current practices used to develop Islamic financial products?

Answering this question will help in achieving objectives (i), (iii) and (iv);

(ii) Can product development and financial engineering be one of the main reasons behind the 2008 financial crisis?

Answering this question will help in achieving objective (ii);

(iii) What are the key sources of ideas used for developing new Islamic financial products?

Answering this question will help in achieving objective (v);

(iv) Have the methodology and strategies used to develop new Islamic financial products enabled these products to meet the objectives of *Shari'ah* and the needs of Muslim customers? Or have they led to the creation of products that are mere imitations of conventional products?

Answering this question will help in achieving objective (vi) and (vii);

(v) Can a refined product development process help Islamic financial institutions in creating better Islamic financial products?

Answering this question will help in achieving objective (viii);

(vi) What are the main difficulties facing the process of developing new Islamic financial products?

Answering this question will help in achieving objective (ix).



The research questions are answered using a structured approach, where the parameters of the research questions are established by transforming the research questions into a set of hypotheses, based on the main findings of the literature review, which are presented in the Research Methodology chapter.

Table 1.1 provides an overview of the research questions and where these questions are fulfilled in this study.

Research Question	Relevant Chapter
1. What are the current practices used to develop Islamic financial products?	This question is fulfilled in Chapter 2 through the literature review, Chapters 6, 7 and 8 through the descriptive and inferential analysis of the survey results, and Chapter 9 where the findings are discussed.
2. Can product development and financial engineering be one of the main reasons behind the 2008 financial crisis?	This question is fulfilled in Chapter 3.
3. What are the key sources of ideas used for developing new Islamic financial products?	This question is fulfilled in Chapter 2 through the literature review, Chapter 8 through the descriptive analysis of the survey results, and Chapter 9 where the findings are discussed.
4. Have the methodology and strategies used to develop new Islamic financial products enabled these products to meet the objectives of <i>Shari'ah</i> and the needs of Muslim customers? Or have they led to the creation of products that are mere imitations of conventional products?	This question is fulfilled in Chapter 2 through the literature review, Chapter 4 through the understanding of <i>maqasid al-Shariah</i> , Chapter 8 through the descriptive and inferential analysis of the survey results and Chapter 9 where the findings are discussed.
5. Can a refined product development process help Islamic financial institutions in creating better Islamic financial products?	This question is fulfilled in Chapter 2 through the literature review, Chapter 4 through the understanding of <i>maqasid al-Shariah</i> , Chapters 7 and 8 through the descriptive and inferential analysis of the survey results, in Chapter 9 where the findings are discussed and Chapter 10 where a refined product development process is proposed.
6. What are the main difficulties facing the process of developing new Islamic financial products?	This question is fulfilled in in Chapter 2 through the literature review, Chapter 8 through the descriptive and inferential analysis of the survey results, and in Chapter 9 where the findings are discussed.

 Table 1.1: Research Questions and Their Fulfilment



1.4 SIGNIFICANCE OF THE RESEARCH

The Islamic financial industry is at a critical stage of its development. While it has been growing steadily over the years, the continuation of this growth is becoming more challenging as the industry moves towards maturity.

Innovation and new product development play an important role in driving the growth of any industry. This is specifically applicable to the Islamic finance industry, due to, first of all, being a relatively young industry, secondly, and more importantly, due to the additional requirements that Islamic financial products have to comply with in order to be *Shari'ah* compliant, and thirdly, due to the general perception in the market that the industry is not demonstrating creativity in its approach towards product development, resulting in most products being very similar to those offered by the conventional financial industry.

Hence, what the industry really needs at this stage is to setup specific guidelines, enhance the methodology and refine the design of the product development process used by Islamic financial institutions to ensure that the second generation of Islamic financial products needed to take the industry to the next level can be created. While there is a huge amount of commitment and enthusiasm form all stakeholders in the industry to facilitate the growth of the industry, there is an evident lack of research in the critical area of product development and Islamic financial engineering.

Furthermore, the majority of existing literature focuses on the theoretical side of product development and how to apply the Islamic theology into the Islamic financial contracts, and very little research has actually attempted to tackle the issue from a technical point of view to explain the process of product development.

It is in this context that this research can add real value to the existing body of knowledge as it attempts to examine and explore the existing practices, in order to identify potential areas for improvement and take a further step, from pervious researches, by providing guidelines on how to integrate the requirements of *maqasid al-Shari'ah* into the Islamic financial product development process.



1.5 OVERVIEW OF THE RESEARCH METHODOLOGY

In order to achieve the aforementioned aims and objectives and answer the research questions, this research adopts a qualitative research methodology that defines the main research frame and process. An inductive strategy is followed with mixed design approach of both exploratory and descriptive tools to examine and explore the current practices in the market by generating the appropriate hypotheses and test them against the collected data to identify whether there are any significant differences in the practices of Islamic financial institutions represented in the sample in relation to product development. In collecting and analysing the data, a mixed method is utilised in the form of questionnaire survey technique, as a quantitative method, and semi-structured interviews, as a qualitative method.

The survey questionnaire includes 42 questions that are divided over three main parts. The first part of the questionnaire is used to define the characteristics of the respondents and their institutions by focusing on the institution's location, size, age, nature of activity and the respondent's position. The second part focuses on the strategy, plans and organisational structure of the institution in relation to the product development function. The third and last part focuses on identifying the product development process design, stages and steps as implemented by the institutions represented in the sample. The questionnaire survey was distributed to 127 different Islamic financial institutions worldwide with the objective of achieving an acceptable response rate. A total of 49 responses were received of which 45 were considered valid and the remaining 4 were disqualified, resulting in a valid response rate of 35%. Taking into account the difficulties in reaching out to the target sample, the above response rate can be considered, for the purpose of this research, a good representation of the Islamic financial institutions' universe. The survey questionnaire can be found in Appendix 1.

The semi-structured interviews themes and questions are designed within the context of the main research questions. The primary data collected through semi-structured interviews is summarised, analysed and used, when possible, as part of the discussion to substantiate and to compare and contrast the findings of the quantitative data with the qualitative results analysis.



The researcher conducted 12 interviews with different stakeholders of the Islamic financial industry including professionals, practitioners, *Shari'ah* scholars and academics. The details of the participating interviewees can be found in Appendix 2.

1.6 OVERVIEW OF THE RESEARCH

This research has ten chapters that can be broadly divided into two main sections. The first section covers the foundational chapters and these include Chapter 1 to Chapter 5, whereas, the second section includes Chapter 6 to Chapter 10 and covers the empirical chapters and the Conclusion. The overview of these chapters is as follows:

Chapter One (Introduction) explains the research background, identifies the research problem and the motivation behind conducting this research. It also identifies the aims, objectives and the main research questions that the research intends to answer. Furthermore, it provides an overview of the research methodology used and the significance of this research.

Chapter Two (Financial Engineering and Product Development: An Islamic Financial Perspective) presents the findings of the literature review on the relevant areas of product development and financial engineering. It attempts to provide a holistic approach by covering three main sections. The first section explains the concept of *Shari'ah* and the main prohibitions that distinguish Islamic finance from its conventional counterpart. It also identifies the main segments of the industry and how it is different from conventional financial industry.

The second section of chapter two focuses on the product life cycle, the critical success factors and the different product strategies pertaining to product development. It also explores the product development process in general and then in relation to Islamic financial products.

The third section discusses the concept of financial engineering in terms of history, definition and objectives. The relation between financial engineering and financial stability is then discussed briefly, followed by a detailed description of the financial engineering process in general, whereas principles of Islamic financial engineering are discussed in the last part of section three.



Chapter Three (The Financial Crisis and Financial Engineering) attempts to inspect and analyse the reasons and factors that play a role in the creation of financial crises. It also examines the 2008 financial crisis as a case study to determine the main factors behind it, including the role that financial engineering played in the development of the crisis. Furthermore, it provides an analysis of the crisis from an Islamic perspective. Finally, the chapter focuses on the approach that could possibly be the solution to eliminate, or at least reduce the frequency and scale of, future financial crises.

Chapter Four (Maqasid Al-Shari'ah and Financial Engineering) provides an insight on the concepts of *maqasid al-Shari'ah* and *maslahah* with an overview of the history and the development of the concept and theory behind it. The different classification of *maqasid* is also discussed together with the roles that *maqasid* can play in safeguarding the economy and developing the Islamic financial industry, specifically in relation to improving the processes related to financial engineering and product development.

Chapter Five (Research Methodology) describes the research process adopted for this study. It determines the main hypotheses of the research that are based on the research questions. It explores the different research methodologies, strategies and designs used in similar researches and the basis for selecting the optimal ones that will serve the objectives and aims of this research. It proceeds to describe the research methods used and how the data is collected, verified and analysed. Finally, the chapter elaborates on some limitations and difficulties encountered while carrying out the research.

Chapter Six (Analysing the Characteristics of the Respondents and their Institutions: Descriptive Data Analysis) presents the outcome of the descriptive analysis of the first part of the questionnaire, consisting of 11 questions, in respect of the characteristics of the respondents and their institutions by analysing the primary quantitative data generated from the first part of the questionnaire. The chapter presents the findings about the different characteristics of the respondents' institutions in an attempt to identify any existing patterns and similarities among the sample. The analysis is done using different types of statistics including frequency distribution, mean and standard deviation which are calculated using the SPSS statistical package.



Chapter Seven (Exploring Strategies, Plans, Structures and Resources Available for Product Development Process: Descriptive and Inferential Data Analysis) furnishes the results of both descriptive and inferential analysis pertaining to the data collected under the second part of the questionnaire, consisting of 12 questions. The descriptive analysis is used to build an understanding of the current product development process implemented by the institutions in the sample by focusing on strategies, plans, structure and resources, while inferential analysis is used to identify whether there are any significant differences in the way the participants' institutions manage product development, measured against the institution's location, size, age, nature of activities and the respondent's position as independent variables. Furthermore, factor analysis is also employed to give further meaning to the selected data.

Chapter Eight (Investigating Product Development Process, Documentation, Implementation and Difficulties Faced by Islamic Financial Institutions) is a continuation to the previous two chapters, providing statistical analysis on the third part of the questionnaire, which consists of 19 questions, that focus on investigating the product development documentation, process design and steps used by the institutions in the sample, to develop, launch and review their new products. The chapter also attempts to identify the main challenges, barriers and risks faced by the institutions in the sample, in relation to new product development. Chapter 8 is divided into two parts, the first part uses descriptive analysis tools, while the second part utilises inferential statistics tests. At the end of the chapter, the findings are summarised with concluding remarks about the main descriptive and inferential findings related to the third part of the questionnaire.

Chapter Nine (Contextualisation and Discussion: An Interpretive Approach) aims to explore, integrate and discuss the findings from both research instruments used in this study, namely, the survey questionnaire and the semi-structured interviews. The research hypotheses are tested against the data analysis results to develop a deeper understanding of the current practices related to product development and to discuss any differences that exist among Islamic financial institutions. The finding from the discussion for each hypothesis is compared, when possible, with previous research conducted on the same subject.



Chapter Ten (Proposing an Efficient and Maqasid Based Islamic Finance Product Development Process, Conclusion and Recommendations) reflects on the main findings of the research and the discussion, proposes a refined product development process and suggests a methodology to integrate the requirements of maqasid al-Shari'ah into a refined product development process with the objective of improving the process to enable the creation of the Shari'ah-based products that the industry aspires for. At the end, the chapter is concluded with a set of recommendations based on the findings of the research.



CHAPTER 2

FINANCIAL ENGINEERING AND PRODUCT DEVELOPMENT: AN ISLAMIC FINANCIAL PERSPECTIVE

2.1 INTRODUCTION

The continuous growth of the Islamic finance industry over the last few decades has been supported by substantial increase in the range of products offered by Islamic financial institutions. As the size and depth of the industry increases, the need for more sophisticated products is also increasing.

Islamic financial products have to adhere to *Shari'ah* (the Islamic Law) rules. This additional layer of requirements, compared to conventional financial products, make the process of developing Islamic financial products more complicated. Hence, there is a need to establish a framework that sets out the guidelines and principles for engineering sophisticated Islamic financial products and design a flexible and efficient product development process that can facilitate the development of *Shari'ah* compliant products. To this end, an investigation of the available literature on product development and financial engineering is required.

This chapter provides the literature review on the relevant areas of product development and financial engineering. However, in order to provide a complete picture on the research subject, it is important to lay out the basic information on the Islamic finance industry. Therefore, the first section of this chapter explains the concept of *Shari'ah* and the main prohibitions that distinguish the Islamic finance. It also covers the main segments of the industry and how it is different from conventional finance.

In the second section of this chapter the product life cycle is discussed alongside the critical success factors related to product development. Product strategy, process of



innovation and strategic planning are also discussed. This is followed by a critical investigation in the product development process in general and then in relation to Islamic financial products.

The third section of this chapter starts by discussing the history, the drivers and the objectives of financial engineering. The relation between financial engineering and financial stability is then discussed briefly, followed by detailed description of the financial engineering process in general, whereas principles of Islamic financial engineering are discussed in the last part of section three. At the end of the chapter a conclusion is provided to summarise the main findings.

It should be noted, that while this is a foundational chapter that aims at reviewing the existing literature, the lack of available material on Islamic financial products development has had an impact on the depth of the literature review; hence, the researcher has reflected upon his own experience in detailing the chapter and contributing to various sections within this study. The researcher's contribution is hoped to expand the knowledge base of the subject matter.

2.2 INTRODUCTION TO ISLAMIC FINANCE

Although *Shari'ah* rules and underlying principles on which Islamic finance is based have existed since the days of the Prophet Muhammad, more than 1400 years ago, the Islamic finance industry, as we know it today, is relatively young with the institutionalization of Islamic financing taking place in the 1970s when a global network of Islamic banks started to emerge.

Islamic finance, hence, refers to all types of the financial intermediation activities that operate in accordance with the rules and principles of the Islamic law (*Shari'ah*). Therefore, in addition to complying with the finance industry's regulatory requirements, Islamic financial institutions need to ensure that all their products, services and activities are compliant with *Shari'ah*. Usmani (2010:34) asserts that:

In order to be compliant with *Shari'ah* Islamic law [Islamic financial institutions] are bound to remain at distance from interest, derivatives, short sales and sale of debt. Their debt instruments are also based on selling and leasing real commodities or properties and therefore all their financing is backed by real assets which does not create mismatch between financial transactions and the real economy.



Hence, *Shari'ah* compliant financing aims at having financial product and transactions that adhere to *Shari'ah* rules and principles (Alasrag, 2010:4). A dedicated panel of *Shari'ah* scholars supervises the financial institution's activities, products and services and issues the relevant *Shari'ah* rulings (*fatwa*) as to the compliance of such products, services and activities with *Shari'ah*, which in Islamic banks and financial institutions, is usually called the *Shari'ah* Supervisory Board (SSB), *Shari'ah* Supervisory Committee (SSC) or *Shari'ah* Advisory Board (SAB).

2.2.1 Shari'ah Rules and Principles

Shari'ah provides a governing framework that covers all parts of Muslims lives, including, among others, spiritual, social, intellectual, political and financial aspects. *Shari'ah* rules and principles are derived from the *Qur'an* (the holy book of Islam), and *Sunnah* (the way Prophet Muhammad led his life), including *hadith* (the sayings of the Prophet). Abdelaal (2012: 156) state that "Islamic law knows four sources that count as primary sources and two secondary sources. Among the four primary sources, two are textual sources: the *Qur'an* and the *Sunnah*". Based on these two sources, Muslim scholars developed the tools of Islamic jurisprudence expressed through different processes including *ijtihad* (interpretation), *qiyas* (analogical reasoning) and *ijma* (general consensus).

In respect of financial transactions, *Shari'ah* rules are based on the belief that all wealth belongs to God and human beings are only a trustee of this wealth, accordingly Islam stipulates that there should be a just distribution of such wealth. As argued by Usmani (2010:2), "wealth produced in the society must be distributed in just and fair manner so that it may not be concentrated in the hands of a few". In evidencing this, the *Qur'anic* verse (59:7) states that "so that it may not circulate only between the rich among you".¹ As such, Islamic normative principles aims to promote ethical transactions encouraging trade, labour, entrepreneurship, transparency, honesty, righteousness, integrity and fairness, which also inspires kindness, charitable donations and social welfare. Therefore, *Shari'ah* principles prohibit *riba* (interest), *gharar* (uncertainty), *qimar* (gambling), undertaking *haram* (unlawful) activities

¹ Translation by Taqi Usmani (2006), The Meaning of the Noble Quran, p.p.1034, published by Maktaba Ma'ariful Quran.



(such as dealing in alcohol, pork, pornography *etc.*), misrepresentation, exploitation and unfairness.

The prohibition of *riba*, *gharar* and *qimar* are the most significant restrictions among the various *Shari'ah* rules in relation to Islamic finance. However, among others, Obaidullah (2005) and Usmani (2010) argue that Islamic law tolerates a limited *gharar* (as long as it causes no harm) and that the prohibited *gharar* is the one that involves excessive uncertainty '*gharar fahish*'. In addition to the above prohibitions, transactions with excessive speculative nature, as currently practiced by conventional financial institutions, are also prohibited. Obaidullah (2005:12) argues that Islamic institutions are required to assume risks after making a proper assessment of such risks. While all business decisions involve some kind of speculation, it is only when the absence of relevant information leads to excessive uncertainty, thus speculation becomes analogous to a game of chance and hence, forbidden.

2.2.2 Prohibition of *Riba*

Islam, consider money as a 'medium of exchange' not a 'commodity' as money has no intrinsic utility because it cannot be used to directly fulfil human needs, but rather used to purchase or acquire items that do so. Alasrag (2010:4) states that "money, according to Islamic teachings is a measure of value, not a commodity". Based on that, money cannot be used as a subject matter of a trade, and definitely cannot be sold for higher, or less, than its face value. When money is used to generate money, as in the case of extending credit for a certain period of time in return for additional amount of money, this increment is considered *riba*.

The effects of the current interest based financial system implemented worldwide suggest that implication of *riba* go beyond the individual level to affect the society as well. Transactions based on *riba* bring injustice to the borrower, encourages concentration of wealth in the hands of the few, increases economic disparity between the rich and the poor, and creates unequal relationship favouring the lender. It can be argued that *riba* can even create social unrest among the people, contrary to *Shari'ah* aims of creating peace and harmony in the society. Therefore, Arif *et al* (2012: 150) state that:



The distribution of wealth in a society becomes inequitable due to interest. Interest is an overhead charge which does not form part of any factor of production. Interest is received by the capitalist who continues to use his wealth to earn more wealth. Hence instead of circulating in the society, wealth is concentrated in the hand of the capitalist class. This causes an unjust distribution of wealth in the society. In this way, due mainly to interest, the rich in the society get richer and the poor, poorer.

2.2.3 Maqasid Al-Shari'ah

Maqasid al-Shari'ah, or *Shari'ah* objectives refer to the philosophy developed by *Shari'ah* scholars in their attempt to understand the wisdom behind a ruling. Most scholars agree that the main objective of the *Shari'ah* is to promote the well-being of all mankind and greater justice in human society. Ibn al-Qayyim (as cited by Auda, 2007: 20) states that "*Shari'ah* is based on wisdom and achieving people's welfare in this life and the afterlife. *Shari'ah* is all about justice, mercy, wisdom, and good". Consequently, Islamic financial transactions have to comply with *Shari'ah* requirements and the outcome of their products should contribute positively to achieving *maqasid al-Shari'ah*.

In the context of *maqasid al-Shari'ah*, there are five main elements that *Shari'ah* aims at protecting, as described by Laldin and Furqani (2012:9) namely "faith (*din*), life (nafs), intellect (*'aql*), lineage (*nasl*), and property (*mal*)". Preservation of these five elements was called *daruriyyah*, or essential *maqasid*, as these are seen as absolute requirements for the survival and spiritual well-being of individuals, because their absence would precipitate chaos and destruction of normal order in society.

Throughout the centuries, the science of *maqasid al-Shari'ah* evolved from a theory attempting to understand the wisdom behind a ruling to a comprehensive philosophy that encompasses the welfare of the entire humanity. Many eminent scholars contributed to the evolution of the science of *maqasid al-Shari'ah*, most significantly are the contributions of Al-Ghazzali and Al-Shatibi who are considered the founders of this science, and more recently, contemporary scholars such as Ibn Ashur and Al-Qaradawi, who have taken *maqasid* to their contemporary universal scope, transferring them "from 'protection' and 'preservation' to 'development' and 'rights'" (Auda, 2007:21).


Preservation of *mal* (wealth) is one of the essential *maqasid* identified by the scholars. Jasser (2010:6) argues that one of the most important objectives of *Shari'ah* in preserving wealth is '*tadawul'* (exchange or transfer of wealth from one party to another through lawful transactions), which can be achieved by reinforcing positive means such as investing wealth in legitimate transactions permitted under Islamic law, and prohibiting negative means such as hoarding, interest, gambling and holding the money in the hands of the few.

Looking at the prohibition of *riba* from *maqasid* perspective, it is clear that it falls under the umbrella of preservation of wealth. However, due to the sever implications of dealing in *riba*, which are against the objectives of *Shari'ah*, that *riba* is not only prohibited, but even condemned. Due to the importance of *maqasid al-Shari'ah* concept to the subject of this research, Chapter 4 has been dedicated to provide a comprehensive analysis of the concept and its role in shaping the process of financial engineering and developing Islamic financial products.

2.2.4 Types of Islamic Contracts

Shari'ah forbids paying or receiving interest; accordingly, money should be used to create real economic value where it may earn a return by having it invested in permissible commercial transactions and activities. Accordingly, Islamic law of contracts offers different types of *Shari'ah* compliant instruments to meet people's needs in various ways, and these instruments can be in the form of *wa'd* (unilateral promise) or *'aqd* (legal contract). *Wa'd* is a unilateral promise from one party in favour of the other to perform a certain action in the future. It can be binding or non-binding depending on the agreement between the parties, however, the binding promise is the one mostly used in the Islamic financial transactions. On the other hand, *'aqd* is a legal contract entered into either by one party (as in the case of *hiba* or gift contract) or by two parties (such as *murabahah*, *musharakah* and *wakalah*).

Murabahah, for example, is a sale contract that is widely used by Islamic financial institutions to provide different types of finance arrangements. Within a sale contract, *Shari'ah* grants the contracting parties the *khiyar* (option or right) to rescind a contract



of sale to either the buyer or the seller. Usmani (2002:77-78) specified five *khiyars* in a sale contract as follows:

- (i) *Khiyar-e-Shart* (optional condition): An option that allows the buyer or the seller to revoke the sale contract within a specified period of time;
- (ii) *Khiyar-e-Roiyya* (option of inspecting goods): This option provides the buyer with the right to return the purchased goods after inspecting them;
- (iii) *Khiyar-e-Aib* (option of defect): Under this option the buyer can return the goods if found defective;
- (iv) *Khiyar-e-Wasf* (option of quality): This option provides the buyer with the right to revoke the contract if a certain quality is not met by the goods;
- (v) *Khiyar-e-Ghaban* (option of price): This option is useful when the buyer does not know the actual value of the goods. Hence this option provides protection against the seller charging far higher prices than the market price.

Table 2.1 lists the most commonly used contracts by Islamic financial institutions, classified according to the nature of the contract.



Contract	Contract Definition		Application in the
Nature	Name	Definition	industry
	Musawamah (bargaining)	A sale contract where the ownership of a subject matter is transferred from the seller to the buyer in consideration of an agreed price.	Personal & Business Finance
	Murabahah (cost plus)	A sale contract whereby the seller discloses to the buyer both the cost of the subject matter and the profit margin realised by the seller through the sale transaction.	Trade finance, personal & business finance
Exchange/ sale	Salam (deferred delivery)	A sale contract involving spot payment of the sale price and deferred delivery of subject matter	Agriculture finance, trade finance, working capital finance
contracts	<i>Istisna'</i> (constructing or making)	A sale contract whereby the seller, based on the request of the buyer, makes, manufactures or constructs a subject matter according to agreed specifications to be delivered on future date.	Sukuk, property development finance, project finance, manufacturing finance
	Sarf (currency exchange)	A sale contract whereby the ownership of a currency of a certain type and amount is exchanged for a certain amount of a different currency.	Currency trading, currency exchange, currency transfer
Usufruct	<i>Ijarah</i> (lease)	A lease contract whereby the usufruct of a subject matter is let from the lessor to the lessee for an agreed period and consideration (rent).	Home finance, equipment finance, Sukuk
contracts	Qard Hassan (benevolent loan)	A loan contract involving the transfer of money from one person to another having the obligation to return the exact initial value taken at the end of the contract term.	Current accounts, credit cards
Partnership	Musharakah (partnership)	A profit and loss sharing contract whereby two or more partners contribute capital to setup a company / project with the intention of generating profit.	Sukuk, trade finance and property finance
contracts	<i>Mudarabah</i> (entrepreneur- ship)	A special type of partnership whereby one party provides the capital, while the other party provides the expertise.	Sukuk, investment funds and savings accounts
Services contracts	Wakalah (agency)	An agency contract whereby one party delegates to another party the responsibility to undertake a defined action on the former party's behalf, usually for an agreed fee.	Property and investment funds management, trade finance and treasury placements
Co our t	<i>Kafalah</i> (personal guarantee)	A contract granted by one party (guarantor) in favour of a creditor, guaranteeing the debt of a debtor.	Security of financial transactions
contracts	Rahn (Charge)	An agreement or contract under which an asset is charged in order to guarantee a debt in case of the debtor's failure or default in payment.	Security of financial transactions

 Table 2.1: Most Commonly Used Contracts in the Islamic Finance Industry



Despite the diversity of the Islamic contracts and their applications, *murabahah* contract seems to be the favourite amongst Islamic financial institutions, where "75 percent of Islamic financial transactions are cost-plus sales" (Alasrag, 2010:16).

This preference could be attributable to the simplicity of the contract where the cost price and the institution's profit are transparent and clear to the customer. However, it can be argued that the excessive use of *murabahah* is due to the resemblance between its contractual obligation and those of conventional loans. Hence most of Islamic financial institutions feel more comfortable dealing with *murabahah* compared to other profit and loss sharing types of contacts.

2.2.5 Components of the Islamic Financial Industry

Similar to the conventional financial system, the Islamic financial industry includes banks, investment companies, capital markets (*sukuk*), Islamic funds, and Islamic insurance (*takaful*) companies amongst others. Figure 2.1 illustrates the main components of the Islamic financial industry.



Figure 2.1: Components of the Islamic Financial Industry



2.2.6 Islamic Finance vs. Conventional Finance

The prohibition of *riba* and *gharar* in Islam has shaped the development of the Islamic financial industry in a distinctive way to become one of the fastest growing segments in the global financial system. The underlying operating model of Islamic finance is based on the principle of profit and loss sharing whereas conventional finance industry is based entirely on the concept of lending and charging of interest. Hanif (2011:166) states that "as the bank is dealer of money; and reward for using money is interest according to capitalist system; so the prime source of revenue and cost of funds to conventional banks is charging interest through lending and accepting deposits for interest respectively". Furthermore, it can also be argued that another significant difference is that Islamic finance is based on trading in actual assets and not in money or risks. This notion is asserted by Usmani (1998:12) who states that "unlike conventional financial institutions, financing in Islam is always based on illiquid assets which creates real assets and inventories". Table 2.2, hence, lists the major differences between Islamic finance and conventional finance.

 Table 2.2: Major Theoretical Differences between Islamic and Conventional

 Finance

	Conventional Finance		Islamic Finance				
1.	Conventional financial institutions' functions	1.	Islamic financial institutions' functions				
	and operating modes are fully based on man- made principles		and operating modes of are based on the principles of <i>Shari'ah</i>				
2.	Main objective is to maximise profit without any limitation	2.	Main objective is to achieve <i>maqasid al-</i> <i>Shari'ah</i> through maximization of profit from trading activities				
3.	There is no ethical objective or requirements to treat customers fairly	3.	Based on ethical principles with impeded requirements to treat all customers fairly				
4.	Income is based on charging interest on money lent to the investors	4.	Income is based on profit from trading activities and fees from services provided				
5.	Relationship between conventional financial institutions and their customers, is that of creditor and debtors	5.	Relationship between Islamic financial institutions and their customers is that of partners, investors, trader, buyer and seller				
6.	Risks are either sold, shifted to other parties or managed	6.	Risks are managed and shared between the involved parties				
7.	Credit-worthiness of the customers are given greater emphasis	7.	Islamic finance gives greater emphasis on the feasibility of the projects				
8.	Highly developed financial system and product market	8.	Developing financial system and product market				
9.	Subject to supervision from national authorities (regulatory framework)	9.	Subject to dual supervision from national regulatory authorities and <i>Shari'ah</i> scholars				

Note: Adopted partially from Abdul Wahab et al. (2014:23)



2.2.7 Governance in Islamic Financial Institutions

The governance framework in Islamic financial institutions is distinctively different from their conventional counterparts as the former are required to adhere to *Shari'ah* principles in addition to the usual national regulatory framework imposed by the governments. While the adherence to the regulatory requirements is supervised by national bodies, adherence to *Shari'ah* requirements is usually supervised by the institution's own *Shari'ah* Supervisory Board 'SSB'. However, in some countries like Malaysia and Sudan a central *Shari'ah* board structure at national level is used to provide some kind of supervision on *Shari'ah* related issues, (Ben Yousef, 2010:4). Hence Islamic financial institutions have a dual governance model, which is considered one of the distinctive features differentiating Islamic financial institutions from conventional ones. Figure 2.2 illustrates the dual governance model adopted by Islamic financial institutions.

Figure 2.2: Dual Governance Model in Islamic Financial Institutions





The Islamic financial institution's failure to adhere to *Shari'ah* principles and SSB guidance exposes the institution to *Shari'ah* non-compliance risk that can be manifested into significant reputational and financial risks which may potentially jeopardise the operation of the institution. Both the probability and the impact of this additional risk can be high; therefore, it needs to be carefully managed. One of the important responsibilities of the management in Islamic financial institutions is to handle and mitigate this specific risk appropriately.

The Central Bank of Bahrain 'CBB' (2015) refers to *Shari'ah* non-compliance risk in the Islamic banking regulation as the risk that arises from Islamic bank licensees' failure to comply with the *Shari'ah* rules and principles determined by the *Shari'ah* Board of the Islamic bank licensees and the CBB. However, a broader definition of *Shari'ah* non-compliance risk can be 'the risk of reduction in earnings or value, through financial or reputational loss resulting from products and services being non-*Shari'ah* compliant'. This will include all contracts and agreements relating to the institution's products, policies, transactions and any new services that are introduced.

Managing the *Shari'ah* non-compliance risk properly encompasses certain actions that require the involvement of different departments and should be implemented in three stages within the Islamic financial institution.

The first stage is the setup of the *Shari'ah* Governance Framework 'SGF', while the second stage is to modify the existing product development process to encompass *Shari'ah* supervision requirements, and the third stage is to implement internal and external *Shari'ah* audit.

The Islamic Financial Services Board 'IFSB' (2009:2) explains the *Shari'ah* Governance Framework as the additional organizational arrangements undertaken by the Islamic financial institutions to ensure the effective independent oversight of *Shari'ah* compliance. A more detailed definition of the SGF is a set of institutional arrangements including policies and procedures that are used to ensure effective independent oversight of all *Shari'ah* compliance aspects in the Islamic financial institutions.



The main objective of the SGF is to reduce the potential occurrence of a *Shari'ah* breach to the lowest extent possible. This additional framework should fit within the overall corporate governance framework of the Islamic financial institutions.

The SGF has three pillars, the *Shari'ah* Supervisory Board 'SSB', the internal *Shari'ah* advisor and the *Shari'ah* audit. The SSB's duty is to provide guidance, supervision and certification of the activities of the Islamic financial institution products and services. The *Shari'ah* advisor role, on the other hand, is to oversee the day-to-day activities of the institution, provide support to the management on *Shari'ah* related issues and coordinate the relationship with the SSB and the internal and external *Shari'ah* auditors. The third pillar of the SGF is the *Shari'ah* audit (internal and external) which is aimed at providing assurance to the institution and the relevant stakeholders that the Islamic financial product offered and the financial transactions carried out by the institution are in fact *Shari'ah* compliant in all aspects and they are being implemented in accordance with *Shari'ah* requirements.

The second stage in managing the *Shari'ah* non-compliance risk is related to modifying the product development process to allow the input and supervision from *Shari'ah* point of view at least in two stages of the process. The first is the concept paper stage where the new product concept has to be reviewed by the internal *Shari'ah* advisor and then approved by the SSB; while the second is at the completion of the implementation stage where the product documentation (including legal agreement, process and procedures) have to be reviewed first by the internal *Shari'ah* advisor and then reviewed and approved by the SSB.

The third stage is the implementation of internal and external *Shari'ah* audit. The role of internal *Shari'ah* audit is to examine and review the business transactions conducted by the institution and to verify that all activities have been conducted in accordance with *Shari'ah* requirements. While the role of external *Shari'ah* audit is to examine the processes and procedures of internal *Shari'ah* audit and conduct a sample testing on all business transactions carried out by the institution.

The key objective of integrating the SGF into the overall corporate governance framework of the institution is to give more confidence to the stakeholders, regulators, customers and the general public regarding the institution's credibility, reputation and



operations. Effective *Shari'ah* compliance can be achieved by implementing robust controls to mitigate *Shari'ah* non-compliance risk.

2.3 PRODUCT DEVELOPMENT

2.3.1 The Product Life Cycle

Financial institutions need to develop new products frequently in order to either keep pace with market developments or due to the changes in their product lifecycle. Most products go through similar sets of stages in their lifetime. Urban *et al.* (1987:3) defines the stages of the product cycle as introduction, growth, maturity, and finally decline.

While the majority of the products follow the same cycle, the process of product development can be used not only to create new products, but can be also applied to extend the product's life by amending and relaunching an existing product with new features or packaging. Urban *et al.* (1987:6) argues that products move from maturity to decline which will impact their profitability. To regain profit, the organization directs its effort toward renewing the product life cycle or at replacing the declining product with a new, more profitable one.

Products' life cycles are becoming shorter for several reasons including the increasing sophistication of consumers and faster changes in technology and market conditions. Therefore, it has become imperative for financial institutions to concentrate their efforts in shortening their product development cycle, in order to develop products faster and introduce them to the markets in a timely manner. Bruce and Cooper (2000:5 quoting Grantham, 1997) state that "responding to short cycles is a key part of today's hypercompetitive market".

While it is important for financial institutions to develop and launch new products fast, it is equally important to ensure that speeding the process is not done by ignoring important steps in the course of product development which will ultimately lead to low quality product and higher probability of product failure.



2.3.2 Critical Success Factors

Ensuring sustainable growth in financial institutions depends largely on their ability to successfully create and launch new and superior products that can deliver unique benefits with real added value to their customers. To ensure the success of the product development process in any organisation, the factors contributing to the process need to be identified and understood. Considerable evidence from different empirical researches undertaken to identify the success factors of new products indicate that the product development process can be influenced by a wide range of factors. However, there is no set formula that can be used by all institutions to achieve successful new products, and each institution needs to improve its own process by capitalising on its own strengths and overcoming its weaknesses to achieve the optimal process. According to Ismail *et al.* (2012), a research published by Cooper (2005) identifies the best practices related to new product development process as:

(i) Implementing a product innovation and technology strategy;

(ii) Committing appropriate resources that can be allocated to the right projects;

(iii) Creating effective and flexible system to generate, implement and launch new ideas; and

(iv) Having the right climate and culture for innovation with true cross-functional teams, and senior management commitment.

Kuczmarski (1988) argues that companies with successful new product programmes have relatively common attributes that demonstrate the factors needed for a successful new product program and called them 'success factors'. Kuczmarski listed ten factors summarised in the following points:

- New Product Strategy that defines the way in which the company intends to achieve its objectives;
- (ii) New Product Plan which defines the overall process, roadmap and role of new products in achieving the company's objectives and strategy;



- (iii) Clear process with defined stages from concept to commercialisation that will be applied consistently to all new products;
- (iv) Detailed upfront quality market research to provide in-depth insight on target customers and their needs;
- (v) Clear definitions of the roles of each participant in the process while keeping one person responsible for executing the new product strategy and process to ensure accountability;
- (vi) Use a system to measure progress and performance of new products;
- (vii) Ensure efficient teamwork and communication across all functions;
- (viii) Clear measures for financial rewards to motivate the team;
- (ix) Ensure that the right people with the right experience are involved in the process and be motivated to stay involved for at least three years;
- (x) Provide supportive environment through the commitment of top management to provide appropriate human and financial resources needed.

Ismail *et al.* (2012) also identified ten critical success factors that can have an impact on the product development process. These factors can be summarised in the following points:

- (i) Provide strong commitment from top management to ensure success;
- (ii) Execute all activities correctly to ensure quality;
- (iii) Focus on customers' needs;
- (iv) Implement a flat organisational structure to ensure strong support and empowerment directly from top management;
- (v) Ensure having an organised cross-functional project teams and focused project leader;
- (vi) Ensure that all required resources are sufficiently available for the project;



- (vii) Provide proper reward and recognition to successful teams;
- (viii) Ensure that the product is developed and launched on time;
- (ix) Ensure having high quality project team;
- (x) Retain team members with relevant experience.

In addition, Rosenau *et al.* (1996:5) specified what they believed to be the new product process success factors, summarised as follows:

- (i) Develop unique and differentiated product that adds real value to the customer;
- (ii) Continuous coordination throughout the process;
- (iii) Upfront market research;
- (iv) Define the full details of the product before development begins;
- (v) Proficiency and quality execution of the process;
- (vi) Adapt suitable organisational structure that facilitates cross functional activities;
- (vii) Focus on decision making to select the right project;
- (viii) Proper planning for launch with appropriate resources;
- (ix) Top management commitment to implement the strategy and to allocate the needed resources;
- (x) Ensure short time to market, without compromising on the quality of execution;
- (xi) Discipline in implementing all stages of the new product development plan.

In reflecting, Bruce and Cooper (2000:9) found similarities in several significant success factors that differentiate between winners and losers. These factors are summarised in the following points:

(i) Creating a superior product that delivers unique benefits to the user;



- (ii) Having a clear and detailed definition of the product prior to the development phase;
- (iii) Ensuring quality of execution of predevelopment, technical and marketing activities;
- (iv) Maintaining market and technological synergy;
- (v) Ensuring attractiveness by providing competitive solutions;
- (vi) Top management support.

It should be noted that Ahmed (2011) summarised the factors that can improve the success rates of new products under three categories: 'strategy and plans', 'structure and resources', and finally, 'process'.

Under 'strategy and plans', Ahmed (2011:123) argues that "a clear strategy and implementation plan can reduce the risks of failure of new products". However, such success requires also "an innovative product development culture and supportive environment". As for planning, he explains that organisations that can have formal and detailed product development process are more likely to create successful products, adding that "a well-structured plan can reduce the costs (time and resources) and reduce risks of failure" (Ahmed, 2011: 123).

In relation to 'structure and resources', Ahmed (2011) emphasises the importance of proper structure to ensure successful coordination among all relevant departments involved in the process. He also points out the importance of having the right resources in terms of financial and human capital with the right knowledge, creativity and skills.

As for the 'product development process', Ahmed (2011) emphasises that ensuring the quality of process's execution is vital to ensure success. The process can be made efficient by ensuring flexibility within each stage of the process to make it more adaptable, reducing the time needed for approvals by using conditional approval, prioritising products to ensure efficient allocation of resources, and finally using different stage-gate process for different products to ensure flexibility of the product development process.



Considering the similarities between the success factors specified above and those identified by many other studies, the success factors can be regrouped under the following categories:

- (i) Clear strategy and focused vision: create guidelines for the new products' objectives;
- (ii) Planning and execution: proper and detailed planning with clear steps, allocation of roles and proper monitoring mechanism are vital for the success of the process;
- (iii) Market research: full understanding of the market environment, including customers demand and competitors' products, ensures successful product design;
- (iv) Availability of resources: including experienced staff, financial and system resources;
- (v) Management commitment: to support, encourage, rewards the team and to provide the required resources.

In summary, the successful implementation of the new product development process in financial institutions requires focus on strategy, detailed plans, proper resources, suitable organisational structure and consistency in implementation, all of which will be the core subject of this research.

2.3.3 Strategic Planning

Successful product development requires a clearly defined product strategy. However, in order to ensure that the product development process achieves the objectives of the product strategy, a link between the product strategy and the product development process must be established. Rosenau *et al.* (1996:19) argue that institutions need to link their strategy to product planning in order to create products that deliver the institution's strategy. This link will be ensured through strategic planning.

Annacchino (2003:5-7) lists a number of benefits that can be gained from using strategic planning. The salient points are summarised below:

(i) Improving profitability by focusing on gross margin and net profit;



- (ii) Creating higher growth rate by pursuing the right opportunities;
- (iii) Reducing wastage in time, effort, material and resources;
- (iv) Focusing on the market place and customers' perspective;
- (v) Providing a mechanism to create detailed future plans to be cascaded to the workforce;
- (vi) Allowing the participants to contribute and commit to the plan;
- (vii) Creating a unified management team;
- (viii) Providing a better understanding of competition landscape and how and where the organisation should compete;
- (ix) Ensuring higher level of quality in plans execution;
- (x) Producing greater customer satisfaction;
- (xi) Providing a mechanism to continuously improve the product development process through ongoing modifications;
- (xii) Achieving the long-term vision by reinforcing the day-to-day goals and schedules.

Reaping the benefits of strategic planning requires the institution to create a framework for the planning process. According to Annacchino (2003:5 - 17), the strategic planning framework consists of three main elements:

- (i) Understanding the current position of the institution, 'where we are';
- (ii) Setting the future goals for the institution, 'where are we going';
- (iii) Planning how to move from current position to the future goals, 'how will we get there'.

After setting up the framework, the plan needs to be created. According to Rosenau *et al.* (1996) there are seven steps for strategic product development planning as follows:



- (i) Setting the delivery targets that will achieve the strategic objectives;
- (ii) Collecting the required information to understand the current issues affecting the product development process;
- (iii) Mapping the strategic geography to understand the current market position of the institution;
- (iv) Creating a list of new product options to focus on the most important ones;
- (v) Setting criteria to define the selected product options;
- (vi) Creating the portfolio plan, which will align the new product ideas with the strategy;
- (vii)Managing the portfolio to ensure you have the right mix of products.

These steps should be implemented after setting the strategy and before starting the actual development of the product.

2.3.4 Product Strategy

Each institution needs to design its own product development process to ensure optimal results for the institution. To achieve this, institutions need to adapt a good and clear strategy that can be implemented efficiently. Such a strategy, which can be part of the overall corporate strategy, is essential to ensure positive performance in product development.

Urban *et al.* (1987:14) define corporate strategy as "the overall direction-giving framework for an organization. In a competitive world, it is clear that this framework should confer on the firm a unique differential advantage". Therefore, successful development of new products requires the institution to understand its market conditions including its customers, competitors and its own competencies to be able to make successful decisions. Therefore, the starting points for formulating the overall strategy for product development are identifying the institution's own capabilities and understanding its market environment.



According to Urban *et al.* (1987:14 -17), the process of formulating the strategy requires the following stages:

- (i) Setting the strategic goals: the goals should be realistic and reflect the nature of the institution;
- (ii) Converting the goals into quantifiable numeric measures: creating sales and market share targets;
- (iii) Setting a measure for achievement: the difference between existing figures and the new targets reflect the amount of work needed in new product development;
- (iv) Deciding on the type of the strategy needed: whether to be reactive or proactive will depend on the circumstances of the institution.

It should be noted that the new product strategy needs to be comprehensive, reflect consensus and should be communicated clearly in order to address all issues related to new product development. Rosenau *et al.* (1996:140) provide detailed analysis on the key elements of a comprehensive strategy which can be summarised in the following points:

- (i) Clear understanding of customers' needs;
- (ii) Full understanding of the market environment and competitor landscape (market size, market share, market perception, pricing, other products in the market);
- (iii) Knowledge of factors influencing the process, whether internal factors (capabilities, competencies and resources) or external factors;
- (iv) Determining the strategic focus and how the aims will be met in practice.

According to Barclay *et al.* (2000:4), evidence from research related to product development has linked the success of product development to having a clearly defined new product development strategy. They argued that product development strategy can be developed by using different approaches, the choice of the approach will depend on whether the institution is looking to tackle a new opportunity or face a possible threat. As can be seen from Table 2.3, Urban *et al.* (1987:15) describes the features of the reactive and proactive strategies and referres to them as the two main



approaches for setting up new product development strategy, adding that each "approach to product development is appropriate under certain conditions and the company must recognise the need for change and prepare accordingly".

The choice between having a reactive or proactive strategy depends largely on the conditions related to the institution at any specific time. This indicates that there is no set-in-stone strategy and in the long run, the use of one strategy might not be viable as the internal circumstances of the institution and the market conditions will be constantly changing. Therefore, most institutions use a mix of strategies to ensure readiness to all possibilities.

Reactive Strategies	Proactive Strategies
Defensive	Research & development (innovation)
Imitative	Marketing
Second but better	Entrepreneurial
Responsive	Acquisition

Table 2.3: Features of Alternative Product Strategies

Source: Urban *et al.* (1987:15)

Using a mixed strategy is, in most cases, a necessity for the institution and requires the institution to have the right balance between the two approaches to ensure long term sustainability. The most important issue is to maintain the innovative element by investing in future research and development to protect the institution's competitive advantage and reach the desired growth by creating new products and entering new markets.

In relation to developing new Islamic financial products, Al-Suwailem (2006:104) argues that Islamic financial institutions can use one of three strategies for this purpose. These strategies are imitation or reverse engineering, modification, or satisfaction.

The imitation strategy uses a conventional product as the target where Islamic contract (or a combination of contracts) is used to create an Islamic product with features identical to the conventional product. The modification strategy uses an existing and approved Islamic product as the basis to create a variation of the product



that leads to provide a new function or services. The satisfaction strategy uses the actual needs and demands of the customers as the starting point for developing the new product, which is the natural product development process strategy.

2.3.5 Innovation Process

The success of new products depends largely on their creativity and the added value they bring to the customer through innovation. Trott (2008:15) defines innovation as "the management of all the activities involved in the process of idea generation, technology development, manufacturing and marketing of a new (or improved) product or manufacturing process or equipment". However, Marion (2007:5) quoting Edwards and Gordon (1984) defines innovation as "a process that begins with an idea, proceeds with the development of an invention, and results in the introduction of a new product, process or service to the marketplace".

Therefore, innovation is a process governing a set of activities that leads to a significant improvement on an existing product or service, or to the conception of a new creative product. Based on this, it is critical for the institution to create the right environment for the product development team in order for them to be creative and add value through innovation. This is specifically critical if the institution has adopted a proactive strategy where innovation is the backbone of success. Cooper and Edgett (2010) argue that "top-performing businesses have in place a product innovation and technology strategy driven by the business leadership team and a strategic vision of the business". This is also supported by Ahmed (2011:99) who argues that "firms that recognise the changing nature of the markets understand the need to adjust to be relevant in the future. These firms will have innovation as an integral component of their mission and strategic goals".

Innovation can be driven by different factors. These factors can be classified, according to Urban *et al.* (1987), under three categories: 'external pressure', 'internal factors' and 'market stimulus'. 'External pressure' include competitions, changes in regulation, lifestyle, technology, inventions and costs of material, whereas, achieving financial goals and growth rates are 'internal factors'. Demographic changes, customers demand and suppliers' initiatives are considered as 'market stimulus'.



Institutions that can understand these forces and use them to create new opportunities are considered to be proactive.

There are different types of innovation that can be used by an institution depending on its overall strategy. As can be seen in Table 2.4, Bruce and Cooper (2000) list five types of innovations that can be used depending on the strategic advantage required by the institution.

Type of innovation	Strategic advantage			
Novelty	Offering something no-one else can			
Competence shifting	Rewriting the rules of competence game			
Complexity	Complex technology keeps entry barriers high			
Robust design	Product or process life can be extended to reduce costs			
Continuous incremental	Constant reduction of performance costs			
innovation				
$S_{\text{respective}}$ Brance and $C_{\text{respective}}$ (2000.7)				

Table 2.4: Types of Innovation

Source: Bruce and Cooper (2000:7)

Bruce and Cooper (2000) also point out that there are two types of innovation activities, namely 'simple modification' and 'radical innovation'. 'Simple modification' is a set of activities leading to minor modification or adaptations to existing products and usually used with a reactive product development strategy. While 'radical innovation' relates to creating a completely new service or product from scratch, which is a riskier approach, and used by institutions that adapted a proactive approach to product development. In either case, achieving innovation requires discipline by the product development team to carry out the needed activities to achieve their creative potential, rather than spending most of their time on routine operational aspects. Therefore, clearly defined strategy and objectives associated with discipline in implementation of the process across all involved functions in the institution is a must to achieve innovation.

According to Cooper and Edgett (2010), there are two tools needed to implement effective product innovation programs. The first is strategic product road map, which is an effective tool used by top management to map the list of future product development initiatives and the timing of required actions. While the second is strategic allocation of resources, which is a strategy used to ensure availability of resources for critical products.



The requirements for service innovation are similar to product innovation. However, services are easily replicated by competitors. Rosenau *et al.* (1996:327) argue that "services can typically be duplicated by competitors in less time and with less capital investment". Therefore, financial institutions have to continuously innovate to protect their competitive advantage. Rosenau *et al.* (1996:327) suggest five different ways to ensure continuous innovation summarised as follows:

- (i) Provide competitive offerings by uniquely differentiating the service and focusing on a set target of customers;
- (ii) Enhance the service process to distinguish the service from competitive offerings by using technology;
- (iii) Add value by creating a unique set of benefits and features (through bundling/ repackaging existing services, adding new benefits to current services, or creating totally new service offerings);
- (iv) Increase standardisation or customisation in providing the services to exceed customer expectations;
- (v) Distinguish the offering by using a brand or a unique communication approach.

Service differentiation is a key requirement to successful service development that can be achieved by focusing on one or more of the five ways of innovation listed above.

As stated earlier, Islamic financial products and services are different by nature as they are required to adhere to *Shari'ah* requirements in addition to the legal and regulatory framework. Therefore, innovation in Islamic finance becomes more challenging. In addition, competition between Islamic and conventional financial institutions as well as market conditions geared towards efficiency is another important factor that needs to be considered in relation to innovation. Weill (2009:3) argues that greater competition will be in favour of financial development through increasing access to low cost financial products. This notion is also supported by Vayanos *et al.* (2008:6) who argued that increased competition leads "to improved product innovation and pricing. This in turn will boost the attractiveness of sharia-compliant solutions to both Muslims and non-Muslims alike". They also set out a set



of requirements that need to be established by Islamic financial institutions to have a differentiated product development capability. The main requirements included identifying customer needs using a market intelligence process; a robust product development methodology that can lead to fast development and deployment of new products; a mechanism to engage the *Shari'ah* board at early stage; automation of monitoring process to reduce the costs and having a suitable management information system to track the performance of the product and help in improving the product and the service as needed. Hence, implementing these requirements will allow Islamic financial institutions to innovate better Islamic financial products that will help them in improving their competitive advantage.

In terms of the approach to innovation, Ahmed (2011:209) identified two main approaches for innovation in Islamic finance, namely, 'reverse engineering' and 'innovative engineering'. The first approach is used to replicate the effect of conventional products, while keeping the contractual framework in compliance with Shari'ah requirements. This approach focuses on the technical side of the product and does not give a priority to the ultimate outcome of the product and its impact on the welfare of the customers. In other words, it does not take into account achieving magasid al-Shari'ah. The second approach or 'innovative engineering' requires the use of applied research and strong knowledge base in finance and *Shari'ah* to create a completely new product that is unique in nature as it will fulfil both the technical and financial requirements and at the same time achieve magasid al-Shari'ah. Accordingly, Ahmed (2011:167-168) classifies the Islamic financial products into three types namely, pseudo-Islamic product, Shari'ah-compliant product, and Shari'ah-based product. The pseudo-Islamic product is designed using an Islamic contract (or contracts) to achieve the economic effect of a prohibited transaction in Shari'ah, or in other words, it "conforms to the legal form only; it does not fulfil the substance of Shari'ah or serve the social needs". An example of a pseudo-Islamic product is the organised tawarruq or bai alinah. On the other hand, a product that is classified as Shari'ah-compliant will be based on Islamic principles and serves to satisfy a need that is acceptable from Shari'ah point of view. This product type, which includes *murabahah*, *ijarah*, *istisna*' and *salam*-based products, is the most commonly used in the Islamic financial industry as it fulfils the main Shari'ah requirements in terms of contractual agreements, processes and procedures. Hence it "would satisfy



the form and substance of Islamic law, but fail to pay attention to the social goals"; however this type of product is currently being implemented by the industry in a way that creates debt-like instruments, in other words, it fails to achieve *maqasid al-Shari'ah*. As for, the third type, which is *Shari'ah*-based product and includes products that are based on *mudarabah* and *musharakah*, it is designed to "satisfy the form and substance of Islamic law" by creating a profit and loss sharing mechanism and therefore it will contribute positively to achieving *maqasid al-Shari'ah*.

Ahmed (2011) suggests using functional approach to develop '*Shari'ah*-based' financial products instead of the products-focused approaches usually used in the industry. He argues that using the functional approach allows the financial institutions to move away from reverse engineering by first identifying the customers' needs that should be satisfied, and then choosing the most appropriate mode of Islamic finance to design the product that meets customers' requirements.

2.3.6 The Product Development Process

Institutions that are able to develop new products successfully will ensure long-term and sustainable competitive and healthy product portfolios. Rosenau *et al.* (1996) state that new product development process helps bring commercially successful new products to market on time, now and in the future. However, institutions that fail in creating new products are more likely to face competitive problems or even collapse. In substantiating this, Patrick (1997) argues that institutions that fail in product development have not developed an adequate process for identifying what customers really need; they offer them products with benefits that solve needs they do not have.

The new product development process can be defined as "the procedures and methods that companies use to design new products and bring them to market" (Unger and Eppinger, 2011:689). In a similar manner, Writh *et al.* (1995:2) define it as "a sequence of phases, ranging from project initiation to completion". While Bhuiyan (2011:748), defines it as a process that consists of the activities carried out by firms when developing and launching new products. Furthermore, in emphasising the multifaceted nature of the process, Ahmed (2011:13) defines it as a process involving several steps that requires coordinating and input from different departments of the organisation. Moreover, by adopting a macro perspective, Krishnan and Ulrich



(2001:1) define it as "the transformation of a market opportunity and a set of assumptions about product technology into a product available for sale". A more detailed definition provided by Marion (2007:1) who defines the product development process as "the activity of defining, conceptualizing, designing, and ultimately commercializing a product to be introduced into a new or existing market".

As in the definition, there are also a variety of different models that are used for developing new products. These models can vary depending on the type of the institutions and the type of the product. Annacchino (2003:24) argues that different product development processes are used for different reasons and each has its own attributes and contribution, and he links the choice of the process to the type of product, which in turn can be classified under the following main categories:

- (i) New to the world product: this is a revolutionary type of product that will create new market;
- (ii) New product lines: this type allows the institution to enter new markets;
- (iii) Addition to existing product line: this product type will support, complete or complement existing products;
- (iv) Improvements and revisions of existing products: a redesign of exiting product to offer new features, better quality and add more value.

Kuczmarski (1988:205) argues that having an appropriate process that is suitable for the product type will expedite the process and reduce the time to market. He lists different product categories including "new to the company, line extensions, flankers, repositioning, and cost reductions". Similarly developing services can also fall within the above categories, as Rosenau *et al.* (1996:327) argue that services also "comes in different degrees of "newness", new to the world, new to the company, line extensions, and the like".

It can, therefore, be suggested that in some cases it might be useful to use a combination of processes or use some elements of one process in another process to ensure flexibility of the process and to expedite the development of the product.



2.3.6.1 Types of product development processes

While there is no unique process that fits all, most of the models portray a sequence of various stages with several steps within each stage. Kuczmarski (1988:36) states that "the process should be structured, with a sequence of steps that define the stages a new product concept will pass through on its way to market launch". Therefore, Unger and Eppinger (2011) refer to a number of product development process types including 'staged process', 'spiral process', 'design-to-budget' and 'evolutionary prototyping'.

Accordingly, 'staged process' follows a series of steps that involve few iterations and rigid reviews. This type of process is sometimes very inflexible as once a stage is completed it will be difficult or expensive to change. Ahmed (2011) supports this view about stage-gate process as it may slow the process if it becomes bureaucratic. Cooper (1994, as cited by Ahmed, 2011:107) adds that stage-gate process "goes thorough different phases and checkpoints or gates. At each gate, the product is assessed by a relevant authority and a decision of 'go/kill/hold/recycle; is made". The use of this process helps in reducing the probability of failure and reduces the costs of failed products.

'Spiral process', on the other hand, is more flexible and allows for rework, thus reducing the development time and costs. While it uses similar steps to the staged process, it allows a higher number of iterations. Nevertheless, Unger and Eppinger (2011) point out that the complexity of spiral process requires rigid specification and significant managerial attention that might make it unsuitable for simple projects.

As for 'design-to-budget process', it is similar to a staged process with focus on multiple iterations to the design and testing stages. The advantage of this process is to keep tight control on budget. However, this might reduce market applicability and increase quality risks.

As regards to the 'evolutionary prototyping process', it focuses on accelerating the feedback process from early prototypes. The process has advantages in situations where the initial specifications are vague and require fast feedback on initial experiments. However, this might increase the time needed to complete the process and reduce the clarity of the following stages.



Barclay *et al* (2000) recommend a new model for product development besides the 'stage-gate process', which is called 'the 13-steps process'. The choice between the two models will depend on the institution's development environment and associated risks. The 13-steps process model provides comprehensive framework that covers all vital steps related to product development process and include: initial screening, preliminary market assessment, preliminary technical assessment, detailed marketing assessment, pre-development business analysis, product development, in-house product testing, customer testing of the product, test marketing and trial selling, trial production, pre-commercial analysis, production start-up and market launch.

Kuczmarski (1988), on the other hand, refers to a 'ten-step product development process'. The steps include: category selection, idea generation, concept development, business analysis, screening, prototype development, market testing, manufacturing testing, commercialisation and post launch check-up. However, Trott (2008) finds that the most frequently presented process is a simple linear model with eight-stages that cover idea generation, idea screening, concept testing, business analysis, product development, test marketing, commercialisation, monitoring and evaluation. The benefit of using this process is that it will more likely fit in any type of institution regardless of the differences between the industries. Rosenau *et al.* (1996), similarly, describe 'nine stages' that are most frequently used in a formal product development, idea concept generation, idea screening, business analysis, development, test and validation, manufacturing development and commercialization.

While the above mentioned models for product development processes are general in nature, in the sense that they can be used in any type of industry, the products of financial institutions are intangible in nature and are more akin to services than physical products. This unique feature creates additional complexities and requirements. According to Rosenau *et al.* (1996:321) the development of services requires special process that should take into account two important facts. The first is that services are intangible which makes them difficult to describe or test until customers actually use them. While the other is related to the customers' role in the process, as they will be intimately involved in service delivery. This view is also supported by Ahmed (2011:11-12) who argues that the "output of financial firms



differs from physical products as they produce intangible services that are essentially processes". Therefore, due to the intangible nature of financial products, the product development process might need to be modified to take into account the types of products and services that need to be developed. In other words, the different nature of financial products require different approach as indicated by Wirth *et al.* (1995:3) who asserted that "the work breakdown structure divides the financial product development effort into successively smaller units of work and responsibility". They also refer to three approaches for financial product development as follows:

- (i) Blueprint approach: used to design entire financial services systems;
- (ii) Prototyping approach: used to create small scale subsystems and then move to build the entire system;
- (iii)Phased approach or reversed engineering: used to recreate a financial product offered by competitors.

Each of the three approaches consists of seven stages process with minor differences as illustrated in Figure 2.3.

Using the above classification for financial product development approaches on the products currently offered by the Islamic financial industry creates three groups of products. The first is the 'reverse engineering' type which is widely used in the industry and is designed to achieve the exact outcome of a conventional product in terms of contractual obligations and risks. The second is the 'prototype products' that are created with new features but designed to maintain the conventional products most important risk features. This type is the most commonly used in the industry. The third type is the 'blueprint' and it is very rare in the industry as it has to be completely new product that has new features and carries different types of risks and contractual obligations.

This classification is in line with Ahmed's (2011) classification of product development that has been discussed in the previous section, where he classified Islamic financial products into three types, *pseudo*-Islamic products, *Shari'ah*-compliant products, and *Shari'ah*-based products.





Figure 2.3: Three Financial Product Development Processes

Source: Wirth et al. (1995:4)

In relation to services development, Rosenau *et al.* (1996:320) assert that "the development of new service is best accomplished with an orderly staged process", and proposed a ten-step new service development process that can be used by service based institutions. The ten-step process includes: problem description, idea creation, concept definition, analysis and screening, concept design, delivery and testing, broad market testing, infrastructure scale-up, launch and post launch check-up.



While there are different types of processes that can be utilised for different types of products and services, Rosenau *et al.* (1996:320) argue that each institution needs to customise the process to meet its requirements "the point here is not to debate what are the right steps in the process, but to emphasize the need for having a formalized, step-by-step process that is then customized". This is specifically correct in relation to developing Islamic financial products that are unique in nature and require a customised process.

The product development process in Islamic financial institutions, as evidenced in this study, in general, follows the same stage-gate product development process. However, as mentioned before, Islamic financial products differ from conventional financial products, as they have to comply not only with the specific *Shari'ah* requirements pertaining to financial products, but also they need to ensure that the product contributes positively to achieving the wider objectives of *Shari'ah*. Usmani (2015:20) argues that if Islamic financial products are "implemented with all their necessary conditions that have always been stressed upon by the *Shari'ah* scholars, they are substantially different from an interest-based financing". Thus the uniqueness of Islamic financial products necessitates having a distinct product development process with additional stages to ensure that the outcome, whether a product or a service, is not only compliant with all *Shari'ah* requirements, but also contributes positively to achieve *maqasid al-Shari'ah*.

Ahmed (2011:107) refers to a unique model for developing Islamic financial products composed of three phases with each phase having six steps summarised as follows:

- (i) Phase one is idea generation and acceptance: this phase consists of idea generation, idea screening, concept paper, *Shari'ah* approval, business cases and authorisation;
- (ii) Phase two is converting concept to product: this phase entails product design, documentation, sign-off, *Shari'ah* approval, IT system development and in-house testing.
- (iii) Phase three is commercialisation: this phase involves personnel training, pilot run, marketing programme, full-scale launch, post launch review and *Shari'ah* audit.



In a similar manner, Yusoh (2011) presented a different process for developing Islamic financial products with four main stages. Each of the stages has specific steps that can be summarised as follows:

- (i) Stage one is product conceptualisation; which consists of idea screening, business opportunity analysis, prototype and *Shari'ah* approval;
- (ii) Stage two is product development; which includes research and development of the concept, product development and testing;
- (iii) Stage three is approval and includes specific product approval;
- (iv) Stage four is commercialisation, which includes launch, advertisement and promotion and post implementation review.

The Financial Product Development Centre 'FPDC' (2013:15) presented a ten-step product development process that includes identifying current and future market requirements, identifying gaps in existing products, generating new product ideas and preparing the concept paper, evaluating new product ideas and developing the business case, approval of new product ideas, product development project, final *Shari'ah* approval (for documentation and process flow), adaptation of IT and business process implementation, product launch and finally, post-launch review including *Shari'ah* audit and feedback.

As the discussion so far indicates, a significant amount of research has been conducted in relation to the general step-by-step product development process as detailed above. However, the process related to developing financial products and services has not been given the same attention by the specialists in the field. Furthermore, when it comes to the process of developing Islamic financial products, there seems to be very little research undertaken in this crucial area. This view is also confirmed by Ahmed (2011:13) who explains the reason behind such lack of research as "being a relatively new industry and due to the uniqueness of the Islamic banking products, no in-depth study has been done on the process of product development for Islamic banks".



2.3.7 Improving the Product Development Process

Institutions that are successful in product development are constantly seeking to speed their product development process and improve its reliability. Ahmed (2011) describes different methods that can be deployed to improve the product development process, which are as follows:

- (i) making each of the stages flexible and adaptable;
- (ii) speeding the process by permitting conditional approvals in order to move faster from one stage to the next;
- (iii) prioritising products to enhance the efficiency of resource allocation and usage;
- (iv) using different processes for different products where the choice of the process will depend on the type of the product;
- (v) reducing the number of gates in the process to speed up the process;
- (vi) using overlapping information by generating information required for later stages in parallel to earlier stages and thereby cutting the overall time needed for the development.

Kuczmarski (1988) argues that the product development process can be improved by having clear approval points at each stage, the most important of which is at the concept stage. The individuals responsible for taking the decision for each stage should be clearly identified to ensure accountability. He also argues that allowing for a number of iterations between the steps will also improve the process. Kuczmarski, (1988:204) states "each step loops back to the previous one as well as back to the idea-generation stage". Furthermore, Annacchino (2003:7) argues that using long term strategic planning will improve the product development process through continuous feedback and modifications. While Rosenau *et al.* (1996:492) emphasise the importance of reviewing existing product development practices as the first step to improve the process stating that "this can reveal numerous opportunities for improvements, since duplication of tasks is quite common in complex, cross-functional processes such as new product development". They also emphasise the importance of having documented formal process, as "without documentation of a



process, there is little opportunity for performance improvement and organizational learning".

Besides the aforementioned points, the product development process in Islamic financial institutions can be also improved through setting up regular meetings (on monthly basis) between the product development and *Shari'ah* compliance teams to exchange ideas and knowledge with regards to their respective roles in the process. The objective of these meetings is to create harmony between the main teams involved in the process that will lead to creating more successful products.

2.3.8 Organisational Structure

The organisational structure related to the product development process usually reflects the importance of product development within the institution. Having a special unit within the institution which has the full responsibility of running the product development process is essential to ensure success. Urban *et al.* (1987:292) argue that "without an organizational unit that has the specific responsibility to manage products, few innovations will result". In this context they differentiate between formal and informal structures used for product development. They list a number of formal structures, as follows:

(i) having a separate research and development department;

(ii) assigning the product development responsibility to the marketing department supported by product managers;

(iii) establishing a dedicated department for product development to coordinate the institution's capabilities and bear the responsibility for product development;

(iv) having the product development activities done within each of the business department which is suitable for large institutions;

(v) outsourcing the product development function to external suppliers as this arrangement is particular suitable for institutions with inadequate human resources.

Besides having the above formal types of structure, Urban *et al.* (1987) finds that most firms use also informal supporting structures like having a new product



committee, special task force or having one staff reporting to the chief executive officer 'CEO'.

The new product development committee usually includes the CEO and a representative from each of the main departments in the institution, at the level of deputy head. The committee's role is to set guidelines, ensure availability of resources, screening new ideas, approving concept papers and getting the final product documentation ready for launch. However, the committee should not interfere in the day to day running of the product development process.

The special taskforce type of supporting structure is usually setup for a specific reason and for limited duration, with a direct responsibility to complete the task. The advantage of using this structure is to pool the most talented staff to tackle a major challenge facing the institution.

The third supporting structure is appointing one member of the staff who reports directly to the CEO to conduct specific tasks including market research, idea generation and to oversee the process of developing the new product until it is launched and then monitor and manage the new product. The benefit of this structure is that it reflects the strategic view of the top management for a certain product and provides direct ownership, continuous support, ongoing coordination and monitoring.

Urban *et al.* (1987:300-301) argue that formal structure may help or hinder innovation, but the informal structure will determine how the process is implemented. They list a number of informal structures for product development that are adopted to support and improve the formal structure. These usually include assigning certain tasks to certain individuals to facilitate the implementation of the formal structure. Examples of this include having a champion for each new product to sell the product idea internally and attract resources; selecting a senior manager to be the product protector by defending the product and supporting the product champion; appointing an auditor to ensure that financial projections are accurate; having a controller to monitor the progress against the agreed time and budget; identifying and utilising inventors and creators across the different departments of the institution; appointing a leader to coordinate team efforts, coach and motivate the members in the team.



It should be noted that the most common structures used for product development are those that are controlled by a particular function in the institution like engineering, research and development or marketing (Rosenau *et al.*, 1996:493). However, they point out that the use of cross functional team structure is becoming more popular; adding that "when new products are recognized as special projects, the likelihood of success increases".

In suggesting another construct, Ahmed (2011:102) identifies three different structures applied for product development, namely, functional structure, project structure and matrix structure. In the functional structure, the manager of the function will be responsible for the process and will be coordinating the input from other functional units. In a project structure, a team of experts from different functions will be pooled together to run and complete the project. The matrix structure combines elements from both functional and project structures, where if the project is big and complex, the structure used will be more of a project structure where the project leader will have the overall responsibility of the project. However, if the project is small and simple, the structure will be close to the functional one with function head having the responsibility to oversee and complete the project.

2.3.9 Process Ownership and Management

Implementing the product development process successfully requires the institution to identify a process owner who can be given the overall responsibility to implement and manage the entire process from idea generation to launch. The process owner will track the process's performance against the agreed targets and continuously work on improving the efficiency of the process. Rosenau *et al.* (1996:429) state that "clearly identifying a person as the owner indicates a higher level of commitment and raises the importance of new product development to the organization". They also found that having a process owner brings mutable benefits including effective communication with the product team and other functions in the institution, reducing the bureaucracy in the process, shrinking the product's time to market and enhancing the effectiveness of the team by developing their skills and addressing their needs. The characteristics and the skills of the process. Urban *et al.* (1987:292), therefore, assert that "with



enough energy, a 'champion' can make the development process work in almost any organization".

The management of the product development process can be a challenging task as it requires the process owner to manage and coordinate activities that cut across departmental lines. As discussed earlier, the success of the process depends on having the right organisational structure in place which would allow the process owner to obtain the required resources at the required time. Urban *et al.* (1987:292) argue that "resources from many areas must be brought together for the successful management of evolving and existing products".

The process owner needs to have proper management and planning skills to be able to manage the development of the product across all activities and throughout the entire process. Annacchino (2003:88), therefore, argues that the process owner will need to work on different fronts including cost reduction, best pricing, enhancing the functionality, creating new product features and finding the best route to market. The outcome of any of these activities might short fall of expectation and therefore, it is the process owner's job to keep pushing all the boundaries to achieve optimal solution.

Furthermore, the process owner is expected to expedite the process by making it simple and actionable, define the roles and allocate tasks for each team member, effectively manage the relationship with other functions in the institution and ensure consistency and discipline in executing the process' tasks. In supporting this, Ahmed (2011:124) asserts that success can be managed by ensuring the quality of execution of the process, while Kuczmarski (1988:36) argues that the key benefit of consistency is the accumulated learning that will be gained by doing something the same way, time and time again.

2.3.10 Risks and Product Development

Developing new products obliges institutions to allocate different types of resources to the process including technology, human and financial resources. As there are always limitations on the resources' availability, the disciplined utilization of these resources in the product development process should be maximised so as to decrease risks and increase returns. Failing to do so increases the probability of product failure



which might lead to financial losses, loss of opportunity and damage to institution's reputation and brand. According to Kuczmarski (1988:15), risk in product development can be defined as "as the probability of success or failure". While most of the research in product development has focused on the success factor, little references have been made on the reasons of failure. Urban *et al.* (1987:36) state that "very few systematic studies have been carried out to diagnose why products have failed".

It is common knowledge that successful institutions are those who are able to deal with the risks related to failure and create new successful products. Kuczmarski (1988:15) argues that the real corporate winners can manage the risks and digest the uncertainty to fuel the lifeblood of future growth through successful new products. However, those who are reluctant to take the risks are less likely to create any innovative products and will be adopting a reactive approach to product development. Kuczmarski (1988:15) also finds that "new-to-the-world products and new product lines usually account for companies' most successful new products, even though they usually represent a small percentage of all new product types launched".

Managing the risks related to product development compels the institution to adapt a risk management framework that takes into account all related risks and provides appropriate tools to manage or mitigate those risks. Ahmed (2011:122), therefore, argues that "the objective of risk management would be to decrease the probability of the occurrence of different events that can have a negative impact on the performance of a product". The first step in building the risk management framework is to understand the various risk factors related to the product development process, then design the mitigation tools and finally implement the controls needed to reduce the probability of occurrence of these risks.

Unger and Eppinger (2011:690) list a number of primary risks related to product development including "technical, market, budget, or schedule". Accordingly, technical risk is related to the uncertainty about whether a new product will meet its own functional and design specifications, while market risk is related to the ability of the product to meet customers' needs. They argue that implementing a spiral process that has gates to check the progress at each stage and has several iterations to incorporate feedback can reduce the rework required and therefore reduce the


development time and costs. However, the success of this solution depends on the ability of the institution to identify its primary development risks and then tailor the process in terms of stages and iterations to manage these risks.

Urban *et al.* (1978:37-38) listed a number of risks that lead to product failure including, among others, misunderstanding of consumer needs, competitor response, changes in consumer's tastes and organisational problem. The solution proposed to deal with these risks includes customers preference analysis to obtain proper understanding of customers' needs; creating a good design with strong positioning and quick response to help in pre-empting competition; frequent monitoring of consumer perception and preferences during development and after launch to continuously meet the changes in consumer tastes; and finally implementing a proper formal and informal structure with multifunctional approach to facilitate communication within the institution and reduce organisational issues.

Furthermore, Barclay *et al.* (2000:62) refer to two more risks related to product development, namely, continuation risk and abandonment risk. Continuation risk refers to the cost of continuing a product development. Abandonment risk, on the other hand, refers to the loss of revenue from products cancelled before launch. They assert that these risks can be mitigated by breaking the process into stages with decision criteria for each stage.

Ahmed (2011:122-128) distinguishes between risks inherent in products that can be mitigated during the process, and risks related to the product development system. In relation to the product development process, Ahmed (2011: 122-128) refers to three major risks including:

- (i) technical risk that arises due to poor execution of the process leading to delays in development and increase of costs;
- (ii) market risk that arises due to either not assessing customers' needs or overestimating the demand;
- (iii) operational risk that arises due to the improper design of the delivery system.

Ahmed (2011) also refers to a number of factors that lead to product failure which include having unclear strategy, lack of supportive environment, oversight in the implementation of the IT system and lack of consistency in implementing the process.



In relation to risks associated with services development, Ahmed (2011:78) refers to some risks including "disorganised development, ease of duplication by competitors, confusing the customer with information overload and excessive new services". He also mentions the lack of consistency and potential degrading of the services as potential risks in service development.

In addition, Ahmed (2011) presented several techniques and tools to manage the different types of risks related to the product development process. The most important ones are implementing a formal and systematic process that can reduce the technical risks; gathering enough information on the market to have a proper assessment and a better understanding of customer needs to reduce market risks; identifying the potential fail-points in the product processes to ensure proper correction is in place; implementing proficient operating and delivery systems and having back-up plans to minimise operational risk; having a clear strategy, well-structured plan, supportive environment, consistency in implementing the process and having sufficient resources will also reduce the risk of product failure.

The process of developing Islamic financial products, hence, will be subject to the same risks mentioned above as those risks are general in nature and apply to most types of product development regardless of the type of the product or the industry. However, as Islamic financial products should comply with *Shari'ah*, the process has to be refined to take *Shari'ah* compliance into account, failing to do so will lead to exposure to *Shari'ah* non-compliance risk. Hence, *Shari'ah* non-compliance risk in relation to product development can be defined as the risk of developing a product or service that is not in compliance with *Shari'ah*. This risk can be mitigated by adding at least two new stages for obtaining *Shari'ah* approvals, one at the concept stage and the other on completion of all documentation, but before the product launch.

It should be noted that *Shari'ah* non-compliance is a unique risk in the sense that it might lead to internal and external risks at the same time. Internal risk occurs when the institution fails to obtain the required *Shari'ah* approvals at the right stage and on time leading to potential delays and potential financial loss, whereas, external risk is related to the acceptance of the product, as a *Shari'ah* compliant product, by the target customers and other *Shari'ah* scholars.



As Islamic financial products are, in most cases, new, there is a need to educate customers on how these products operate and how they are in compliance with *Shari'ah*, hence the acceptance of the product becomes crucial to the success thereof. Kuczmarski (1988:175) points out that:

Innovative products that require a change in consumer behaviour, risk is high because consumers must be educated, and it is difficult to assess whether the education will have the desired effect. New-to-the-world products diffuse slowly through the population because they often require a change in values and habits.

Based on the above, risks related to product development can be classified as 'external and internal risks'. External risks are related to factors outside the control of the institution like issues related to market dynamics including changes in prices and regulatory requirements, competitors' moves and changes in customers' needs and tastes. The institution can mitigate the external risks by obtaining as much information on the market and develop mechanisms to react fast to potential changes in the market conditions or threats from competitors.

On the other hand, internal risks are related to factors that can be controlled by the institution, such as, the process design, organisational structure, allocation of resources, lack of discipline in implementing the process, not having clear strategy or plan, no clear communication and lack of staff knowledge and expertise. The institution should have full control over these issues to be able to put in place all required changes and controls, as discussed above, to ensure successful implementation of the new product development process.

In summary, ensuring successful product development does not mean dealing with risks only by implementing the risk framework and applying all needed risk mitigation tools, it also means that the institutions need to implement all success factors relevant to their business. Ahmed (2011:122) argues that "the factors that reduce the product development risks would require undertaking all the steps that can increase the probability of success". Hence, an efficient process has to recognise the potential risk exposure areas and has to develop structures to mitigate such risk exposures.



2.4 FINANCIAL ENGINEERING

The sophistication of the financial markets has increased dramatically in the recent decades due to globalisation, technology and the invention of new financial instruments that have created new financial markets. According to Zopounidis *et al.* (2008: 201) the process used to innovate these new financial instruments can best be characterised by its ability to numerate engineering solutions to difficult financial problems, which is now known as financial engineering. Kluger and Friedman (2005:1) define financial engineering as "combining or carving up existing financial assets to create new financial products".

The history of financial engineering goes back to the late 1950s according Zopounidis *et al.* (2008: 8), with the work of Markowitz on portfolio selection, followed by Black and Scholes work on option pricing during the 1970s. Their work helped transform the nature of the finance field from descriptive science to an analytic science that ultimately led to the engineering phase of finance by late 1980s. Thereafter, the use of financial engineering to create complex financial products, called derivatives, became a corner stone in financial institutions' strategy to manage the various and complicated risks existing in the financial markets, which are described as "financial instruments for trading risk" (Al-Suwailem, 2006:27). The most common derivatives are futures, options, and swaps.

The early development of financial engineering coincided with the start of the modern Islamic finance in the early 1970s with the setup of the Islamic Development Bank in 1974 and Dubai Islamic Bank in 1975. Yet the first time the notion of financial engineering appeared in the Islamic finance literature, according to Al-Suwailem (1996:64), was in 1990 by Hussein Kotby's book titled as *Financial Engineering for Islamic Banks: The Option Approach*.

2.4.1 Drivers and Objectives of Financial Engineering

The development of sophisticated derivative instruments came, according to Finnerty (2007:240), as a response to the volatility of prices in the financial market. The price volatility affected the financial position of the institution and management resorted to a variety of financial derivatives to reduce or avoid these risks. This view is also supported by Jenkinson *et al.* (2008:338), who argue that "financial engineering



facilitates the transformation and reshaping of risk". Thus its function is to decompose, transfer and pool risks to match the needs of the financial institution. Wirth *et al.* (1995:3) identified the main reasons behind the rapid increase in developing derivatives, which included among others, deregulation of financial services, increased competition between investment banks and the demand on specific financial products which increased the need to use risk management techniques to cope with interest rate fluctuations. Thus, the new instruments allowed financial institutions to restructure their interest rate payment obligations, which, then, were used to enhance corporate value. Therefore, the objectives of using financial engineering can be identified as reducing market volatility, reducing or shifting existing risks and adding value to the financial institution.

Unlike conventional financial instruments that are designed to shift risks, Islamic finance contracts ensure equitable risk sharing between the contracting parties. Thus Islamic financial institutions become risk takers by nature. Al-Suwailem (1996:70) states that "Islamic banks are by construction risk takers, they should be concerned with risk management more than other institutions do". Thus the use of financial engineering becomes essential to ensure successful risk management in Islamic financial institutions. Alasrag (2010:59) argues that "financial engineering challenge is to introduce new *Shari'ah* compatible products that enhance liquidity, risk management, and portfolio diversification".

Furthermore, Jobst and Sole (2012:4) assert that the use of derivatives enhances liquidity management and provides access to cash from capital markets at lower cost. However, the lack of suitable *Shari'ah* compliant risk-transfer mechanisms deprives Islamic financial institutions of these advantages. Thus, while the factors behind using financial engineering in conventional and Islamic financial institutions look the same, the products and the outcome of using the product is different due to the risk sharing nature of Islamic financial principles.

2.4.2 Financial Engineering and Financial Stability

Financial engineering uses advanced methodological tools and quantitative analysis techniques in order to manage the risks that are created by the volatile market



conditions. However, the use of these instruments seems to have increased the market volatility and therefore increased the risk. According to Finnerty (2007:272):

Financial markets have become more volatile in recent years, and firms actively seek ways to hedge their risk exposure. Financial engineers have responded by developing new hedging instruments, such as interest-rate, currency, and credit swaps. These do not eliminate risk. Rather, they transfer it to other parties who are willing to bear it at lower cost.

Accordingly, the use of conventional derivatives led to more volatile markets, which in turn instigated the creation of more complex products to manage the ever increasing market risks.

The underlying problem in this vicious circle is the segregation of risks from real assets to be traded separately. This view is supported by Al-Suwailem (2006: xi) who asserts that "risk is severed from ownership and thus treated as a commodity in itself". Al-Suwailem (2006:98) clarifies further that the structure of the conventional derivatives is based on segregating the risk from the real economic activities. This segregation leads to divergence of the financial sector from the real sector, which is inconsistent with the nature of economic relations and cannot be sustainable on the long run. In addition, conventional derivatives operate by shifting the risk from one party to another. Thus, the use of these instruments does not really reduce the overall risks that exist in the market rather it works on shifting these risks around between the existing players in the financial market, which can lead in some cases to concentration of risk in few institutions that are willing to take these risks. Therefore the initial objective that financial engineering was created for, which was to minimise volatility of the market as stated above, has not been achieved. In fact, using these instruments has led to the exact opposite as evident by the 2008 financial crisis that will be discussed in detail in the next chapter.

Financial engineering, hence, needs to operate in accordance with certain guidelines to ensure that the outcome achieves the desired results not only at the institutional level but also at the market level. Coskun (2011: 6) argues that there is a need for an effective official discipline framework for financial engineering and the current regulation and supervision have failed to do so. Therefore, having a principle-led financial engineering process will help in creating financial products that contribute positively to the stabilisation of the financial markets.



2.4.3 The Process of Financial Engineering

Most of the researches in the field refer to financial engineering as a process that is used to manipulate risks by creating new financial instruments. Topper (2005:3) describes financial engineering as the art of customising risks using certain assumptions regarding the statistical behaviour of equities, exchange rates and interest rates. Al-Suwailem (2006:87) on the other hand describes it as the "principles and strategies for developing innovative financial solutions". The role of the financial engineer according to Hasan (2009:76) involves "creating new instruments or restructure the old ones to generate desirable cash flows from investments - new or existing". A more comprehensive description of the financial engineering process is presented by Alasrag (2010:59), who states that "financial engineering involves the design, development, and implementation of innovative financial instruments and processes as well as the formulation of creative solutions". He elaborates further by describing the outcome of the process to include the creation of "a new consumer-type financial instrument, or a new security, or a new process or creative solution to corporate finance problems, such as the need to lower funding costs, manage risk better, or increase the return on investments".

While the majority of the research and text books discuss financial engineering in relation to derivatives structuring and pricing, financial engineering process can be used in a wide range of financial activities to achieve different objectives. The most interesting examples of financial engineering outside the world of derivatives and financial market are project financing and Islamic banking.

Finnerty (2007:398) asserts the need for financial engineering in project finance "because, in so many cases, the financing structure cannot simply be copied from some other project. Rather, it must be crafted specifically for the project at hand". He also argues that financial engineering can be used in reducing the risks related to the project which is a critical step in project structuring and financing. Ndupuechi (2003:74) states that project financial engineering involves two main processes: the first is related to the use of credit enhancement techniques, while the other is related to creating new financial instruments. The two processes are closely connected, as the success of the overall financial engineering process will rely on the strength of their co-existence in project structures. Credit enhancement refers to the use of different



tools or agreements to enhance the creditworthiness of the borrower which in turn reduces the risk to lenders and therefore lowers the cost of borrowing, while developing financial instruments involves optimising the use of available assets to secure funding from the capital market. Thus, financial engineering can be used to provide optimal financial solution to project finance.

In relation to Islamic banking, financial engineering can provide solutions to enhance liquidity and risk management. Alasrag (2010) argues that applying financial engineering methods to Islamic banking will require full understanding of the risk-return characteristics of the underlying transactions and design a *Shari'ah* compliant solution with suitable risk-return profiles that meet the liquidity and safety needs of the involved parties. Hence taking into account the nature of Islamic financial principles that promote risk sharing methods, Islamic financial institutions can benefit from using the financial engineering process to improve their product development process. One of the areas that can benefit from the application of financial engineering methods is Islamic project financing.

Project finance has two main elements that make it unique in relation to Islamic finance. The first is that each project requires a unique financing structure that has to be developed specifically to meet the needs of the project, while the second is that project financing optimises the use of existing assets in the project to obtain the needed finance. However, the use of financial engineering in Islamic finance has to comply with *Shari'ah* requirements, which necessitates having a framework to control the process; this framework will be discussed in the following section.

2.4.4 Principles of Islamic Financial Engineering

The Islamic financial industry is in its early stages of development and is still facing major challenges, especially in relation to the depth and sophistication of the Islamic capital market. The absence of suitable instruments that can help Islamic financial institutions in managing their risks will lead to concentration of risks in certain class of assets such as real estate. This is supported by Jobst (2007:30), who argues that the need to comply with *Shari'ah* requirements "has traditionally resulted in overdependence on equity and real-estate investment, restricting the potential of risk diversification from a wider spectrum of available assets". Malkawi (2014:42) also



asserts this notion by arguing that "the main economic rationale for derivatives stems from their role in the diversification and transfer of risk, which allows economic agents to reduce funding costs and hedge risks associated with certain transactions". Hence, the use of financial engineering for this purpose will facilitate the development of the Islamic capital market.

The successful implementation of Islamic financial engineering process requires a framework that provides a set of principles that should be followed to ensure that the outcome meets the basic *Shari'ah* requirements, and also to ensure that the solution contributes positively to achieving *maqasid al-Shari'ah*. Siddiqi (2006:1) points out that "the overriding concern in inventing or adapting new financial instruments has been meeting the *Shari'ah* requirements legalistically while the *maqasid al-Shari'ah* (objectives of Islamic law) have not received due attention". Therefore, Kahf (2006:4) provides a set of principles that need to be met by Islamic financial products, summarised in the following points:

- (i) Moral and ethical soundness, which refer to the general values adopted by *Shari'ah* for the benefit of mankind which will prevent the dealings with all items that are prohibited by *Shari'ah*;
- (ii) *Shari'ah* permissibility, which refers to compliance with the specific requirements related to financial dealings including the prohibition of *riba*, *gharar* and *qimar*.
- (iii) Balance, which refers to having balanced obligations on both parties to the contract to prevent excessive loading on either party.
- (iv) Realism or validity, which refers to the requirement of dealing with real assets to prevent interest-based lending and trading of risks.

Kahf (2006:10) elaborates further on the subject by identifying the fundamental financing elements in the Islamic financial contracts which include (i) the use of an asset to justify earning; (ii) the asset must be valuable and capable of generating income; (iii) the return from the deal is earned by virtue of ownership of an asset; (iv) the objective of the transaction must meet the moral and *Shari'ah* requirements.

Based on the foundational principles of Islamic finance, Jobst and Sole (2012:13) provide a set of principles for developing *Shari'ah* compliant financial derivatives, which can be summarised as follows:



- (i) The structure must address a genuine hedging need (not for the purpose of speculation);
- (ii) Ensure certainty of return that should arise from actual ownership of the asset;
- (iii) Comply with *Shari'ah* requirements related to deferment of contractual obligations (to avoid resemblance to future type of contracts);
- (iv) The use of collateralised payment for risk protection should not include provisions aimed at generating unilateral gains from interim price changes of the underlying asset;
- (v) Clarity of contract in terms of objectives and outcome to avoid all prohibited activities including gambling, speculation and to avoid uncertainty;
- (vi) The structure must be used in a manner that contributes to achieve *maqasid al-Shari'ah*.

In line with the foundational and above-mentioned principles, Al-Suwailem (2006:92) identifies four principles for financial engineering, namely, balance, integration, acceptability and consistency. The first two principles are related to objectives behind creating the financial instrument while the latter two are related to the methodology.

- (i) Principle of balance aims at achieving the balance between competitive and cooperative approaches to financial dealings. In other words, there must be a balanced relationship between all parties involved in the transaction in relation to obligations, risks and pay-out;
- (ii) Principle of integration refers to the importance of preserving the fundamental relationship between the financial sector and the real economy sector. This is done by maintaining the integration between the two sectors to avoid both *riba* and *gharar*. In other words, it is essential from *Shari'ah* point of view to maintain the relationship between risks and the assets;
- (iii) Principle of acceptability asserts the general permissibility of all economic and financial transactions except for those prohibited from *Shari'ah* point of view. This principle is essential as it sets the proper environment for innovation and creativity, where everything is allowed as long as it does not cause more harm than good. In other words, the only limitation is the set of prohibitions provided by *Shari'ah*, other than that all possibilities are open;



(iv) Principle of consistency advocates the importance of conformity to both form and substance in Islamic financial transactions. In other words, the form and substance of any Islamic financial instrument must be consistent with each other. Therefore, new financial instruments will be subject to two tests. The first is to ensure that the substance of the new financial instrument (including the asset, the structure, the objectives and the features) are acceptable. If the substance is acceptable, then the second test will be to ensure that the form of the financial instrument (including the legal agreement, processes and procedures) are acceptable. The instrument has to pass both tests to be satisfactory.

The different sets of principles provided by various contenders have dealt with wide range of issues, but the main focus was on two main areas. The first is in relation to safeguarding the fundamental relationship between the assets, the risk and the return related to the deal. While the other was in relation to avoiding the actions and contracts that are prohibited by *Shari'ah*.

2.5 CONCLUSION

The first part of this chapter provides an overview of the Islamic financial industry including the main differences between Islamic financial industry and their conventional counterpart. This is followed by a critical review of the processes of product development in general and processes pertaining to Islamic financial institutions in particular. The review discussed also that the unique nature of Islamic financial products requires the processes of product development and financial engineering to take into account the relevant *Shari'ah* requirements, which is needed to ensure that the final product is compliant not only with *Shari'ah* requirements but also with *maqasid al-Shari'ah*.

In the last part of this chapter, the concept, history and the process of financial engineering are discussed as well as the role that financial engineering can play in the stability and the development of the economy. The process of Islamic financial engineering is explored with focus on establishing the principles of Islamic financial engineering.



CHAPTER 3

THE FINANCIAL CRISIS AND FINANCIAL ENGINEERING

3.1 INTRODUCTION

During the last century the world witnessed many financial crises hitting different countries. Until recently it was thought that these financial crises would only have severe impact on developing countries, however, evidently this is not completely true. Although the developed countries have, in the recent years, significantly increased the sophistication of their financial systems and improved the macroeconomic stability to mitigate the risk of emergence of financial crises, this has only helped in reducing the likelihood of the occurrence of financial crisis, but has not completely eliminated it.

It was also believed that the liberalisation, development and growth of financial markets and instruments would spread the risks across the advanced economies and eventually this would decrease the chance of occurrence of systemic crises. On the other hand, many also believed that the impact of a crisis, when it occurs, would be more severe than what was generally assumed.

It is evident now that the frequency and the severity of the financial crises have increased and it is no longer impacting only developing countries, but it has actually hit the heart of the developed world; as in the recent financial crisis. The distinguishing feature of the current financial crisis is that it originated in a developed economy, that of the United States of America, as compared to the other crises of the last half-century. (Truman, 2009 as cited in Haneef & Smolo, 2010:2)

The 2008 financial crisis was similar to the previous ones in many ways but it was also different not only by its impact, magnitude and wider outreach but also by the identified new factor that had a huge contribution to the creation of the crisis. This new factor was the financial engineering of new products. Blundell-Wignall (2007:30) wrote when the first signs of the crisis started to appear:



Financial innovation and increased leverage had many benefits. For example, home ownership has spread to lower income households. Corporate restructuring has facilitated productivity growth. The growth of structured products, as a part of this process, also promoted risk transfer and dispersion. However, structured products have also played a significant role in the current turmoil, as delinquencies and defaults have begun to rise in the underlying mortgages.

Financial engineering, thus, played an important role in the recent financial crisis where complex structures were used to create new products that were difficult to understand, value or sell. Taking into account that the ultimate objective of financial engineering should be increasing the efficiency of the financial system by reducing transactional costs and increasing liquidity in the market, the incorrect implementation of financial engineering, especially where the new instrument is designed to avoid regulations in order to achieve more profit, might lead to devastating consequences on the economy as we saw in the recent financial crisis. In addition, greed played a vital role in the drive to create such financial instruments and transactions, where the main objectives were making more money, increasing market share and securing good bonuses. In Deloitte's 2008 report on risk management, Hida, and Baret, mentioned that "profitability was the main driver behind product innovation and product complexity" (2008:8). This indirectly relates greed to the use of legitimate financially engineered products that caused the demise of the system.

Similar to previous crises, most of the researches concentrated, understandably, on the possible ways to prevent such crisis from happening again. The suggestions included increasing the capital requirements, improving risk measurements, reforming corporate governance, breaking big banks into smaller entities to make sure that a potential bank's failure does not take the whole system down (Freixas, 2010). However, all these solutions did not really tackle the main reasons that led the bankers to behave in a way that caused the crisis.

Governments and policymakers have always used financial crises as opportunities to improve the operation and the efficiency of the financial market by introducing new legislations that are usually tougher than existing ones. However, it is obvious by now, after so many crises and so many new rules, that adding tougher regulations might deal with one issue but does not solve the entire problem. It is rather the scope, the type and the quality of the regulations, which are important, not their harshness.



A new approach towards regulatory reform is hence required to break this cycle of financial crises with the objective of protecting the individual, the family as the main unit of the society as well as the whole community and the state, all at the same time. Based on this understanding, a divine source will be the best option to provide the framework required for designing the ideal set of regulations. Taking into account that Islam is the last divine religion revealed by God, Allah, with normative principles relating to economic, political and social rules (alongside the spiritual aspects), it is more likely that such principles can help to develop certain frameworks, regulations and legislations that can enhance the current environment and remove the root causes of the financial crisis. In particular Islamic epistemological methodology, as expressed through objectives of Shari'ah or 'maqasid al-Shari'ah', provides the principles and the necessary frameworks to create better regulations, shape the economy and the financial system, and to enrich the lives of individuals and the humanity at large. Therefore, "The global financial crisis provided us with an opportunity to make things better, and the Islamic financial industry should take a leading role in doing so" (Haneef and Smolo, 2010:23).

The chapter examines the 2008 financial crises as a case study to determine the main factors, including the role that financial engineering and product development played in creating the crisis. Finally, the chapter focuses on the approach that could possibly be the solution to eliminate, or at least reduce the frequency and scale of future financial crises.

3.2 REASONS OF FINANCIAL CRISES

Many economists, including, among others, Allen and Gale (2007), Mishkin (2005), Calvo (2009), Pitlik (2010) and Reinhart and Rogoff (2009), have worked on analysing and examining previous financial crises with the objective of establishing their main causes in order to prevent these crises from happening again and again. In most cases, researchers have different opinions on the main reasons and the drivers behind each specific financial crisis. However, they seem to agree that usually, there are variable reasons that correlate to the formation of each specific crisis. Some of these reasons will be direct while others contribute indirectly. The outcome of these researches also identified some common factors that were found in almost all previous financial crises. However, they also emphasise the fact that although, there are some



common reasons associated with most of these crises in some way or another, each of these crises is unique in terms of the combination of reasons that created it.

In extracting and summarizing the findings of researchers, it seems that the most common reasons behind the financial crises are as follows:

(i) Leverage;

- (ii) Regulatory failure;
- (iii) Speculative attacks;
- (iv) Contagion effect;
- (v) Imbalances in the business cycles;
- (vi) Human behaviour: including irrational behaviour (as a result of fear and panic) and improper human behaviour (like moral hazard, fraud, greed and corruption).

The above-mentioned reasons may seem wide spread and diverse; however, it can be argued that if those reasons are traced back to their sources, they can be easily reclassified into two main categories, namely: regulations and human behaviour.

(i) Regulations

Deregulation, the lack of proper regulations and the lack of proper governmental monitoring can be classified under regulation, and the presence of either of these factors can open the doors to the creation of new products that lead to high leverage as the 2008 crisis has revealed.

Moreover, the lack of regulation seems also to play an important part in creating the crises, as after each one the regulatory framework is usually tightened, with the objective of preventing the same crisis from happing again.

The lack of proper regulations can lead to speculative attacks that can create a financial crisis or magnify its impact on the economy, which can be prevented or at least reduced by having proper regulations in place. A very good example on this is



the ban on short selling imposed by the US and other European countries during the last financial crisis (Morgut, 2012).

(ii) Human behaviour:

The irrational and irresponsible behaviour like panic and fear are there in all cases of banking runs leading to banking crises. The same is true in terms of debt crises, as the irresponsible behaviour seems to be the main reason behind increasing the levels of individual and national debt. In addition, we learnt from the 2008 financial crisis that moral hazard, greed and fraud can be significant reasons contributing to the creation of one of the biggest financial crisis to hit the global economy. Argandoin (2012: 3) states that "it has often been argued that this is an ethical crisis, because moral errors may explain why economic and political failures can lead to situations of crisis".

3.3 THE 2008 FINANCIAL CRISIS AND FINANCIAL PRODUCT DEVELOPMENT

Many economists believe that the 2008 financial crisis, also known as the 'Great Credit Crisis', the 'Global Financial Crisis' and the 'Great Recession', "is undoubtedly the greatest one since the Great Depression" (Aydin, 2010:2).

The 2008 crisis did not only affect banks, stock markets and currency markets in the country where it originated (US), but it was rather a universal crisis with a much wider outreach evidenced by the fact that many European countries (Greece, France and Poland) have witnessed several episodes of social unrest in the streets while other countries like Iceland and Ireland became near bankrupt. The crisis also led to the incumbent governments loosing re-elections in the UK, Spain, Czech Republic, Latvia and Hungary.

Although the 2008 financial crisis is considered to have led to a global recession, Rogoff (2011) argues that it is more of a 'Great Second Contraction', where the first 'Great Contraction' refers to the 'Great Depression' of 1930. Many researchers, including, among others, Almunia *et al*: (2010), saw great resemblance in the effects of the two crises, namely: the decline in global manufacturing in the 12 months following the crises, the fall in the global stock markets, world trade destruction and the response of the monetary and fiscal policies.



As usual, there were many different theories to establish the reasons that created this crisis and most analysts followed the normal routes used to analyse the previous crises. However, this time there has been a new distinctive reason that, for the first time, made it to the list of reasons behind financial crises and that is 'financial engineering'. The US Senate Report (2011:8) pointed out that "in the years leading up to the financial crisis, large investment banks designed and promoted complex financial instruments, often referred to as structured finance products that were at the heart of the financial crisis as they were too complex and lacked transparency, making it difficult to understand neither the structures of their underlying assets nor the pricing. It can be argued that the initial point of departure in financing and the last point of usage in the financial deals were entirely lost.

The reasons behind the crisis and the way it started have permanently changed the consensus view of banking risks, contagion effect and their implications on banking regulation. Almost everyone agrees now that risks were mispriced and although they were spread worldwide, they were concentrated in the heart of the investment banking sector and were amplified by the instability and fragility of financial institutions.

3.3.1 Main Reasons

Like any other crisis, the emergence of this crisis was due to a number of factors. Many economists have offered theories about how the 2008 financial crisis emerged, however, the US Senate Report (2011) determined that there were four main factors leading to the financial crisis, namely (a) high-risk lending; where tremendous amounts of money were invested in high-risk, poor quality mortgages (b) regulatory failure; with the failure of the office of Thrift Supervision to stop the unsafe and unsound practices of banks (c) inflated credit rating, where credit rating agencies masked the risk of many mortgage related securities due to conflict of interest that placed achieving market share and increased revenues ahead of ensuring accurate rating; and (d) investment banks' abuses where complex, high-risk financial products were engineered, sold and traded by the major US investment banks.

Those factors can be classified, as discussed before, under two main categories, being regulations and human behaviour.



3.3.1.1 Regulations

The direct reasons behind the crisis were the bursting of the US housing bubble followed by high default rates on subprime and other mortgages. However, the reason behind the housing bubble was the unregulated mortgages and credit boom that were pushed by the low interest rate. As a result, commercial banks increased their borrowing and used newly engineered financial derivatives to securitise the originated mortgages.

Both financial derivatives, which were traded solely over the counter (OTC), and subprime mortgages, were unregulated activities. It is now clear that the combined effect of these two unregulated products is actually one of the main causes that made this crisis one of the worst crises in history.

3.3.1.2 Human behaviour

Many of the factors that have contributed to the creation of the financial crisis can be traced back to human behaviour. These include: the financial engineers' behaviour, the rating agencies' behaviour, the greed of investment bankers and finally moral hazard the corruption of both brokers and property valuers.

3.3.1.2.1 The behaviour of the rating agencies

There are different views about the behaviour of the rating agencies; some perceive the issue as a human error as the individuals who worked on these sophisticated derivatives did not actually understand the products and the risks associated with them. Others stated that this was a moral hazard situation, where the bankers wanted the highest rating and were willing to pay any price for it. The rating agencies saw the opportunity and provided the requirements to grant the highest rating by adding credit insurance using the Credit Default Swap (CDS) so that prudent investors would be satisfied. Thus, changing the objective of the rating process from providing an indication on the risk associated with the product to actually getting involved directly in the engineering of the product to make it look like a safe investment. The US Senate Report (2011:26) pointed out that "those credit ratings gave a sense of security to investors and enabled investors like pension funds, insurance companies, university



endowments, and municipalities, which were often required to hold safe investments, to continue to purchase mortgage related securities".

3.3.1.2.2 Financial engineers' behaviour

The ultimate objective of financial engineering should be the enrichment of the economy. However, the incorrect implementation of financial engineering, especially where the financial engineers design new instruments to avoid regulation, might lead to devastating consequences on the economy as was the case in the 2008 financial crisis. "Banks and other agents innovate to circumvent regulation and boost returns by taking greater risks" (Carmassi *et al*, 2009:980).

The US Senate Report (2011:17) indicated that:

The last decade has witnessed an explosion of so-called "innovative" financial products with embedded risks that are difficult to analyse and predict, including collateralised debt obligations, credit default swaps, exchange traded funds, commodity and swap indices, and more. Financial engineering produced these financial instruments which typically had little or no performance record to use for risk management purposes.

In this scenario, the mortgage lenders and investors were connected through the investment bank, which obtained the mortgages and added them up into collateralised debt obligation (CDO). These CDOs were sliced and repackaged again using different tranches to reflect different risks. The outcome was different CDOs classified into different risk classes.

3.3.1.2.3 Greed of investment bankers

Because of the profitable results of leveraging, investment bankers became greedy and pushed all boundaries to increase their mortgage portfolios and thus increase their bonuses. They assumed that house prices will continue to increase and as long as house prices (and therefore the value of the underlying collateral) appreciated, the extension of credit in this manner could continue unhindered by any concerns regarding the ability of customers to repay the debt.

They also thought that in case of a borrower defaulting, a house would become the asset of the bank. Then that asset could be sold for a higher price than it was initially



bought. However, as more and more borrowers defaulted, the supply of houses exceeded the demand and house prices started to fall.

The top employees of the five largest investment banks divided a bonus pool of over \$36 billion in 2007. Leaders in the financial sector argued that in fact their high returns were the result of innovation and genuine value-added products, and they tended to grossly understate the latent risks their firms were taking. (Reinhart and Rogoff - 2009:210)

3.3.1.2.4 Moral hazard and the corruption of brokers and property valuers

Moral hazard and corruption were evident in the brokers' behaviour; as they were paid on completion for each deal. They had an incentive to complete the deal regardless of the consequences and whether the borrower would be able to repay the debt or not. They went even further by bribing the property valuers to overestimate the prices to get their customers more money.

The fatal combination of all of the above human behaviours was one of the main reasons behind this unprecedented financial crisis. Adding new regulation (even if it is the correct type of regulation) will only resolve one part of the problem. The solution should also be able to handle the problems caused by the human behaviour to ensure that we can propose a complete solution that helps to prevent these crises from happening again and again.

3.4 ISLAMIC PERSPECTIVES ON THE FINANCIAL CRISIS

The effects of the 2008 financial crisis spread to most types of financial markets in almost all countries around the world. However, the impact of the crisis was different from one country to another. One of the financial sectors that was not hit directly by the crisis was the Islamic banking sector. In other words, "the Islamic financial services industry has thus been in a relatively stronger position to weather the global financial crisis, demonstrating its robustness as a stable form of financial intermediation" (IFSB, 2010:14). However, as the SESRIC Report (2009:3) states "although Islamic banks and financial institutions were not entirely immune to the global economic crisis, they have proved to be somehow sheltered from the crisis".

The experience during the 2008 global financial crisis demonstrated that Islamic financial Institutions were more resilient to the impact of the financial crisis than



conventional financial Institutions. The main reason behind this should be attributed to the fact that Islamic financial institutions have to follow the stringent *Shari'ah* rules in their transactions and operations which emphasise, among other features, on the prohibition of interest (*Riba*) and limitation of uncertainty (*Gharar*), excessive risktaking and carrying out transactions for the purpose of speculations.

All of the above mentioned prohibited actions under the Islamic finance rules were present in one way or another as factors behind the 2008 financial crisis. Figure 3.1 illustrates the growth of the interest rate derivative values right to the point immediately preceding the outburst of the financial crisis. This is understandable as derivatives are seen as instruments used mainly to carry out excessive speculation, and, as discussed before, derivatives, being a form of structured products, were one of the main reasons that led to the 2008 financial crisis. In general, Islamic ethical principles in relation to financing prevent derivative-oriented financial transactions.





Source: Turner (2010:10)

Nevertheless, as Islamic financial institutions operate within a global financial system, they have not been completely insulated from the recent economic and financial shocks. For instance, the Islamic financial industry is considered by many to be less risky due to having its financial transactions backed by physical assets; but on the other hand, Islamic financial institutions may be more vulnerable to fluctuations in the



mortgage market, given their high concentration of activity in the real-estate sector compared to conventional financial institutions. Figure 3.2 below illustrates how the effect of the financial crisis on Islamic banks was not as adverse as it had been on conventional banks, supporting the notion that Islamic financial economy is more stable and resilient to financial crises. It can be argued that this resilience is due to the restrictive controls and governance imposed by *Shari'ah* principles and rulings, by which Islamic banks and financial institutions must abide.

Figure 3.2: Changes in Market Capitalisation, Net Profit, Assets and Equity – Pre and Post Crisis



Source: Islamic Finance and Global Financial Stability Report 2010 (2010:35)

The same issues were emphasised by one of the top scholars in the field of Islamic finance, Justice Mufti Muhammad Taqi Usmani (2010:34), where he wrote

It is incorrect to claim that they were not affected at all, but it is correct to say that they remained pretty safe from the horrors faced by conventional financial institutions. The reason is obvious. In order to be compliant with *Shari'ah*



(Islamic law) they are bound to remain at a distance from interest, derivatives, short sales and sale of debts.

In analysing the reasons behind the crisis, Usmani (2010: 31-34) provided four factors that worked to create the crises:

(i) Diverting 'money' from its basic function to act as a medium of exchange, and making it an object of trade to an unlimited extent, which gave birth to the greed of making money out of money, and turned the whole economy into a balloon of debts over debts,

(ii) Derivatives were one of the basic causes of the financial problems,

(iii) The sale of debts was one of the most prominent causes of this crisis, and

(iv) Short sales and blank sales of stocks, commodities and currencies is the basic factor that makes speculation disastrous for the smooth operation of real commercial activities.

Efforts to deal with the financial crisis from an Islamic perspective have been suggested under three main streams: (i) injecting liquidity into the financial market; (ii) introducing stricter regulation to the financial markets; and (iii) nationalising troubled financial institutions.

Although these measures might help on the short run, on the long run, a new financial crisis will be inevitable. Thus the solution according to many Islamic finance researchers will be in changing the role of interest bearing debt, adopting a radically different stance towards risk management and restructuring, incentives by influencing peoples' motivation. Furthermore, in order to prevent the recurrence of such financial crises in the future, Chapra, (2008, as cited by Haneef and Smolo, 2010: 13) suggested

A combination of three forces: (i) establishing moral constraints on greed for maximum profits, wealth, and consumption; (ii) the need for market discipline that will exercise a restraint on leverage, excessive lending and derivatives; and (iii) reform of the system's structure, combined with prudential regulation and supervision, to prevent crises, achieve sustainable development and protect social interests.



Taking into account the analysis of Usmani (2010) and the approach proposed by Chapra (2008) and based on the findings of this chapter that all reasons behind the financial crises fall under two main categories, namely regulations and human behaviour, it can be argued that it may be possible to utilise the *Shari'ah* rules to propose a comprehensive approach to prevent the recurrence of such financial crises, which can be applied to all financial markets (both conventional and Islamic). The Islamic-based approach will focus on solving the issues associated with the regulatory framework and its applications and the human behaviour with its impact on the market place, both elements are essential to ensure that the outcome of the product development process will contribute positively to the growth and stability of the financial markets.

3.4.1 Regulatory Framework from Islamic Perspective

The main objectives of the regulations are to provide discipline in the financial market and to protect all stakeholders. It is clear now that, with the continuous occurrence of financial crises, the different approaches used by the regulators in the advanced economies are still not successful. Hence the new approach needed should take into account different factors that are summarised in the following sections.

3.4.1.1 The scope of the approach

In order to break the cycle of continuous financial crises, the new legislative approach should have wider objectives that take into account the simultaneous protection of the individual, the family, the whole community and the state. Looking closely, we can see that these legislations are found within Islam and its teachings, where the objectives of *Shari'ah*, or *maqasid al-Shari'ah*, provide the principles from which the new legislations can be derived and implemented. However, considering the current malpractices of the market, using such aspirational rules in the operations of financial institutions may require the role of an enforcing power, such as the regulators.

3.4.1.2 The prohibition of malpractices in the market

Currently there are many malpractices in the financial markets that are not only widely-accepted, but are also regulated, an example of which is 'short selling'. Short selling is a common practice in stock exchange markets where brokers borrow share



stocks from their real owners and sell them off in the market (when the share prices are going down) betting/anticipating/planning to buy the stock of same shares at the end of the day to close their trading positions and return the stocks back to their real owners while generating an income for themselves from the intraday trading, hence the objective of trading is to make profit. Morgut (2012:48) describes short-sellers as those who "act on the pessimistic forecast, yet who do not own the security which they could sell long. Therefore, they borrow it and then sell it short, expecting that the stock price will be lower when they return the security in order to close the position".

The normal way of making profit is to buy shares, own them and then sell them for a higher price and generate profit. The increase of the share price usually reflects that the company is performing well or that there is a demand for such share and the profit reflects the normal dynamic of the market. When someone uses short selling to make profit, they do this only on the basis of speculation that the price of the shares will go down. When many brokers target the same shares due to speculation or rumours, they drive down the share price unfairly even if the company is performing well. In this course of events, they can damage the company itself and its shareholders with the objective of making money for themselves.

In the midst of the 2008 financial crisis, the financial authorities in the US and many European countries including Germany and the UK interfered rightly in the market and imposed a temporary ban on short selling due to the damage caused by this practice to the market and to financial institutions alike. Morgut (2012:46) argues that "the fears of short-sellers in the aftermath of Lehman Brothers fall led to the activity being banned for the financial stocks in the US and across Europe. Most recently, the intensification of sovereign debt crisis once again prompted the regulators to significantly limit short-selling". However, the ban was lifted a few days later when the markets stabilised. This example highlights one of the main problems with the current legislative approach where the regulators know and understand the impact of this malpractice and still consent to its continuation.

Looking at this through Islamic financial principles, Islam prohibits this type of practice by stopping people from selling what they do not own. The important point here is that regulations should cater for everyone using principle-based rules with



harmonised approach and should not be for the benefit of one party versus the rest of the stakeholders.

3.4.2 Human Behaviour from Islamic Perspective

The human behaviour and the way humans interact with each other is the biggest force that drives any market place. Bad behaviours can be manifested in different ways including greed, corruption and recklessness as discussed above. As such, the concentration of bad behaviour can push the market into the wrong direction. In relation to the 2008 financial crisis, Argandoin (2012:3) states that "it has been said, over and over again, that the cause of the crisis was greed, defined as a selfish and excessive desire for more of something (such as money) than is needed". Of course it will be difficult to discuss all different types of behaviour and their impact on the financial markets. Therefore, with regards to the 2008 financial crisis, the focus is on financial engineers' behaviour as well as greed and corruption, which are explored in the following sections:

3.4.2.1 Greed and corruption

Traditionally, regulators endeavour to deal with adverse human behaviour through imposing penalties and sometimes punishment for certain activities such as corruption and insider trading. The scope of this approach, however, is limited and does not capture or deal with most of other related bad behaviours like greed.

The limitation in the scope of the above approach means that the door is open for people with potentially bad behaviour to act without any measure to prevent or to punish their actions. Aydin (2010:20) therefore states that "Greed was the driving force" in his description of the bankers' motive to design and sell the derivatives products that led to the crisis.

An effective solution can be developed by implementing a comprehensive approach using the Islamic teachings based on preventive methods alongside the deterrent of penalties and punishment. In this solution, the objective should not be about enforcing certain behaviour on everyone, but rather about directing people away from bad behaviour. Aydin (2010:23) emphasised the importance of such approach by stating "Islam does not suggest an authoritarian system which makes decisions on behalf of



the people for their best interests. Rather, Islam allows for government regulations and restrictions to prevent irrational and irresponsible behaviours". A good example of such regulation is the recent regulation prepared by the UK government regarding bankers' bonuses, which allows the authority to require top executives and managers at banks operating in Britain to get their bonuses clawed back for up to 10 years after any finding of misconduct under new rules. As reported by the Wall Street Journal (2015), the chief executive officer of the UK Financial Conduct Authority said that "this is a crucial step to rebuild public trust in financial services, and allows firms and regulators to build long term decision making and effective risk management into people's pay packets".

This approach, hence, is in line with *maqasid al-Shari'ah* and therefore, a new comprehensive regulatory approach based on *maqasid al-Shari'ah* will provide a more suitable framework for the financial market regulation. This approach is important as it will capture all different types of adverse behaviour and will deal with them in the right way.

3.4.2.2 Financial engineers behaviour

Financial engineering should be utilised to enhance the efficiency of the financial market by designing and customising financial products to meet the specific needs of a diverse range of customers. Engineered financial products can therefore, cater to the needs of different investor groups. Risk can be shifted to those who wish to bear it, and it can be widely spread among many market participants. Thus financial engineering is a tool and the behaviour of the engineers will determine whether a new engineered product will serve for the benefit of the market and all stakeholders or it will benefit one party at the expense of other stakeholders.

With respect to the recent financial crisis, the problem arose when the financiers used financial engineers to design new instruments to avoid regulations. Argandoin (2012: 6) argues that "the crisis also entailed other problems, such as 'regulatory arbitrage', which moves operations to countries with lax controls or changes the nature of operations to circumvent the regulations". Thus the main problem was in the main framework controlling the process of product development. No doubt those financial crises will continue to happen as long as there is no control over the way financial



institutions design and introduce new products and services. Especially where the main and maybe the only objective of these products is to maximise the profit of the financial institution in a way that contravenes or undermines the overall objectives of the financial system.

In terms of policies, this means that the regulators will have to regulate the way the products are being structured and provide individual approval for each product. Under current practice, for example in the UK, the FSA (2012) (the UK's former financial regulators) has put some guidelines on how the financial institutions should develop their products. This involves, among other things, undertaking market research to establish that there is a demand for the new proposed product and to ensure that the charges imposed by the financial institution are fair. Although this approach is a good start, it has some flaws:

- (i) The objective of this approach is to protect customers as individuals but does not look at the bigger picture of protecting the families and the society as a whole;
- (ii) This approach applies only on retail banks and does not apply to investment banks (where the problem started in the recent crisis) and where the failure of one large investment bank might be as risky as the failure of many retail banks;
- (iii) The criteria used for approval of new products do not take into account the socioeconomic dimension and the impact of the products on the whole financial market and the economy.

It should be noted that the financial engineers' bad behaviour did not only cause difficulties, but it was one of the main contributors in concentrating the bad behaviour in the market, as "innovation did contribute to reckless credit expansion and investments, but without lax money and excessive leverage, reckless bets on asset price increases would not have been possible" (Carmassi *et al.*, 2009:977).

Thus the approach to solve the issues related to financial engineers' behaviour will be by ensuring effective regulations and supervision that take into account not only protecting the customers, but should also extend the application of the regulations to ensure that introducing new products should not have adverse impact on the market, the economy and the society as a whole.



3.5 THE WAY FORWARD

Regulators around the world have to make critical choices when it comes to designing policies and regulations after a crisis. Freixas (2010:378) argues that there are two possible approaches, where the first entails that financial crises are unavoidable accidents that are bound to happen frequently and as such all attempts should be made to minimise their effects. The other approach dictates that financial crises are manageable events and all efforts should be made to avoid their coming back over and over again.

Although regulators have used different methodologies to try to prevent financial crises from happening repeatedly, these treatments, obviously, were not as effective as the regulators were hoping as the frequency and effects of theses crises are increasing time after time. The main problem usually with most of these approaches is that they focus on the obvious reasons behind the crisis, rather than looking at the bigger picture and digging underneath the surface to get to the roots of the problem. Taking into account that the current economic system is heavily based on interest and interest-based financial transactions, it can be argued that part of the problem is 'interest' and 'interest-based financial transactions'.

Many economists have criticised interest-based financial systems where the wealthy get wealthier at the expense of the already less fortunate. Haneef and Smolo (2010:11) pointed out that "It is due to the interest-based system that we have the unjust and uneven distribution of wealth that damages the interests of common people". The notion of interest has been criticised by Western Economists also such as James Robertson, where he writes:

The pervasive role of interest in the economic system results in the systematic transfer of money from those who have less to those who have more. Again, this transfer of resources from poor to rich has been made shockingly clear by the Third World debt crisis. But it applies universally. It is partly because those who have more money to lend, get more in interest than those who have less; it is partly because those who have less, often have to borrow more; and it is partly because the cost of interest repayments now forms a substantial element in the cost of all goods and services, and the necessary goods and services loom much larger in the finances of the rich. When we look at the money system that way and when we begin to think about how it should be redesigned to carry out its functions fairly and efficiently as part of an enabling and conserving economy, the arguments for an interest-free,



inflation-free money system for the twenty-first century seem to be very strong. (cited by Usmani, 2010: 19-20)

A relatively similar view is shared by the Nobel Prize Winner, French economist Maurice Allais, [who] believes that the way out of such crises is best achieved through structural reforms through, adjusting the rate of interest to 0% and revising the tax rate to about 2%". (Alasrag, 2010:3)

Based on the above, the new comprehensive approach, in an aspirational sense, should be principle-led and adopt a preventive approach instead of remedial. The new approach should take into account the following:

- (i) Prohibition of any excessive risk taking activities;
- (ii) Prohibition of any speculative activities;
- (iii) Prohibition of short selling;
- (iv) Prohibition of interest.

Although (from a conventional perspective) all these activities have some benefits at some level, the scale of the damage they cause outweighs any potential benefit for the few. This approach encompasses the main principles in *Shari'ah* and uses the same preventive methodology introduced by Islam in prohibiting alcohol and gambling.

The scope of the regulation should cover all different activities by all financial institutions and should not exempt any type of activity or institution. It should specifically refer to requirements for financial engineering and issue guidelines on the product development process which can include:

- (i) The new product should have a purpose besides making profit that contributes to the welfare of the community;
- (ii) The product should fulfil an actual need for an individual (in the case of retail banking) or for an institution (in the case of corporate);
- (iii) The financial product should be used as a means to grow the economy and lending money to charge interest should not be the objective of the process;



(iv) The product should ensure fairness to all stakeholders in its mechanism and pricing.

Using this preventive approach where the rules can be extracted from the principles of *maqasid al-Shari'ah* besides the normal remedial approach (which includes penalties and punishment), regulators can build a comprehensive approach for principle-led regulations where financial institutions are given a set of rules to follow by way of self-discipline. Thus achieving two objectives, namely (i) a more comprehensive regulatory approach monitored internally through a set of governance policies and procedures to ensure that the institution does not break the rules, and (ii) self-discipline in relation to the implementation of the institution's product development policies and procedures where, for the benefit of the institution, employees will be asked to avoid adverse behaviour and design the financial products to achieve the required benefit for the customers and the society as a whole and not only for the benefit of the bank.

3.6 CONCLUSION

Financial crises happen occasionally due to various reasons, despite the continuous efforts exerted by regulators, economists and financial institutions to avoid their recurrence. Different reasons, or combinations of reasons, may contribute to the creation of the financial crises; however, it can be argued that such reasons can be traced back to being either a result of human behaviour or regulatory failure.

The 2008 global financial crisis was one of the biggest financial crises that the world has witnessed. It created a lot of question marks in terms of products, ethics, human nature and regulations. It is clear now that complex structured products and derivatives played a major rule in the creating the crisis, where high levels of greed and corruption combined with improper regulation created a perfect mix for the crisis.

It can be further argued that the relapse of the financial crises over and over again is due to the fact that the interest-based financial system is built on man-made regulations that are short of fulfilling the needs of all parties. Thus a new type and scope of legislation is required to break the cycle of financial crises and provide better protection to all stakeholders in the financial market including individuals, families, societies and the state. The basis of this new approach, in an aspirational sense, can



be found within Islam and its teachings where the principles of *maqasid al-Shari'ah* can be used to draft and implement this new type of legislation.



CHAPTER 4

MAQASID AL-SHARI'AH AND FINANCIAL ENGINEERING

4.1 INTRODUCTION

Located within the ontological base of Islam, the Islamic law (Shari'ah) has developed through centuries to provide a complete and integrated code of conduct to regulate all aspects of the lives of Muslims. In iterating this, Bin Zagheeba (2001:3) states that "looking closely at Shari'ah that God Almighty "Allah" revealed to all mankind, we come to find a very clear fact; God revealed His laws to humans in order to guide them into establishing their benefits and to reach happiness in this life and the hereafter". A wider meaning of Shari'ah is described by Laldin and Furqani (2012:3) stating that Shari'ah "covers the entire spectrum of Islamic life, including belief, morality, virtues and principles of guidance on economic, political, cultural and civilizational matters that concern not only the Muslim community but all of humanity". In other words, Shari'ah provides a comprehensive framework that encompasses all areas of individuals' lives as well as the whole society to ensure their well-being, not only in this life time but in the hereafter as well through the *falah* or salvation process. Thus, Shari'ah incorporates a set of legislative rules that are everlasting and yet flexible enough to adapt to change. Although basic rules, such as creed, worship, morality and ethics remain unchanged, their interpretation in everyday actions including business, science, politics and other worldly activities are constantly developing but remain within the main framework of Shari'ah.

Since the early days of Islam, Muslim scholars worked on analysing and understanding the rules of *Shari'ah* which then became a complete science of Islamic jurisprudence or '*fiqh*' with two main branches: jurisprudence of ritual worship or *fiqh al-ibadat* and jurisprudence of civil transactions or *fiqh al-mumalat*. The ongoing developments of *Shari'ah* science resulted in the development of *Shari'ah* objectives or *maqasid al-Shari'ah* as a methodology. This development was mainly driven by



the expansion of the Islamic civilisation and the emergence of more complex issues that needed to be addressed with the complexities of individual life and societies.

With the development of *maqasid al-Shari'ah*, Muslim scholars recognised that the main objective of *Shari'ah* is to promote the well-being of all mankind. In this context, they outlined the basic rules that would help the individuals to achieve this objective through the safeguarding of faith or *din*, life *or nafs*, intellect or *'aql*, offspring or *nasl* and wealth or *mal*. Along with the development of *maqasid al-Shari'ah*, the concept of benefit or public interest or *maslahah* also surged in a methodological attempt to understand the reasons behind certain rules and to be able to implement *Shari'ah* on new issues facing individuals and society on a daily basis.

With the growth and the development of Muslims' community through the centuries, Muslim scholars continued to use *maqasid al-Shari'ah* and the concept of *maslahah* as the main reference to establish new judgements or *fatwa*. This approach continues to be the prominent approach until now.

In the recent years, with the development of Islamic banking, the main principles of *Shari'ah* have been used as a foundational framework for establishing the rules and regulations for the new Islamic financial industry. However, the context of *maqasid al-Shari'ah* has not been really integrated within the Islamic financial industry, resulting in some accusation to the Islamic financial products of being *Shari'ah* compliant by form only and not by substance.

Laldin and Furqani (2012:6) reflect on this issue by stating that:

Shari'ah in Islamic finance does not halt at what contracts are permitted or prohibited, what elements should be observed or what mechanisms should be followed to make the contracts legally valid, as per the dominant current discourse in *Shari'ah*-compliant finance. Instead, the maqasid discussion will open up the horizon of raison d'être: why we need to develop Islamic finance in the first place, what goals are to be realized, and in what direction the industry should proceed.

Hence *maqasid al-Shari'ah* can be used to provide a framework for the engineering of new Islamic financial products and at the same time provide the basis on which policy makers can develop new regulations and legislations that take into account the objectives of *Shari'ah* to safeguard the well-being of the society as well as the individuals.



4.2 THE CONCEPT OF MAQASID AL-SHARI'AH

This section introduces the concept of *maqasid al-Shari'ah* by defining its terms and explaining its literal meaning as well as technical application. It also provides chronicles of the development of the concept since the early days of Islam.

The term *maqasid al-Shari'ah* consists of the two Arabic words: *'maqasid'* (plural of *maqsad*) which means the objectives, or end goals while *'Shari'ah'* is the Islamic law that governs all aspects of the lives of the Islamic society and individual Muslims. However, from technical point of view, *maqasid al-Shari'ah* is concerned with the objective, rational or wisdom behind a *Shari'ah* ruling. Laldin and Furqani (2012:3) consider *maqasid al-Shari'ah* in relation to the financial sphere as "the grand framework that provides guidelines and directions for ensuring the realization of *maslahah* (benefit) and the prevention of *mafsadah* (harm) in all financial contracts".

4.2.1 The Historical Development of the Concept of Maqasid al-Shari'ah

Despite the importance of *maqasid al-Shari'ah*, at the early stages of the Islamic society the concept was not given its fair share of interest by Muslims scholars compared to other *Shari'ah* sciences. The detailed concept as we know it today was not developed until the 8th *hijri* century, whereas its roots go back to the days of the Prophet Muhammed.

At the time of Prophet Muhammed, every incident that faced Muslims was addressed by him, being the messenger of God and hence the ultimate guide in the society. Nevertheless, the idea of trying to establish the objective behind certain instructions started developing since that time as Prophet Muhammed gave his companions the chance to evaluate situations and decide on the best action, all underneath his guidance and supervision. Thus, "The history of the idea of speculating a certain underlying purpose, aim, or intent of *Qur'anic* or Prophetic instructions goes back to the companions of the Prophet, as narrated in a number of incidents" (Auda, 2007:9).

After the Prophet, through the development of the Islamic civilizations, and the emergence of more complex issues, the Prophet's companions encountered new problems that did not face earlier, so they had to use their own judgment, based on their understanding and interpretation of the *Qur'an* and the *Sunnah*. In such cases,



different companions had different understandings and therefore, diverse opinions and judgments were inevitable, which led to the development of *ijtihad* or interpretation process. *Ijtihad* is the effort to form new opinions on specific issues, regardless of the outcome being similar or not.

Many companions of the Prophet practiced *ijtihad*, which took different forms like *qiyas*, *istihsan* and *ijma*. Kamali (2008:19) explains that "*ijtihad* happens in a variety of forms such as analogical reasoning (*qiyas*), juristic preference (*istihsan*) presumption of continuity (*istishab*), and even general consensus (*ijma'*)". However, these forms of *ijtihad* were not enough to cope with the span and the complexity of the developing Muslim society; thus, the need for a broader framework that can encompass the principles of *Shari'ah* was one of the motives that helped in the development of the concept of *maqasid al-Shari'ah*.

Towards the end of the third century, the concept of *maqasid al-Shari'ah* started to emerge as a formalised form. Most books refer to Al-Ghazali and Al-Shatibi as the actual founders of this concept. However, Auda (2007) attempted to trace the development of the concept of *maqasid al-Shari'ah* since its early beginnings where he referred to Al-Tirmidhi al-Hakim (d. 296AH/908 CE) as one of the early Muslim scholars to contribute to the birth of *maqasid* as he wrote the first known volume dedicated to the topic where the term *maqasid* was used in the title of the book, *Al-Salah wa Maqasiduha* in relation to daily prayers (*Prayers and their Purposes*). Auda (2007) also referred to Abu Zayed al-Balkhi (d. 322AH/933CE) as one of the early scholars who talked about *maqasid* when he wrote the first known book about the objectives behind transactions called *Al-Ibanah min ilal al-Diyanah* (*Revealing Purposes in Religious Practices*), which was about the purposes behind Islamic juridical rulings.

The theory of *maqasid al-Shari'ah* started to take shape during the 5^{th} *hijri* century where many scholars contributed by establishing the definitions and classification of *maqasid*. Although the most significant contributions, as cited by most literature, were by Al-Ghazali, Al-Shatibi and later from Ibn Ashur, other scholars had also an important role in the foundation of this science. Kamali (2008 and 1999) and Auda (2007) attribute the development of *maqasid* theory in that era to a number of scholars whose contributions can be summarised in the following points:


- (i) "Abu al-Ma'ali Al-Juwayni (d. 478AH/ 1085 CE) wrote Al-Juwayn's al-Burhan fi Usul al-Fiqh (The Proof in the Fundamentals) which "was the first usul treatise to introduce the levels of necessity in a way that is similar to today's familiar theory.... he proposed that the purpose of the Islamic law is the protection for people's 'faith, souls, minds, posterity, and money" (Auda 2007: 17);
- (ii) "Abu Hamid Al-Ghazali (d. 505 AH/1111CE) elaborated on a classification of *maqasid*, which he placed entirely under what he called 'unrestricted interest' (*Al-Maslahah Al-Mursalah*)" (Auda 2007: 2);
- (iii) Al-Izz Ibn Abd Al-Salam's (d. 660AH/1209CE) made "significant contribution to the development of the theory of *al-maqasid* with his book on interests (*masalih*), which he called, *Qawa'id al-Ahkam fe Masalik Al-Anam* (Basic Rules Governing People's Interest)" (Auda 2007: 18)'
- (iv) "Shihab al-Din Al-Qarafi (d.684AH/1285CE) wrote *al-Furuq (The Differences)* where he defined a new meaning for *maqasid* as the purposes/intents of the Prophet himself in his actions Later, Ibn Ashur (d. 1976 CE) developed Al-Qarafi's above 'difference' and included it into his definition of *al-maqasid*' (Auda 2007: 19). "He was also the first to add a sixth item to the existing list of the five essential *maqasid*, namely, the protection of honour (*Al-ird*)" (Kamali, 1999:3)
- (v) "Taqi Al-Din ibn Taimiyyah (d. 728H/ 1327 CE) was probably the first scholar to depart from the notion of confining the *maqasid* to a specific number. He added to the existing list of the *maqasid* such things as the fulfilment of contracts, the preservation of the ties of kinship and respect for the rights of one's neighbours, thus transferring the scope of *maqasid* from a designated and specific list to a completely open-ended list of values" (Kamali, 1999:4);
- (vi) Shams al-Din Ibn Al-Qayyim's (d. 748AH/ 1347 CE) "contribution to the theory of *maqasid* was though a very detailed critique of what is called juridical tricks (*Al-hiyal Al-fiqhiyyah*), based on the fact that they contradict with *maqasid*" (Auda 2007: 20);
- (vii)Abu Ishaq Al-Shatibi (d.790 AH/1388 CE), according to Auda (2007:20), "used, more or less, the same terminology used by Al-Juwayni and Al-Ghazali. [Auda also believed that] Al-Shatibi developed the theory of *maqasid al-Shari'ah* in three substantial ways: first from 'unrestricted interests' to 'fundamentals of law',



second is from 'wisdoms behind the ruling' to bases for the ruling' and finally from 'uncertainty' to 'certainty'".

During the twentieth century a more contemporary approach developed towards *maqasid al-Shari'ah* to address the current issues. (Auda 2008:248) states that:

Ibn Ashur, (d. 1325AH/ 1907 CE), for example, developed *Maqasid Al-Shari'ah* regarding 'preservation of offspring' into 'care for the family' approach. Similarly, 'preservation of honour' evolved into 'preservation of human dignity' and 'protection of human rights'. On the other hand, 'preservation of wealth' evolved to 'economic development' and 'diminishing the differences between economic levels.

Other contemporary scholars have also contributed to this evolution like Mohammad Al-Ghazali, Yusuf Al-Qaradawi and Taha Al-Alwani. As discussed below, the emergence of Islamic finance since 1970s facilitated the increasing debate on *maqasid* issues in defining the substance of Islamic finance operations and instruments.

4.3 MAQASID AND MASALIH

Throughout the development of the theory of maqasid, many scholars referred to *masalih* as an interchangeable expression of *maqasid* as they believed them to have the same meaning. Dusuki and Abdullah (2007b: 31-32) define *maslahah* as "a juristic device used in Islamic legal theory to promote the public good and prevent social evil or corruption".

The literal translation of *maslahah* (plural: *masalih*) is benefit, welfare or interest. However, from technical point of view, *maslahah* here means anything that brings a benefit, contributes to the public good or prevents harm or corruption. Al-Ghazali (cited by Jalil, 2006:3-4), who is believed to be the first to give the original formulation of the concept from its rudimentary form, explains *maslahah* as the "preservation of the religion, life, mind, offspring and wealth." According to him, "everything that leads to the preservation of these five foundations is considered *maslahah*, and everything that leads to the disruption of these foundations is bad (*mafsadah*), and its removal is *maslahah*". Auda (2008) argues that Al-Qarafi linked *maslahah* and *maqasid* by a 'fundamental rule' that is: a purpose (*maqsid*) is not valid unless it leads to the fulfilment of some good (*maslahah*) or the avoidance of some mischief (*mafsadah*). Ibn Ashur's (2006:90) understanding of *maqasid* is that



"Shari'ah aims at the acquisition of what is good and beneficial (*jalb al-masalih*) and the rejection of what is evil and harmful (*dar' al mafasid*). We can consider this as a fundamental universal rule of the Shari'ah".

In this sense, it can be argued that *maslahah* represents a broader concept, denoting public welfare promoting all good and preventing all harm. *maslahah* can serve as a widespread umbrella encompassing *maqasid al-Shari'ah* thereunder. Jalil (2006:6) states that

"the concept of *maslahah* and the doctrine of *Shari'ah* objectives are quite similar at the first glance. However, in a more detailed analysis, the two concepts are actually complement and interdependent between each other. The *Shari'ah* objectives doctrine is related with the protection of the human basic elements while *maslahah* is the level of protection of those elements".

4.4 CLASSIFICATION OF MAQASID

Throughout the various stages of developing *maqasid* theories, *maqasid* have been classified in many ways depending on the criteria used. A summary of these classifications follows:

(i) Classical Classification of Maqasid

The most known classification of *maqasid* is the one based on the level of necessity, which is the traditional classification. According to this classification, *maqasid* are divided into three categories: the essential (*daruriyyah*), the complementary (*hajiyyah*) and the desirable or the embellishments (*tahsiniyyah*).

Essential *maqasid* group includes what preserves the five main categories as defined by early scholars; being one's life, faith, offspring, intellect and wealth. "These are seen as absolute requirements to the survival and spiritual well-being of individuals, to the extent that their destruction or collapse would precipitate chaos and the demise of normal order in society" (Kamali 1999, 195). Examples are prohibition of alcohol to protect intellect and life, prohibition of adultery and establishing marriage to protect lineage.

As for complementary *maqasid*, this group includes the elements that, when present, would alleviate hardship in cases where removing this hardship does not undermine



the substance of the essential *maqasid*. Examples: shortening of prayer in war times and breaking of fast for the travellers or ill people.

In respect of desirable *maqasid*, the elements under this group, although considered important, their absence will not have a major effect on the previous groups as this group aims at the beautification of the previous two. Islam in its essence encourages seeking these elements as in the case of encouraging charity in addition to the obligatory *zakat* and the promotion of fair trading.

Although the above mentioned classification has been approved and used for centuries, it was not until the twentieth century that contemporary scholars developed modern classifications.

(ii) Modern Classification of Maqasid

According to Auda (2007), *maqasid* are classified in a number of dimensions. The following list highlights some of these dimensions:

According to the scope of rulings, maqasid can be divided into three types:

- (a) General *maqasid*: the ones observed throughout the entire *Shari'ah* such as justice;
- (b) Specific *maqasid*: which are observed throughout a certain chapter in *Shari'ah*, such as preventing monopoly in financial transactions;
- (c) Partial *maqasid*: these are limited to the intents behind specific scripts or rulings, such as the intent of feeding the poor.

According to *scope of people* included in the purposes, *maqasid* are divided into two main groups: general *maqasid* where the public well fare at large is the main concern, and private *maqasid* which deals with specific issues within an individuals' life such as matters related to one's morals, family or business. In case of contradiction between a private and general *maslahah* the general *maslahah* will prevail. A good example of this is where the public interest requires a certain road to be built on a land that is owned by individuals. While such use of the land might not be in the best interest of the individuals owning the land, the authority will be allowed to take over



the land to serve the best interest of the public. However, these individuals need to be compensated rightly for their land.

According to the *level of universality* of the purposes, many contemporary scholars classified *maqasid* according to its scope of universality, such as human rights and dignity, freedom and free will. According to Auda (2008, 5), universal *maqasid* were directly introduced from the scripts of the *Qur'an* rather from literature of *fiqh* that allows it to have higher values and principles and where detailed rulings can then be derived based on these universal *maqasid*.

As for the sphere of *maqasid*, macro *maqasid* and micro *maqasid* can be considered. This classification is very much similar to the general and private *maqasid*, but it came as a result of applying the *maqasid* theory in the modern Islamic economics science. It should be noted that macro *maqasid* includes all benefits related to the overall well-being and welfare of the economic system, whereas micro *maqasid* relates only to certain issues pertaining to individual financial transactions. Similar to general and private *maqasid*, macro *maqasid* is more important than micro *maqasid* and should be observed even when it contradicts micro *maqasid*.

Throughout the years, different scholars provided different theories on *maqasid*. Thus, trying to define *maqasid* in a certain classification is a complicated job. Auda (2007:8), therefore, states that "*Al- Maqasid* structure is best described as multidimensional structure, in which levels of necessity, scope of rulings, scope of people, and levels of universality are all valid dimensions that present valid view point and classifications".

From this understanding, the theory of *maqasid* can be developed as comprehensive framework that incorporates *maqasid* into real practice; and therefore *maqasid* should be used as the most imperative tools of logical and practical thinking to create new type of regulation that can protect the society and to engineer new Islamic financial products that are derived from within the Islamic thoughts and objectives.

4.5 ROLE OF MAQASID IN SAFEGUARDING THE ECONOMY

Maqasid al-Shari'ah provides a general framework that can be utilised to develop suitable solutions for all different types of problems faced in Muslim societies



including economic and financial issues. One of the good examples of the successful implementation of *maqasid*, as intended to be, was the Muslims' prosperity in the age of Islamic renaissance.

Correct implementation of *maqasid al-Shari'ah* will lead to the protection of religion, life, lineage, intellect and property which will ensure that all essential commercial, social and ethical needs are balanced and fulfilled. In modern times, as mentioned above, the emergence of Islamic finance has paved the way for increased debate on *maqasid al-Shari'ah* as a methodological tool to develop Islamic finance in terms of form and substance with the objective of essentialising 'human well-being'. In substantiating this, Ibn Ashur (2006:87) states that

Both its (*Shari'ah*) general rules and specific proofs indicate that the allpurpose principle of Islamic legislation is to preserve the social order of the community and insure its healthy progress by promoting the wellbeing and righteousness of the human species. The well-being and the virtue of human beings consist of the soundness of their intellect, the righteousness of their deeds as well as the goodness of the things of the world where they live that are put at their disposal.

Thus, when this order is distorted, harm and hardship occur. One of the key examples of this distortion is the financial crises that keep recurring over and over again. Although many reasons attribute to the occurrence of each of these crises, as discussed in detailed in the previous chapter, it is clear now that the current interestbased financial system is not the correct system and the reoccurrence of these financial crises cannot be solved with the existing conventional framework.

Islamic finance, therefore, with its ethical and legal foundations can be an effective alternative to respond to the economic and financial problems through its systemic nature requiring different modes of production and social formation. Within Islamic order, the framework of *maqasid* can provide the most suitable solutions.

The argument of the suitability of *maqasid al-Shari'ah* for this purpose can be further emphasised by highlighting the characteristics of *maqasid* as explained by Dusuki and Bouheroua, (2011: 7-9) who state that *maqasid al-Shari'ah* have four main characteristics. These can be summarised in the following:

(i) They are the basis of legislation as they serve the interests of all human beings and save them from harm;



- (ii) They are universal, aiming to serve the interests of mankind as the *Qur'an* is the last revelation that has been sent to the whole of mankind everywhere on earth until the end of time;
- (iii) They are inclusive as they cover all human acts and responsibilities whether they are related to worship or towards other human beings;
- (iv) They are definitive as they have been derived from a multiple texts and different aspects of evidence.

Based on characteristics of *maqasid*, it seems that the theory of *maqasid al-Shari'ah* can play a major role in establishing a new financial system that can help to moderate the current deficiencies in the conventional financial system. This point has also been emphasised by Mirakhor and Krichene (cited by Haneef and Smolo, 2010:12) in their analysis of the recent financial crises, where they concluded that "the most important lesson of the recent crisis for Islamic finance is an urgent need for the design, development and implementation of a comprehensive, unified, uniform, global and dynamic regulatory-prudential-supervisory framework". Such new complete set of rules and regulation will not moderate the consequences of major problems in the conventional financial system but will also pave the way for the growth and the development of the Islamic financial industry as a real alternative to the interest-based system. Mirakhor and Krichene (as cited by Haneef & Smolo 2010:12) have also emphasised that this "properly designed regulatory-prudential-supervisory framework [will be] essential to the orderly development and evolution of Islamic finance"

4.6 ISLAMIC FINANCE AND FINANCIAL ENGINEERING IN THE LIGHT OF *MAQASID AL-SHARI'AH*

One of the most important applications of *Shari'ah* in our modern life has been the development of the Islamic financial system. The basic differentiating principles of this new financial system compared to the conventional system are based on the Islamic teachings of prohibition of *riba* or interest, *gharar* or uncertainty, and *qimar* or gambling. However, Islamic finance is not just a new way of doing business, it should also contributes, through its structure, to the fulfilment of the socioeconomic objectives of the just society; and hence represents a new paradigm, which is shaped by *maqasid al-Shari'ah*. This view is supported by Laldin and Furqani (2012:22) who argue that Islamic economics can be used to achieve the major socioeconomic goals



of Islam such as socioeconomic justice and equitable distribution of income and wealth.

Since the establishment of the Islamic financial industry in the early 1970s, the industry has been trying to develop its own set of products and services that meet the requirements of *Shari'ah*. During over forty years of development, the industry made a great deal of success and growth. Ernst and Young, in their 2013-14 World Islamic Banking Competitiveness Report, demonstrated that Islamic banking is continuing to grow at good rates where the assets of global Islamic banking grew at an average rate of 16% per year between 2008 and 2012. The peak of this success came to capture the eyes of the world during the 2008 financial crisis where Islamic financial institutions remained resilient to the direct impact of the crisis, as under *Shari'ah*, Islamic financial institutions are not permitted to be involved in derivative transactions which are used heavily by the conventional banking industry. Of course, like all other industries, the Islamic financial industry was affected indirectly by the financial crisis due the recession that hit most of the world.

The progress made by the Islamic financial industry during this short period has been impressive. However, many researchers including Ahmed (2011), Laldin and Furqani (2012) indicate that the outcome regarding the types of products and services offered by this young industry is not completely satisfactory for the industry itself and the contemporary scholars. Ahmed (2011) argues that despite having many Islamic banking products based on *Shari'ah* compliant and legally valid contracts, they are being combined in a way that results in products that are in substance similar to prohibited transactions. Hence, although the contracts and the processes used by Islamic financial institutions are different to the ones used by conventional financial institutions, nevertheless, the outcome and the objectives of these products are very much the same. Hence Islamic financial products are not making the changes they are supposed to bring to the individuals and the society in which they operate.

This possible deficiency in the current Islamic financial products might be explained in the following:

(i) Islamic financial products are just a copy of the conventional banking products and the only thing that is Islamic about them is the contract they use;



- (ii) The main, and sometimes the only, objectives of these Islamic financial products are to generate profit for the shareholders regardless of the impact on the customer or the society; hence it is not completely different from the conventional products;
- (iii) The lack of understanding of the risks associated with Islamic products and the lack of risk mitigation tools that can be used in the industry is hindering the development of the Islamic products in the right direction;

In observing the convergence between Islamic and conventional finance, *Shari'ah* compliant *vs. Shari'ah*-based financial products, which was explained in the Chapter 2, is used to express this observed tension.

Islamic financial institutions develop their products and services based on the Islamic financial principles, which have been established as the main mechanism to implement *Shari'ah* requirements within the industry. The contractual conditions related to each of these Islamic financial principles together with their contemporary methods of application to serve the financial objectives of Islamic financial institutions have been established and approved with the help of specialised Islamic scholars in the field of jurisprudence of financial transactions or *fiqh al-mumalat al-maliah*.

When an Islamic financial institution develops a new product with all its relevant documentation including contracts, processes and procedures, these documents will be presented to the specialised scholars for approval. The scholars will review the relevant documents and ensure they fulfil the contractual requirements according to the established Islamic financial principles. The scholars will then issue a certificate of compliance or *fatwa* to certify that the product in question fulfils the *Shari'ah* requirements.

The process described above ensures that the new financial products offered by Islamic financial institutions are *Shari'ah* compliant. However, this process does not usually take into account the objectives of the product and the impact that these products will have on the customer, the family and the entire society, namely the ignorance of *maqasid al-Shari'ah* process. Dusuki and Abozaid (2007a: 154) reflect this understanding of the process by stating "indeed, one of the biggest challenges of



Islamic banking and finance industry today is to come up with products and services that are *Shari'ah* compliant or legitimate from Islamic point of view without undermining the business aspects of being competitive, profitable and viable in the long run". This statement has identified two parameters only to create an Islamic product and these are contractual compliance with *Shari'ah* requirements and meeting business objectives of competitiveness and profitability. This common understanding of the product development process did not take into account the compatibility of these products with the rest of the *Shari'ah* requirements and the wider impact of such products on the society.

Therefore, there is a dire need to rethink the whole process of product development in Islamic financial institutions to ensure that their products are developed to meet all *Shari'ah* requirements and not only the contractual conditions of the legal agreements. This can be achieved by creating a new product development process based on the framework of *maqasid al-Shari'ah* to ensure that Islamic financial products will be developed based on *Shari'ah* and not only to comply with *Shari'ah*.

4.6.1 Application of *Maqasid Al-Shari'ah* in Financial Engineering and Product Development

The purposes and objectives of Islamic financial institutions and Islamic financial products and instruments should be in line with the higher objectives of *Shari'ah*. The harmony between the objectives of *Shari'ah* and the Islamic financial institutions' objectives will ensure that the effect of the Islamic financial institutions on the individuals, families and the society are aligned with *maqasid of al-Shari'ah*.

Implementing *maqasid al-Shari'ah* within the Islamic financial institutions requires these institutions to introduce changes at two levels: the first is on the framework level, which includes the vision, mission and strategy, and this is the responsibility of the institution's Board of Directors 'BOD'; while the other is on the delivery and implementation level, which includes the product development process and customer service where it will be the responsibility of the management. In relation to the framework level, Islamic financial institutions need first to redesign their strategies and reclassify their business objectives according to the priorities listed by the theory of *maqasid* into essentials, complementary and desirable. The top priorities of these



institutions should be in line with the objectives of *Shari'ah*, while the second level of changes necessitates the transformation of these objectives into products and services that contribute positively to the well-being of the customers and the society. This approach is supported by Ahmed (2011), who argues that the senior management should create the product development strategy after the BOD specifies the social orientation of the organisation in terms of target markets and clients. This means that the institutions should not focus on attaining the complementary or desirable, while jeopardising the essential. These changes need to be introduced by the financial institution's BOD after consultation with their *Shari'ah* Supervisory Board.

In the context of Islamic financial products and services, Islamic financial products can be designed using a set of contracts such as sale, lease and partnership. These contracts can be used to assist customers in achieving the essential, complementary and desirable objectives. Therefore, Islamic financial institutions cannot just focus on providing all their products and services to the middle and high income classes of the population to help them obtain the complementary and the desirable, without offering similar products to help the low-income class of the population in obtaining their essentials. While the transactions, products and services might be fully Shari'ah compliant, the features of the product, its process and procedures and the way it's deployed in the market might make its overall contribution to maqasid al-Shari'ah very questionable, especially if these products and services are used to overburden the customers with debt. This usually happens due to the trade-off between the economic goals and the requirements of Shari'ah, where Islamic financial institutions are constantly striving to achieve higher profitability for their depositors and shareholders. As achieving maqasid al-Shari'ah in a competitive environment is usually costly, achieving economic goals takes the priority. Nevertheless, as the industry grows and Islamic financial institutions become more profitable, the utilisation of magasid al-Shari'ah in the processes of product development and financial engineering within the Islamic financial institutions can help in filling the gap between the theory behind Islamic finance and the actual practice of the industry.

Similarly, the conventional financial industry can benefit greatly by utilising *maqasid al-Shari'ah* methodology in their product development process and business model. The main areas that will benefit from such approach are (i) risk management through



the implementation of profit and loss sharing principles and the prohibition of excessive speculation and gambling; (ii) sales by reaching out to broader base of clients through the creation of fairer products that fulfil the needs of the poorer segment of the community.

4.7 CONCLUSION

The development of the Islamic financial industry in the recent decades has created alternative methods for providing financial services other than the conventional interest-based system. The success of this new industry, especially in remaining resilient against the 2008 financial crisis, opened the doors for new thinking regarding the objectives of the financial institutions and the purpose of the products and services they offer.

Until now Islamic financial institutions are not creating the expected impact on the socioeconomics of the societies they are operating in. This is due to the fact that most of their products and services are being developed to be *Shari'ah* compliant rather than *Shari'ah*-based. The effective implementation of Islamic finance operation requires much more than just refraining from charging interest and conforming to the *Shari'ah* contractual requirements. The operation of the Islamic financial institutions and the products they offer should contribute to the fulfilment of the socioeconomic objectives and the creation of a just society.

The use of *maqasid al-Shari'ah* as a base framework for establishing new rules and regulations for financial institution that take into account the objectives of *Shari'ah* will safeguard the well-being of the society as well as the individuals; and will not only solve the major problems in the conventional financial system but will also pave the way for the growth and the development of the Islamic financial industry as a real alternative to the interest-based system.

This new *maqasid*-based framework can be used also to improve the processes of product development and financial engineering within the Islamic financial industry by adding new controls to the product development process and driving it towards ensuring that the new Islamic products will in fact fulfil *maqasid al-Shari'ah* as well as the objectives of the financial institution.



The reform of the financial development process is one important task that the Islamic financial industry needs to adopt in the short run. This will ensure that the objectives of *Shari'ah* are achieved through the implementation of the new generation of Islamic financial products.



CHAPTER 5

RESEARCH METHODOLOGY

5.1 INTRODUCTION

After identifying the foundational issues related to the subject matter of this research, this chapter uses the research aims, objectives and research questions, described in details in Chapter 1, to drive the main hypotheses of the research. The chapter then describes the research process adopted and the theoretical foundation behind the research methodology framework used, together with the research design and strategy. The research methods used and how the data was collected, verified and then analysed is also described in this chapter. Finally, the chapter conclude by elaborating on some limitations and difficulties encountered while carrying out the research.

5.2 RESEARCH QUESTIONS AND HYPOTHESES

This research intends to conduct critical investigation into the current practices of Islamic financial institutions in relation to financial engineering and developing Islamic financial products by answering the research questions outlined in Chapter 1.

In order to answer the research questions using a structured approach, the parameters of the research questions are established by transforming the research questions into a set of hypotheses, based on the main findings of the literature review.

The hypotheses are the statements set in order to speculate the outcome of the research. Thus they need to be tested to either confirm or disprove them (Creswell and Clark, 2007). The methods used in testing the hypotheses should be relevant to the research questions and objectives (Robson, 2011).

The research hypotheses are detailed as follows:

H1: The majority of Islamic financial institutions have a strategy to develop new products;



H2: Developing new innovative products is important for the majority of Islamic financial institutions;

H3: The majority of Islamic financial institutions have a dedicated product development department;

H4: The majority of the Islamic financial institutions require the Shari'ah advisor to be involved in the product development process;

H5: The majority of Islamic financial institutions have a formal documented product development process;

H6: Islamic financial institutions use the products of conventional banks as the main source of ideas for new product development;

H7: Achieving maqasid al-Shari'ah is the most important factor for determining new product ideas in Islamic financial institutions;

H8: The most strictly performed stages in the product development process used by Islamic financial institutions are those related to Shari'ah;

H9: The majority of Islamic financial institutions are required to obtain approval for their new products from a national Shari'ah board;

H10: The majority of Islamic financial institutions carry out Shari'ah audit after launching the new product;

H11: The main barriers to developing new Islamic financial products are related to Shari'ah factors;

H12: The main risks related to developing new Islamic financial products are Shari'ah non-compliance risk, market risk and credit risk.

The above hypotheses are to be tested against the data collected through the questionnaire and the semi-structured interviews, and a conclusion will be drawn accordingly.



5.3 RESEARCH METHODOLOGY

Identifying the right research methodology is imperative to achieve the research objectives. Choosing the right methodology helps the researcher in evaluating, examining and explaining the problem that is the subject matter of the research.

Bogdan and Taylor (1975: 1) define methodology as "the process, principles, and procedures by which we approach problems and seek answers". Whereas, Gray *et al.* (2007:14) define it as "study of research process itself – the principles, procedures, and strategies for gathering information, analysing it, and interpreting it". In more technical words, O'Sullivan and Rassel (1989:209-210) define the research methodology as "systematic controlled, empirical, and critical investigation of natural phenomena guided by theory and hypothesis about the presumed relations among such phenomena". Based on these definitions, we can define research methodology as the processes and the procedures adopted to critically investigate a specific problem using systematic approach and empirical methods.

The best methodology is the one that can be most useful to the research and fits with the nature of the specific research questions. Therefore, the researcher has to identify the methodology that best achieves the objectives of the research. Silverman (2001: 25) explains that the choice of the methodology depends on the research aims and objectives, and what the researcher wants to discover, hence, there is no good or bad methodology, or valid and invalid methodology.

In the context of social science, research methodology is usually classified into two general formats, namely quantitative and qualitative research methodologies. The quantitative research methodology is an approach used to examine and explain a specific phenomenon by collecting and analysing quantified data.

This approach is used by a researcher where the main motive is to explain and examine the phenomenon by correlating various variables. Quantitative methodology, hence, is designed to reach conclusions based on numerical data, for example, by means of testing the strengths of the relationship between dependent and independent variables (Creswell, 1994). It involves the collection of data so the information can be quantified and statistically analysed in order to support or refute alternative knowledge claims.



The qualitative research methodology, on the other hand, is an approach used to describe and interpret a specific phenomenon. Bryman (1988:46) defines qualitative research as "an approach to the study of the social world which seeks to describe and analyze the culture and behavior of humans and their groups from the point of view of those being studied". This approach emphasises on the human aspect and how people see, perceive and understand social phenomena as they occur in certain situations. It is mainly used when a researcher's motivation is to describe, explain or evaluate a phenomenon. Thus, the qualitative research methodology is used where the emphasis is on words instead of quantifiable data (Bryman, 2008).

This research aims to explore, explain and examine the current practices of Islamic product development within the Islamic financial industry, by studying the industry practitioners' perception of the current methods, tools and strategies applied by the industry. Therefore, this research adopts a qualitative research methodology as the main research frame and process to fulfil the research aims and objectives and answer the research questions.

5.4 RESEARCH STRATEGY

The successful investigation of a specific topic requires the researcher to adopt a clear research strategy in order to answer the research questions correctly. Therefore, the research strategy is the approach that is used by the researcher to create the connection between theory and empirical data collected by observing the social world. In other words, the current information related to the research's phenomenon, collected by the researcher through the literature review and the observations generated from the data, are used to guide the researcher to the best strategy to create the right connection between them.

In the context of social research, as stated by Bryman, (2008: 11), two ways are mainly used to connect theory and the data collected, namely; deductive and inductive reasoning or strategies.

According to Bryman and Bell (2003) deductive theory represents the common view of the nature of the relationship between theory and research. In other words, the general process of the deductive approach moves from the general to the specific, where it starts with the theory that will be tested in order to obtain the findings.



Creswell (1994), on the other hand, describes the process in more details, where it starts from a particular theory used to deduce certain hypotheses, and then they are tested against the collected data to reach a conclusion confirming or rejecting the hypotheses.

The inductive approach, on the other hand, is used to move from the specific to the general. In other words, the process of induction involves drawing generalizable inferences from observations (Bryman & Bell 2003). In this scenario the outcome of the research will be the formation of the theory. Thus the process in the inductive approach works in the opposite direction to the deductive process. In other words, the researcher begins with specific observations or arguments, formulates tentative hypotheses to be explored, and finally develops a general theory (Blaikie, 2007). The detailed inductive process starts by collecting data through observation to understand general pattern that connects the different variables within the data and establish the relationship between them. This may then potentially lead to theory-building, which is defined as grounded theory.

As regards to this research, it follows an inductive strategy, as the motivation behind this research is to examine and explore the current practices of product development within the Islamic financial industry. It starts with exploring and observing the existing practices in the market by collecting data, then generates particular hypotheses to be tested against the collected data to understand the relationships between the variables.

5.5 RESEARCH DESIGN

The research design is the framework that the researcher uses to turn the research questions into a research project. The research design should be properly formulated by adapting the most suitable techniques to accurately achieve the research objectives.

Bryman, (2008) points out that the objective of research design is to guide the research process from beginning to end by providing the framework needed to complete all the necessary work including collection and analysis of data. Thus, the research design should involve a series of rational decision-making choices. These choices reflect decisions on the priority being given to a range of dimensions of the research process which create the appropriate research design.



Bryman (2008) and Creswell and Clark (2007), among others, argue that in order to ensure a successful research design, the researcher should first define the research problem and identify the information needed to solve the problem. Then, the researcher needs to decide on the best approach to achieve its objectives, which will be followed by choosing the most appropriate method for data collection together with sampling process and finally, the researcher needs to develop the plan to analyse the data.

There are different classifications for the nature of the research design. The most common classifications are exploratory, descriptive and explanatory. The exploratory research is used when there is not much known about the phenomenon being researched. Therefore, exploratory design is useful when a researcher wants "to ensure the precise nature of the problem" (Saunders *et al.*, 2009: 139). This approach helps the researcher to solve an issue that has not been studied extensively previously.

The descriptive research is used to describe the characteristics of the most interesting variables related to the phenomenon being researched in order to present the data in a meaningful form. Therefore, descriptive design is useful "to describe the characteristics of the variables" (Sekaran and Bougie, 2009: 105). This approach helps the researcher in forming new ideas by using the past events to explain existing observable facts in terms of characteristics and functions.

The explanatory research is used usually to explain the nature of certain relationships or establishes the differences among groups or the independence of two or more factors in a situation through hypotheses testing. Therefore, this type is valuable for verifying causal relationships between variables (Saunders *et al.*, 2009: 140). This approach helps the researcher to identify how various independent variables affect dependent variables within a relatively controlled environment.

The selection of best research design requires due consideration of various elements including the phenomenon being studied, the research questions, the methods to be used and the required data. Thus, the nature of the study and the resources available to the researcher will greatly influence the research design.

As discussed earlier in the literature review chapter, the product development process in Islamic financial institutions has not been subject to extensive research and so far



there is not much data that is extracted by exploring the opinions and perceptions of the participants which would provide information about the actual practices of the Islamic financial institutions in the area of product development. Therefore, the exploratory approach can be very helpful in this context to identify the current practices in the market. Furthermore, the relationship between the various independent variables that may affect the product development process used by different Islamic financial institutions needs to be studied to understand the nature of the differences among Islamic financial institutions' practices. Thus using a descriptive approach will enable the researcher to explore and verify any existing relationship between the variables.

This research, hence, contains characteristics of both exploratory and descriptive research designs. Therefore, a mixed design approach of both exploratory and descriptive, enables the researcher to explore the subject matter through the use of both; the survey technique and the semi-structured interviews to identify the common practices in the Islamic finance industry in relation to product development, and verify any existing relationship between the various independent variables that may affect the product development process.

5.6 RESEARCH METHODS

A successful research is the one that deploys the most useful methods. Similar to methodology, methods cannot be true or false, but more or less useful "depending on their fit with the theories and methodologies being used and the hypothesis being tested and/or the research topic that is selected" (Silverman, 2001: 12).

Research method includes the techniques, tools, and procedures, by which the data is collected, analysed, and interpreted for the research project (Bryman, 2008). There are different definitions for research method. Creswell (1994:64) defines it as "the practices and techniques used to gather, processes, manipulate and interpret information that can then be used to test ideas and theories about social life." Whereas Jankowicz (2000: 209) defines it as "a systematic and orderly approach taken towards the collection and analysis of data so that information can be obtained from that data".

The selection of proper research method provides the researcher with useful tools to gather the required information in order to obtain insight into the particular



phenomenon being researched. As Bryman & Bell (2003) explain, researchers use specific instruments such as a questionnaire, or a structured interview or participant observation whereby the researcher listens to and watches others in order to collect information.

There are two different types of research methods: qualitative and quantitative. Silverman (2000) explains that qualitative techniques use tools like observation, interviewing and audio recording, while quantitative techniques use tools such as statistical correlations to study a specific social object. Qualitative methods are used when the research strategy emphasises on words and has non-numerical characteristics, whereas quantitative methods emphasises on quantification in the collection and analysis of data (Bryman, 2008).

Quantitative and qualitative methods use different techniques and it is very important to choose the most suitable methods that are fit for the aims, objectives and research questions of a study. However, many argue that in social sciences, using a mixed method of both qualitative and quantitative will lead to better results.

According to Creswell and Clark (2007:13), mixed methods research "provides more comprehensive evidence for studying a research problem than either qualitative or quantitative research alone". Mixed methods or 'triangulation' provides better interpretation as the information missed by one method might be captured by the other and therefore enhance the overall understanding of the observations made.

The depth of information needed in this research to identify in detail the processes implemented by Islamic financial institutions to develop new products can be better captured using triangulation approach whereby qualitative research methods (like interviews and interpretations) and quantitative methods (like questionnaire analysis) will help the researcher in having full understanding of the current practices in the industry.

5.6.1 Research Methods: Data Collection Instruments

The selection of the most appropriate instruments to collect the data requires the researcher to consider the research methodology framework in order to ensure effective and efficient conduct of the research.



According to Creswell and Clark (2007) collecting information that answers the questions raised in the study is the fundamental idea of data collection. Hence, in researches that use a triangulation approach, as this research, it is common to use a combination of two or more instruments to ensure that the data collected will have the required range and depth needed to have full understanding of the phenomenon being researched.

This research contains characteristics of both exploratory and descriptive research designs, and due to the scarcity of the primary data on the research topic, the study uses both survey questionnaire and semi-structured interviews to identify the common practices in the Islamic finance industry in relation to product development.

In a survey study, the most common data collection method is the questionnaire which has become a commonly used instrument for data collection.

5.6.1.1 Survey questionnaire

A questionnaire is defined as a formal and written set of closed-ended or open-ended questions that are asked to every respondent in the study. The questionnaire is used as a research method instrument to collect primary data that fulfils the research aim and objectives. This instrument is often used as the preferred way in social research due to its efficiency in collecting large amount of standardised data.

However, researchers including, among others, Simon (1969), Denscombe (1998) Ackroyd and Hughes (1981) argue that although the questionnaire is one of the most popular instruments, it, like any other instrument, has advantages as well as disadvantages that researcher needs to avoid, if possible, when using this instrument. The main advantages of using the questionnaire instrument in this research can be summarised in the following points:

Advantages:

- (i) Provides flexibility to include different formats of questions, providing data on multiple aspects of the research topic;
- (ii) Provides cost efficient instrument to gather the required data;



- (iii) Can be easily distributed to a large number in a controlled manner to reach the target sample;
- (iv) High amounts of standardised data can be administered, documented and objectively analysed in a simple way (using software packages and analytical tools);
- (v) Required information can be collected in a relatively short period of time;
- (vi) Ensures confidentiality and encourages respondent to provide precise information with greater confidence.

Disadvantages:

- (i) Tends to direct the respondents to choose certain option(s) or answer(s), especially in the case of closed-ended and multiple questions;
- (ii) Respondents are unable to express their opinions or feelings beyond the listed answers;
- (iii) Respondents may face difficulty in fully understanding the questions or might have different perceptions of some issues, which might affect the research outcome;
- (iv) It is impossible to know how truthful the respondent is or how much thought has been put in answering the questions;
- (v) The number of questions is limited as too many questions could discourage the respondents.

It is clear that the advantages of the questionnaire outweigh its disadvantages and therefore, the questionnaire for this research is designed to maximise the benefits of the advantages and limit the impact of the disadvantaging factors. In other words, considering the nature of the data required by this study, a questionnaire is considered to be the most efficient method of data collection in reaching out to very diverse geographical areas and individuals.



5.6.1.1.1 Questionnaire design

The questionnaire designed for this study benefited from the literature review, including articles, books, PhD theses, research journals and exploratory surveys related to the research topic. The researcher's knowledge and experience in the area of the research topic have also played an important role in designing the questionnaire. In particular, the survey by Ahmed (2011) was useful in developing the questions.

In general there are two types of question designs: open-ended and closed-ended. Open-ended questions do not have definite answers, while close-ended questions have a finite set of answers from which the respondents can choose the answer that is correct in their opinion. Most of the questions for this research have been designed to be close-ended questions. However, bad design might lead to biased results.

There are a number of factors that have been considered during the design of the questionnaire to minimise the impact of any aspects that might lead to biased results. The factors that have been taken into account in designing the questionnaire can be summarised as follows:

- (i) The language of the questionnaire has been made clear to ensure that respondents understand the question and provide the correct answers;
- (ii) Multiple answer questions have been used to ensure that questions with multiple dimensions can be covered with expanded options to cover wider range of practically possible answers;
- (iii) Questions have been phrased, in most cases, to capture the facts related to the practice of the institutions rather than the perception of the respondent to ensure objectivity;
- (iv) The number and the length of the questions asked have been considered carefully to ensure it covers all the research questions and creates a balance between capturing all the required information and not making the questionnaire too long;



(v) The questionnaire was distributed using online specialised website to ensure the readability of the survey questions and to minimise unreliability of the data collected.

5.6.1.1.2 Questionnaire structure

The formulation of research questions and the seamless flow of the context together with correct layout of the questions are important to assure the quality of the responses. The survey questions for this research have been designed to cover the research questions and objectives and to cover the most relevant aspects of the product development process within Islamic financial institutions. The questionnaire is divided into three main parts that are summarised in Table 5.1.

Part No	Description	Questions Range
Part 1	Characteristics of the respondents and their	Q1 – Q11
	institutions	
Part 2	Strategy, plans, resources and organisational	Q12 – Q23
	structure of the product development process	
Part 3	The process design, documentation, the steps	Q24 - Q42
	followed and the difficulties related to product	
	development within the institution	

Table 5.1: Questionnaire Structure

The first part of the questionnaire is used to define the characteristics of the respondents and their institutions. This information is important during the inferential analysis stage to identify whether there are any significant differences in the way the participant institutions carryout product development using the institution's location, size, age, nature of activities and the respondent position as control variables.

The second part focuses on the strategy, plans and organisational structure of the institution in relation to product development process. The aim of this part is to establish the importance of product development within the institution and the resources available in terms of staff, funds and technology.

The third part focuses on identifying the design of the process, documentation used and the detailed step-by-step process for product development as implemented by the



institution, followed by a set of open-ended questions that aim at capturing the respondent's perception in relation to the difficulties and risks that are usually considered by the institution while developing new products. The questionnaire scheduled used in this study can be found in Appendix 1.

5.6.1.1.3 Sampling of survey questionnaire

There is a large number of Islamic financial institutions around the world and it will be very difficult and costly to reach out to all of them. Therefore, it is important to select a suitable sampling method in order to obtain a representative sample for the purpose of this research. According to Sekaran and Bougie (2009), sampling is important in order to make sure that the sample is representative of the population.

Bryman (2008:85) defines the sample as "the segment of population that is selected to be investigated". The size of the sample must be sufficient in order to represent the population that the study intends to investigate. According to Bryman (2008), sample sizes smaller than 500 cases and larger than 30 cases tend to be suitable for most studies.

Sampling methods can be grouped into two main kinds, namely probability and nonprobability samples. Probability samples ensure that each member of the population has an equivalent opportunity of being incorporated in the sample. Non-probability samples, on the other hand, are used when it is difficult to ensure that each member of the population has the same probability to be chosen in the sample, usually due to the lack of complete information of the relevant universe, which is the case for this research. Therefore, using non-probability sampling is more appropriate for this research.

According to Bryman (2008), there are different types of non-probability sampling methods, including purposive and snowball sampling that are relevant to this research. In purposive sampling, the sample is chosen based on the purpose of the study. As other non-probability sampling methods, purposive sampling does not produce a representative sample of the population, but it creates the needed subset of the population which is appropriate for the research.



Snowball sampling method is generally used for cases where members of a special population are difficult to locate. It identifies one or more members of the population that have the right expertise and knowledge, and then uses recommendations to find more people from their extended associations and acquaintances. It is very much like a snowball that rolls and increases in size as it collects more snow.

In relation to this research, it is almost impossible to reach out to the full population of Islamic financial institutions worldwide mainly due to the lack of information on the total number of these institutions and the contact details of relevant individuals within these institutions; and therefore, purposive and snowball sampling is utilised in conducting the data collection segment of this research.

5.6.1.1.4 Data collection via survey questionnaire

The survey questionnaire used in this study was distributed by targeted emails using an online specialised website. According to Dillman (2000), administering survey questionnaires through modern technologies has various advantages, some of which are listed in the following points:

- Geographical reach out: this method allows the researcher to reach out to all potential respondents across all geographical regions without any constraints and in a cost effective manner.
- (ii) User-friendly: the online method provides good tools for designing the methods of answering the survey questions and make the questionnaire easily accessible and user friendly.
- (iii) Administration convenience: it provides the researcher with useful administration tools to extract the data in different formats and prepare it for the analysis stage.

The above factors helped the researcher in achieving an acceptable response rate for the questionnaire survey which has been distributed to different types of Islamic financial institutions worldwide. Table 5.2 provides details on the sample size and the response rates, however, the detailed analysis of all relevant aspects of the respondents is provided in the following chapters.



Targeted Sample	Received	Not Valid	Valid	Response Rate
127	49	4	45	35%

 Table 5.2: Questionnaire Response Rate

Taking into account the difficulties in reaching out to the target sample, the above response rate can be considered a good achievement, presents a valid data and, for the purpose of this research, provides a proper representation of the Islamic financial institutions' universe.

5.6.1.2 Semi-structured interviews

Interviews are an important data collection method that is frequently used by researchers. The objective of an interview is to generate conversations with people on a specific topic to obtain insight into people's opinions, values, attitudes and feelings by using verbal questioning as the principle technique of data collection.

5.6.1.2.1 Types of interviews

There are different classifications for the types of interviews used in research work. The most common types are structured interviews, semi-structured interviews, unstructured interviews and group interviews as indicated by Sekaran and Bougie (2009) and Saunders *et al.*(2009).

A structured interview usually involves the use of a specific methodology that requires the interviewer to ask each of the participants the same questions in the same way. The results are mostly captured in the form of ticked boxes (yes or no). The participants in this form of interviews usually have very little freedom to express their own opinions in their own ways.

Semi-structured interviews provide the interviewer and the participants more freedom, compared to structured interviews. The interviewer can actually go outside the set form of the questions in order to capture in-depth information on the participant's opinion on the topics of the research.



As for unstructured interviews, the interviewer has a set of general guidelines regarding the interview and the topics to be discussed. It permits the interviewer to encourage the respondents to talk at length about the topic of interest in a flexible approach (Robson, 2011). However, the interviewer has to keep the conversation within the general guidelines set for the interview.

In respect of group interviews, the interviewer brings a number of participants together in the same place (usually eight to twelve individuals) to discuss a particular topic. The participants are given the freedom to interact with each other and comment on each other opinions.

5.6.1.2.2 Advantages and disadvantages of interviews

Each research instrument has its own advantages and disadvantages. The most important factor is that the researcher should use the most suitable instrument that will bring the required information in the most efficient way. According to Denscombe (1998) and Jankowicz, (2000) the main advantages and disadvantages of interview as a research instrument can be summarised in the following:

Advantages:

- (i) Interviews provide a good instrument to collect valid, clear, precise and indepth information on the research topic by using direct interaction with the participant to clarify any issue related to the questions;
- (ii) The interview creates a platform to exchange valuable insights, views, visions and feeling about the topic between the interviewer and the participants;
- (iii) The interview provides flexibility in developing the line of enquiry and can be easily conducted and administrated by the interviewer with little need of equipment.

Disadvantages

(i) The information collected from the interviews usually comes in the form of coded texts and transcripts which makes it difficult for the researcher to



extract the required information and decode it, especially if there is a big number of interviews that have been conducted;

- (ii) The information gathered from the participants might not be consistent and provide conflicting information, especially in cases where the questions are subjective;
- (iii) The skills, nature and the personality of the interviewer might have an impact on the statements made by the participants which might lead to skewed results;
- (iv) The interview may face some administration difficulties especially in the case where the interviewer and the participants are in two different geographical locations.

Interviews have clear advantages and add a real value to the research outcome. Within a triangulation method approach, the interview instrument can play an important role to capture certain information that cannot be captured in the survey questionnaire. Therefore, the researcher chose to use the semi-structured interview due to the benefits it brings for this research, as it allows the researcher to specify certain questions that serve the objectives of the research while allowing the interviewees to expand on the research topic with comprehensive responses as they saw fit, hence maximising the data input for the research.

5.6.1.2.3 Semi-structured interviews questions

The interview themes and questions are designed within the context of the main research questions identified in Chapter 1 and hypotheses explained in this chapter 5. The interviews cover the main topics of the questionnaire with focus on the following areas:

- (i) The current market practice regarding the development of new products;
- (ii) How the existing practices can be improved, where exactly should the focus be, and what are the principles that should be adopted for developing new Islamic financial products;
- (iii) The challenges facing the innovation of new Islamic financial products;



- (iv) What is the difference between *Shari'ah* -compliant products and *Shari'ah*-based products and what is needed to develop *Shari'ah*-based products?
- (v) How to ensure that the new products fulfil *maqasid al-Shari'ah* beyond prohibition of *riba* and *gharar*.

The primary data collected through semi-structured interviews is summarised, analysed and used, when possible, as part of the discussion in Chapter 9 to substantiate and to compare and contrast the findings of the quantitative data with the qualitative data analysis results.

5.6.1.2.4 Semi-structured interviews administration

The design of the semi-structured interview has to take into account certain important factors to ensure that the interviewer conducts the interview in the correct manner and obtains the required information. The following points summarise the factors that have been considered by the researcher while designing the semi-structured interview for this research:

- (i) The purpose and objective of the interview has been stated clearly to the participants at the beginning of the interview;
- (ii) The choice of the place and the time for the interview has been considered carefully to ensure that the right environment is in place to facilitate the flow of the information. In some cases the interview took place over the phone due to the geographical location of the participants;
- (iii)All interviews have been recorded after taking proper approvals from the participants, in line with the ethical requirements;
- (iv)The participants have been selected carefully to ensure coverage from different segments of the Islamic financial industry in order to obtain diversified valuable information related to the research topic;
- (v) The same questions were used in all interviews. However, the participants were given the freedom to answer the questions in their own words.



The semi-structured interviews provided valuable qualitative information on the research topic with some in-depth information on the view and vision of some of the leading *Shari'ah* scholars and participants in the industry. This is in particular beneficial for shaping the researcher's understanding of the practices related to the product development in the industry at the individual level rather than institutional level.

5.6.1.2.5 Sampling and data collection via semi-structured interviews

The sample selection for the semi-structured interviews was completed using the snowball sampling method, as explained earlier. The researcher used leading and eminent *Shari'ah* scholars in the Islamic financial industry as the primary individuals to help in obtaining access to carefully selected well-known practitioners in the field of Islamic finance.

The diversity in the sample of interviewees is important to ensure capturing different views about the topic of the research from different angles as presented by each of the interviewees. While the selected sample focuses on *Shari'ah* scholars, the views of different types of professionals representing marketing, sales, product managers and specialised academics were also captured to enrich the research with different views from various disciplines in the Islamic finance industry.

Table 5.3 provides details of the positions of the interviewees and the types of institutions they work for. The full details of the interviewees' profiles are provided in Appendix 2.

	Type of Institution					
Position	Banks	Takaful	Research/	Fund	University	Total
			Consultancy			
Scholars	1	1	1	1		4
Marketing	1					1
Managing	1		1			2
director/ CEO						
Product	1		1			2
manager						
Lawyer	1					1
Academics			1		1	2
Total	5	1	4	1	1	12

 Table 5.3: Semi-Structured Interviews (Profiling of Interviewees)



In total twenty requests for interviews were sent to carefully selected individuals, who the researcher believes to be well-versed in Islamic finance and the topic of product development. However, due to geographical and budget constraints, only twelve interviews were conducted. Nevertheless, these interviews covered different and relevant stakeholders of the Islamic finance industry.

5.6.1.3 Pilot testing

A pilot study is an essential part of the research design process where a small-scale preliminary study is conducted before distributing the survey questionnaire or conducting the semi-structured interviews. The main objective of the pilot study is to check the feasibility and to improve the design of the research. The pilot testing helps the researcher in ensuring that the research survey questionnaire operates well and that the research instrument as a whole is fully functional (Bryman, 2008). Piloting is also important in order to check the uniformity of each respondent's interpretation, and the correctness of the answers provided by the respondents (Dillman, 2000).

The first draft of the survey questionnaire prepared for this research was checked and reviewed by the thesis supervisor. After incorporating the feedback of the supervisor, the second draft of the questionnaire was sent for pilot testing to a group of 10 practitioners specialised in Islamic finance from different institutions. The pilot test group was instructed to answer the questionnaire and provide feedback on issues related to the format and the substance of the questionnaire including:

- (i) Are the questions clear and can be understood easily?
- (ii) Are there any questions that can be seen as sensitive or private?
- (iii) Are there any irrelevant questions?
- (iv) Are there too many questions?

The collected feedback from the pilot testing indicated that most of the questions were relevant and the text of the questions was clear with direct instructions. However,



some of the participants raised concerns regarding the length of the questionnaires and some sensitive financial information related to sales, pricing and margins.

The total number of questions in the pilot survey questionnaire was fifty; but based on the feedback received from the participants in the pilot test, this was reduced to forty two questions by dropping some of the questions related to the financial matters while maintaining the most important financial questions related to determining the size of the institution, as this is one of the important factors, according to the researcher's belief and experience, that can impact the way the product development process is implemented in a financial institution.

Accordingly, the final version of the survey questionnaire was prepared and uploaded online for distribution to the target sample.

5.6.1.4 Reliability and validity of data

In social science, research quality is ensured by measuring the reliability and validity of the data collected to conduct the research.

Reliability refers to consistency in carrying out the research so that if the research was to be carried out by another researcher (or the same researcher at another time) employing the same methodology and strategy, they would arrive at a similar conclusion, all other things being equal (Creswell, 1994).

Validity, on the other hand, refers to whether or not a research method instrument (questionnaire or interviews) actually measures what it claims to measure (Bryman, 2008). Therefore, validity is concerned with the integrity of the conclusions that are generated from a piece of research. The validity of the research, hence, depends on reliability, as if it is not reliable, it cannot be valid because validity presumes the reliability, but on the contrary a measure can be reliable without being valid (Bryman, 2008).

When a measure remains consistent over time, despite uncontrollable testing conditions or the state of the respondents themselves, it provides a good indication of the measure's stability and its consistency to changes as the situation changes. The reliability of the measure also indicates the extent to which it is free from random



errors, for which indicators are used to test and retest reliability and internal consistency.

Bryman and Bell (2003) and Bryman (2008) suggest that reliability can be verified using the consistency in measuring a concept which can be measured using 'Cronbach's alpha' which tests the internal consistency of the data collected through a questionnaire schedule. Hence, Cronbach's alpha indicates how well the items in a set are positively correlated to one another. The test is computed in terms of the average inter-correlations among the items measured. The results of the test range from 0 to 1, where 1 refers to perfect internal reliability with no error component and 0 refers to complete unreliability with error component. The higher the value of the test, the more reliable the scale is. However, the majority of research requires the results to be at least 0.7 to denote an acceptable level of internal reliability. Cronbach's alpha is estimated for the data collected through the questionnaire in this study, which is depicted in Table 5.4.

Table 5.4: Reliability Statistics	(Cronbach's alpha	coefficient)
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Cronbach's Alpha	Number of Items
0.891	17

Table 5.4 shows the result of the internal reliability test for the relevant scale type questions from the survey. As can be seen, Cronbach's alpha is 0.891, which suggests good internal consistency for the scale with this specific sample.

The validity and reliability of the data collected using the survey questionnaire is further ensured by taking a set of measures that can be summarised in the following points:

- (i) The questionnaire was pilot tested and the collected feedback was used to improve the questionnaire;
- (ii) Collected raw data was screened and filtered for errors;



(iii) Following up with respondents by telephone and emails to complete any missing information and clarify any conflicting information provided by the respondents.

In addition, the reliability of the data collected from the semi-structured interviews was ensured by recording all interviews and taking notes at the same time. These recordings and notes were later utilised to document and analyse the content of the interviews.

5.6.2 Research Method: Data Analysis

The choice of adequate statistical tools to analyse and interpret the data collected is an important factor in determining the validity of the research findings. The process and the methods used to analyse the quantitative and qualitative data collected using the survey questionnaire and the semi-structured interviews, respectively, are detailed in the following sections.

5.6.2.1 Quantitative data analysis

The analysis of the data collected from the survey questionnaire involves several essential steps that need to be followed to ensure accurate results. This process usually requires the collected data to be error free, coded and then categorised properly. Sekaran and Bougie (2009) emphasise this approach by requiring the data to be edited before being analysed and this usually involves coding, categorising and creating a data file programme.

In order to ensure error free data, the researcher conducted multiple reviews of the data to ensure that errors and missing information were corrected and completed as appropriate by contacting the respondents directly to correct and complete the relevant questions.

After correcting all errors and completing missing information, the data was coded and categorised and the file was saved for statistical analysis. The final data file was analysed using SPSS or Statistical Package for Social Science. The detailed findings of the analysis are presented in Chapters 6, 7 and 8.


There are several techniques that are usually used to carry out the data analysis. The choice of the technique or method used in the analysis is usually derived by the objectives of the research and whether the data collected is normally distributed or not.

The main objective of the data analysis in this research is to understand the current practices of the participant Islamic financial institutions in relation to the processes and procedures used for developing new Islamic financial products, and to test whether there are significant differences in the practices of Islamic financial institutions represented in the sample.

Identifying whether the data collected is normally distributed or not helps the researcher decide on whether to use parametric or non- parametric tests to analyse the data. In order to use parametric tests, the collected data should meet certain assumptions. Hebel (2002) argues that parametric tests are usually suitable for samples that are drawn from a normally distributed population and data collected on an interval or ratio scale. Non-parametric tests, on the other hand, are used when parametric tests' assumptions are not satisfied.

The normality of the data collected for this research is tested using the Kolmogorov-Smirnov and Shapiro-Wilk tests to determine whether to use parametric or nonparametric tests. The null hypothesis for normality test is that the data is normally distributed. H_0 is rejected if the *p* value is below 0.05 and the data is considered not normally distributed. However, if the *p* value is greater than 0.05, H_0 is accepted and the data assumed to be normally distributed. SPSS statistics are used to conduct the normality test and the results are depicted in Appendix 4.

As can be seen from the results depicted in Appendix 4, the vast majority of the normality test results returned a p value below 0.05 which means that H_0 can be rejected as the test result provides strong evidence that the data is not normally distributed; and therefore non-parametric tests are more suitable for the purpose of this research.

The researcher used different statistical techniques to achieve the objectives of this research. These techniques can be summarised in the following:



- (i) Descriptive statistical tests: There are many types of descriptive tests that this research can benefit from. The researcher computed the most important descriptive tests including frequency distribution, mean and standard deviation. All results are documented and analysed in the following Chapters.
- (ii) Mann-Whitney U Test and Kruskal-Wallis Test (KW): Both are non-parametric tests, which are used to determine if there are statistically significant differences between two or more groups of an independent variable, respectively, on a continuous or ordinal dependent variable. The researcher used the KW test in this research to test if there are any significant differences in the way the institutions represented in the sample carryout product development using the institution's location, size, age, nature of activities and the respondent's position as control variables. Usually, the significance level used in most research for the KW and Mann-Whitney U test is 5%. However, in this research the significance level is increased to 10% to allow the researcher to examine a higher degree of differences in opinion among the sample.
- (iii) Factor Analysis is a statistical analysis tool, which involves multiple steps, and is used to reduce a large number of variables into a small, more manageable number called 'factors'. Field (2013:875) defines factor analysis as "a multivariate technique for identifying whether the correlations between a set of observed variables stem from their relationship to one or more latent variables in the data, each of which takes the form of a linear model". Applying the factor analysis helps in identifying the factors that have largely or entirely contributed to the differences in opinions among the respondents thereby it is possible to develop new set of variables in the form of 'components'.

5.6.2.2 Qualitative data analysis

The analysing of semi-structured interviews usually involves several steps in the process. These include systematic procedures of coding and categorising then transferring answers in to a computer file to identify common answers and patterns. Sekaran and Bougie (2009) describe a three-step process for analysing the interview data, which include data reduction, data display and drawing conclusions.



In conducting the interviews, the researcher took notes and recorded all interviews. All answers were coded and categorised. Then a thematic analysis was applied to transfer the scripts and the notes from word format to excel sheet and organise the transcript into tables. Each table represents a theme and provides organised, concise and meaningful information.

The findings of the interview data analysis are used in Chapter 9 as part of the discussion related to the data analysis in substantiating the findings of quantitative data analysis. In order to provide integrated and comprehensive data analysis, interpretative method is also used to explore the collected data and provide greater meaning to the data as part of the qualitative analysis.

5.7 DIFFICULTIES AND LIMITATIONS

Most, if not all researches usually face different types of difficulties during the research process, which may lead to some limitation in the outcome of the research. Similar to any other research, the researcher encountered various challenges and constraints during the process of collecting the data using the survey questionnaire and the semi-structured interviews instruments. The range of the difficulties included:

- (i) Identification of the target population for the survey questionnaire: the researcher needed a large number of Islamic financial institutions from different sizes, different types of activities and operating in different geographical areas.
- (ii) Response rate was low: the researcher had to personally carryout multiple follow-up correspondences with respondents in the form of emails and telephone calls to ensure participation and completion of the questionnaire. Different reasons for decline were given by potential respondents including "confidentiality" and "institutional policy of not providing information on the product development process", despite the researcher's continuous assurance of the confidentially and the anonymity of the research in line with the university policy and research ethics.



(iii)Conducting larger number of semi-structured interviews: the researcher faced significant difficulties in identifying a larger number of scholars and professionals willing to participate in the interviews.

The difficulties mentioned above led to some limitations in the research. The main limitations affecting the research can be summarised as follows:

- (i) The sample size for the survey questionnaire and the semi-structured interviews could have been larger to ensure wider coverage of institutions and practitioners.
- (ii) Limited coverage of the survey questionnaire: the questionnaire did not cover all areas in the required detail. Areas like sales, profit margin and other factors, which are important in determining how successful the new products are, were excluded to reduce the size of the survey and address concerns over the confidentiality of sensitive information.
- (iii)Limited time and budget allocated to the research: the research was funded by the researcher with no support from other institutions which meant that travelling to meet more practitioners to increase the number of semi-structured interviews was limited according to the available budget.

However, taking into account the number of completed questionnaires and interviews, the impact of the difficulties and limitations regarding the validity of the results can be considered as mitigated.



CHAPTER 6

ANALYSING THE CHARACTERISTICS OF THE RESPONDENTS AND THEIR INSTITUTIONS: DESCRIPTIVE DATA ANALYSIS

6.1 INTRODUCTION

The data analysis for this research is spread over three empirical chapters that follow closely the questionnaire's three parts' layout. This chapter summarises the findings of the descriptive analysis in relation to characteristics of the respondents and their institutions by analysing the primary quantitative data generated from the first part of the questionnaire.

The questionnaire design and structure have been described in details in Chapter 5 (Research Methodology) which also covered the process used to collect the data through the questionnaire and the steps taken by the researcher to ensure reliability and validity of the collected data.

The objective of this descriptive analysis chapter is to build a picture about the different characteristics of the respondents' institutions in an attempt to identify any existing patterns and similarities among the sample. In doing so, different types of statistics including frequency distribution, mean and standard deviation are used through the SPSS statistical package. Then general observations are made and the findings are examined and analysed.

The pattern of statistical analysis closely follows the sequence of the questions. At the end of the chapter, the findings are summarised with concluding remarks about the main descriptive findings of the first section of the questionnaire.

6.2 OVERVIEW OF THE QUESTIONNAIRE

As discussed previously in Chapter 5, the questionnaire was distributed by targeted emails to 127 potential respondents from around the world. The total number of



completed questionnaires received was 49 out of which 4 were disqualified. 45 were considered valid, resulting in a valid response rate of 35%, nevertheless, representing a diverse geographical spread of different types of Islamic financial institutions.

The questionnaire has a total of 42 questions divided into 3 sections. The first section covers the characteristics of the respondents and their institutions, while the second section covers strategy, plans and organisational structure of the institution in relation to product development process. The third section focuses on identifying the design and the detailed step-by-step process for product development as implemented by the institution, then capturing the respondent perception in relation to the difficulties and risks that are usually considered by the institution while developing new products.

6.3 CHARACTERISTICS OF THE RESPONDENTS AND THEIR INSTITUTIONS

The first part of the questionnaire is composed of 11 questions aiming at identifying different characteristics of the respondents and their institutions. The personal details of the respondents and the name of their institutions have been kept confidential in line with the research's ethical stance and to ensure objectivity of the analysis. Therefore, questions number 1 (name of the respondent) and 3 (name of the institution) are not included in this analysis.

The questionnaire uses many variables to capture the different characteristics of the institutions in the sample including their location, size, age, nature of activities and whether the institution has a *Shari'ah* Supervisory Board 'SSB' and Internal *Shari'ah* Advisor.

6.3.1 The Respondents' Positions

Table 6.1 provides information regarding the positions of the respondents in their institutions. The respondents in the sample worked in different positions and represented a rich variety of different functions within the Islamic financial institutions.



_									
(Q2) Po	osition of Respondent								
		Frequency	Percent	Mean	Std. Deviation				
Valid	CEO	7	15.6						
	Senior Manager	12	26.7						
	Manager	10	22.2		1 5 4				
	Product Manager	7	15.6	3.09	1.564				
	Shari'ah Advisor	4	8.9						
	Shari'ah Auditor	5	11.1						
	Total	45	100.0						

Table 6.1: Respondents' Positions

The analysis in Table 6.1 shows that 15.6% of the respondents were holding the position of CEO, while 26.7% held the position of senior manager. Those with manager position were represented by 22.2% of the sample, while product managers represented 15.6% of the sample. From the *Shari'ah* department, *Shari'ah* advisors represented 8.9% of the sample and finally those who held the position *Shari'ah* auditors represented 11.1% of the respondents in the sample.

6.3.2 Geographic Distribution of the Sample

Table 6.2 provides information regarding the geographical location of the financial institutions represented in the sample. While the data gathered through the questionnaire requested the respondents to provide the country where the institution is located, the researcher found it to be useful, for inferential analysis, to regroup the institutions in relation to their geographical regions. Therefore a new variable for region is created covering five different regions including Middle East, Far-East, Africa, Europe and US, and data is recoded accordingly. The result of the analysis is provided in Table 6.2 in two forms, the first is country-wise, while the second is region-wise.

Country-wise analysis, depicted in the first part of the table, shows that 20% of the participating financial institutions are located in Bahrain, followed by 13.3% from the UK, 11.1% are located in Qatar and 8.9% are located in KSA, while each of Luxembourg, Malaysia, Pakistan and Syria represents 6.7% of the sample. In addition, Oman, the UAE and the USA, each represented 4.4% of the sample. Finally, Egypt, Indonesia and Kenya have one institution in the sample and each country is represented by 2.2% of the sample.



In terms of regions, Middle Eastern countries (covering GCC countries, Syria and Pakistan) have the highest representation in the sample with 62.2%. In addition, Europe is represented by 20% of the sample, followed by the Far-East that is represented by 8.9% of the sample. Africa and the US came last and each is represented by 4.4% of the sample.

(Q4) Loc	Q4) Location of the Institutions (By country)								
		Frequency	Percent	Valid Percent	Cumulative Percent				
Valid	Bahrain	9	20.0	20.0	20.0				
	UK	6	13.3	13.3	33.3				
	Qatar	5	11.1	11.1	44.4				
	KSA	4	8.9	8.9	53.3				
	Luxembourg	3	6.7	6.7 6.7	60.0 66.7				
	Malaysia	3	6.7	6.7	73.3				
	Pakistan	3	6.7	6.7	80.0				
	Svria	3	6.7	4.4	84.4				
	Oman	2	4.4	4.4	88.9				
	UAE	2	4.4	4.4	93.3				
	USA	2	4.4	2.2	97.8				
	Egypt	1	2.2	2.2	100.0				
	Indonesia	1	2.2						
	Kenva	1	2.2						
	Total	45	100.0	100.0					
(Q4) Loc	ation of the Institution	ons (By region)							
		Frequency	Percent	Valid Percent	Cumulative Percent				
Valid	Middle East	28	62.2	62.2	62.2				
	Europe	9	20.0	20.0	82.2				
	Far-East	4	8.9	8.9	91.1				
	Africa	2	4.4	4.4	95.6				
	US	2	4.4	4.4	100.0				
	Total	45	100.0	100.0					

Table 6.2: Location of Respondents' Institutions

In reflecting on the findings in this section, the concentration of institutions in Bahrain and the GCC (as a region) are understandable as the majority of Islamic financial institutions in the world are located in the GCC, with Bahrain having the highest number of institutions in the GCC area. As such, the sample provides a fair representation of the total universe of Islamic financial institutions on global scale.



6.3.3 Age Distribution of Institutions

Table 6.3 presents findings on the age of the financial institutions included in the sample. While the questionnaire refers to the exact year in which each of the financial institution was established, the researcher found it to be more practical to present the analysis related to this question in the form of age groups. Therefore, five period groups are created, covering the entire range from 1975 to 2012 as reported by the respondents. The answers were then re-coded in SPSS to create the five groups, which covered the periods from 1975 -1984, 1985 – 1994, 1995 – 2004 and 2005 – 2012.

The age groups provide comprehensive coverage for the whole history of the Islamic finance industry, as represented in the sample, starting from as early as 1975 when the oldest institution in the sample was founded and up to 2012 when the newest institutions in the sample were established.

(Q5) Year of Establishment						
		Frequency	Percent			
Valid	From 1975 - 1984	7	15.6			
	From 1985 - 1994	4	8.9			
	From 1995 - 2004	9	20.0			
	From 2005 - 2012	25	55.6			
	Total	45	100.0			
Oldest Institution		1975				
Newest Institution		2012				

 Table 6.3: Year of Establishment of Respondents' Institutions

As can be seen in table 6.3, the first group covers the period of 1975 - 1984, during which 15.6% of the institutions in the sample were founded, while 8.9% of the sampled institutions were established in the second period of 1985 - 1994. On the other hand, the 1995 - 2004 period covered 20% of the institutions in the sample indicating that this period witnessed some expansion of Islamic finance. Finally, the 2005 - 2012 period covered 55.6% of the sample evidencing that over half of the institutions in the sample are newly established.

6.3.4 Distribution of Institutional Size - Number of Employees

Table 6.4 presents the results of analysis regarding the number of employees in each institution in the sample. The institutions are clustered into 7 groups staring with



smallest size from 1 to 100, then 101 to 500, 501 to 1000, 1001 to 2000, 2001 to 3000, 3001 to 4000 and the last group is from 4001 to 5000 employees. The first group of 1 to 100 has the highest concentration of institutions representing 44.4% of the sample. The second group of 101 to 500 represents 31.1% of the institutions in the sample. This is followed by the groups covering institutions having 501 to 1,000 and 1,001 to 2,000 employees where each represents 6.7% of the institutions in the sample. The next group covers the 2,001 to 3,000 employees range representing only 2.2% of the sample. It can be noted that none of the institutions in the sample falls within the sixth group that covers the range of 3,001 to 4,000 employees. Finally, the last group covers the range of institutions having 4,001 to 5,000 employees which corresponds to 8.9% of the institutions in the sample.

(Qo) Number of Employees in the institution							
		Frequency	Percent				
Valid	From 1 to 100	20	44.4				
	From 101 to 500	14	31.1				
	From 501 to 1000	3	6.7				
	From 1001 to 2000	3	6.7				
	From 2001 to 3000	1	2.2				
	From 3001 to 4000	0	0.0				
	From 4001 to 5000	4	8.9				
	Total	45	100.0				
Lowest number of Employees		6					
Highest Number of Employees		5000					

Table 6.4: Number of Employees of Respondents' Institutions

6.3.5 Institutional Size Distribution - Balance Sheet Size

The findings related to the distribution of the sampled institutions in relation to the size of their balance sheet are presented in Table 6.5. The factors considered in the research are capital, financial assets and financial liabilities. The sample is divided into nine groups starting with less than \$1m, then from \$1m to \$5m, \$6m to \$10m, \$11m to \$50m, \$51m to \$100m, \$101m to \$500m, \$501m to \$1b, \$1.1b to \$10b and the last group covers institutions with over \$10b.

In terms of capital, the first three groups (covering institutions with capital range of less than \$1m, \$1m to \$5m, \$6m to \$10m) each is represented by 4.4% of the sampled institutions. The fourth group that covers \$11m to \$50m range represents 13.3% of the institutions in sample, while the fifth group that covers \$51m to \$100m range represents 17.8% of the institutions in the sample.



It is worth noting that, the highest number of institutions falls within the sixth group that covers the \$101m to \$500m range representing 35.6% of the institutions in the sample. The seventh group with range of \$501m to \$1b represents 6.7% of the institutions, while the eighth group with range from \$1.1b to \$10b is represented by 11.1% of the institutions in the sample. The last group that covers the range of over \$10b is represented by only 2.2% of the sample.

(Q7) Most Recent Balance Sheet Figures in US\$								
	Capital		Financia	Financial Assets		Financial Liabilities		
Range	Frequency	Percent	Frequency	Percent	Frequency	Percent		
Less than \$1m	2	4.4	2	4.4	2	4.4		
From \$1m to \$5m	2	4.4	1	2.2	3	6.7		
From \$6m to \$10m	2	4.4	1	2.2	0	0		
From \$11m to \$50m	6	13.3	0	0	6	13.3		
From \$51m to \$100m	8	17.8	5	11.1	2	4.4		
From \$101m to \$500m	16	35.6	20	44.4	17	37.8		
From \$501m to \$1b	3	6.7	3	6.7	3	6.7		
From \$1.1b to \$10b	5	11.1	9	20.0	8	17.8		
Over \$10b	1	2.2	4	8.9	4	8.9		
Total	45	100.0	45	100.0	45	100.0		

Table 6.5: Balance Sheet Size of Respondents' Institutions

The analysis of the figures related to the financial assets shows that the sample is spread over most of the groups with the highest concentration of institutions in the group covering the range of \$101m to \$500m which represents 44.4% of the institutions in the sample. It is followed by the group covering the range of \$1.1b - \$10b representing 20.0% of the institutions in the sample. The group covering the range of \$51m to \$100m comes in the third place and is represented by 11.1% of the institutions in the sample, followed by the group covering the range of over \$10b in the fourth place, which is represented by 8.9% of the institutions in the sample. The remaining groups have lower representations in the sample as the group covering the asset range of \$501m to \$1b represents 6.7% of the institutions in the sample, while the group covering the asset range of less than \$1m represents only 4.4% of the institutions in the sample. Finally, the last two groups covering the range of \$1m to \$5m and \$6m to \$10m each represents 2.2% of the institutions in the sample. None of



the institutions in the sample falls within the group covering the \$11m to \$50m range of financial assets.

As for the liabilities figures, the analysis shows relatively similar pattern to the financial assets figures, where the sample is spread over most of the groups with the highest concentration of institutions in the group covering the range of \$101m to \$500m which represents 37.8% of the institutions in the sample, followed by the group covering the range of \$1.1b to \$10b and representing 17.8% of the institutions in the sample. In third place came the group covering the range of \$11m to \$50m which represents 13.3% of the institutions in the sample, while the group covering the range of over \$10b comes again in the fourth place and is represented by 8.9% of the institutions in the sample. Each of the groups that covered the ranges of \$11m to \$5m and \$501m to \$1b is represented by 6.7% of the institutions in the sample, while each of the groups covering the liabilities range of \$51m to \$100m and less than \$1m, has represented only by 4.4% of the institutions in the sample. None of the institutions in the sample falls within the group covering the range of \$6m to \$10m.

6.3.6 The Nature of Institutions and Activities

Table 6.6 provides details on the nature of activities of the institutions in the sample. The questionnaire provided respondents with 6 different categories that covered the most prominent forms of Islamic financial institutions including Islamic commercial banks, investment banks, Islamic banking windows, retail banks, Islamic funds and *takaful* operators and a free space option under 'other' to capture any other type that is not listed in the questionnaire.

(Q8) Nature of Activities								
		Frequency	Percent	Mean	Std. Deviation			
Valid	Islamic Commercial Bank	16	35.6					
	Islamic Investment Bank	12	26.7					
	Islamic Banking Window	4	8.9	2.69	1.832			
	Islamic Retail Bank	2	4.4					
	Islamic Fund	5	11.1					
	Takaful Operator	6	13.3					
	Total	45	100.0					

Table 6.6: Nature of Activities of Respondents' Institutions



The analysis of the results in table 6.6 shows that the highest concentration of institutions in the sample is for Islamic commercial banks, represented by 35.6% of the sample. This is followed by Islamic investment banks that represent 26.7% of the sample. *Takaful* operators come next, representing 13.3% of the sample, while Islamic funds represent 11.1% of the sample. Islamic banking windows represent 8.9% of the sample, whereas Islamic retail banks represent only 4.4% of the sample. It should be noted that the relatively low mean value of 2.69 confirms the concentration of institutions in the first two types. It is worth noting here that commercial banks and retail banks have very similar activities with minor differences. As retail banks focus mainly on individual consumers and provide basic services to business clients, whereas commercial banks usually provide equal focus on individuals and business clients.

6.3.7 Distribution of Institution by *Shari'ah* Supervisory Board

Table 6.7 presents the findings with regards to the distribution of the sampled institutions according to the *Shari'ah* governance model used in terms of whether the institution has a *Shari'ah* Supervisory Board 'SSB' or not, and if they have, how many members are present in the SSB.

As can be seen in the findings, 95.6% of the sampled Islamic financial institutions reported having a SSB and only two institutions representing 4.4% of the sample reported that they do not to have a *Shari'ah* Supervisory Board.

Among those institutions which have reported having a SSB, only one institution reported to have one SSB member on their board and only one institution reported having two SSB members on their board, thus each representing 2.2% of the sample. It should be noted that institutions with three SSB members are the majority, representing 55.6% of the sample, while institutions with four SSB members represent 15.6% of the sample. Similarly, institutions with five SSB members also represent 15.6% of the sample. Finally, institutions with six SSB members represent 4.4% of the sample. As can be seen in table 6.7, this result is confirmed with relatively high mean value of 3.71.



(Q9) Do	(Q9) Does the institution have a Shari'ah Supervisory Board/Committee?									
		Frequency	Percent	Mean	Std. Deviation					
Valid	One SSB Member	1	2.2							
	Two SSB Members	1	2.2							
	Three SSB Members	25	55.6	3.71	1.236					
	Four SSB Members	7	15.6							
	Five SSB Members	7	15.6							
	Six SSB Members	2	4.4							
	Don't have SSB	2	4.4							
	Total	45	100.0							

 Table 6.7: The SSB in the Respondents' Institutions

6.3.8 Distribution of Institutions According to Shari'ah Advisors

The research further queried the institutions' *Shari'ah* governing structure within the sample in relation to whether the institution has an internal *Shari'ah* advisor and if it does not, who advises the institution on the day-to-day *Shari'ah* related issues. The findings are presented in Table 6.8, which shows that 82.2% of the sampled institutions had an internal *Shari'ah* advisor, while only 8 institutions in the sample representing 17.8% stated that they do not have an internal *Shari'ah* advisor. This result can be further substantiated with a low mean value of 1.18.

As can be seen in the lower panel of table 6.8, those institutions that do not have an internal *Shari'ah* advisor have the function covered in two different ways. The first half of the institutions that did not have an internal *Shari'ah* advisor have requested one of their SSB members to carry out the role of the internal *Shari'ah* advisor. While the other half of the institutions have appointed a specialist *Shari'ah* advisory firm to carry out the function.

(Q10) D	Q10) Does the institution have an internal Shari'ah Advisor?								
		Frequency	Percent	Mean	Std. Deviation				
Valid	Yes	37	82.2						
	No	8	17.8	1.18	0.387				
	Total	45	100.0						
(Q11) If Shari'ah	(Q11) If the institution does not have an Internal <i>Shari'ah</i> Advisor, who advises the institution on the day-to-day <i>Shari'ah</i> related issues?								
		Frequency	Percent	Valid Percent	Cumulative Percent				
Valid	Covered by SSB member	4	8.9	50	50				
	Outsourced to <i>Shari'ah</i> Advisory Firm	4	8.9	50	100				
	Total	8	17.8	100					

Table 6.8: Internal Shari'ah Advisor in the Respondents' Institutions



6.4 CONCLUSION

This chapter, being the first empirical analysis chapter, focuses on providing descriptive analysis for the first part of the questionnaire composed of 11 questions that were designed to explore the characteristics of the respondents and their institutions. Descriptive statistical tests were utilised to analyse the data using mainly frequency distribution, mean value and standard deviation.

The result shows that the respondents represent a rich variety of different functions within the Islamic financial institutions, covering a range of important positions such as CEOs, senior managers, managers, product managers, *Shari'ah* advisors and auditors.

In terms of geographical location, as the findings presented so far shows the GCC countries have the highest representation in the sample followed by Europe, then the Far-East. However, country-wise, the concentration of institutions is in Bahrain, which represents 20% of the sampled institutions.

As for the age distribution of the institutions in the sample, the analysis shows comprehensive coverage for the history of the modern day Islamic finance industry, starting from as early as 1975 up to 2012 when the newest institutions in sample were established.

In terms of size, the questionnaire uses two variables, namely the number of employees and the main balance sheet items. The sample includes a wide range of different sizes of institutions with the majority, 75.5% of the sample, falling within the first two bands of employees' size; namely, institutions having 1 to 100 and 101 to 500 employees. However, in terms of balance sheet size, the concentration of the institutions is in the middle bands, namely \$11m to \$50m, \$51m to \$100m, and \$101m to \$500m.

The distribution of the sample in relation to the nature of activities also indicates that the sample represents the most important types of Islamic financial institutions, with Islamic commercial banks forming the highest concentration of institutions in the sample representing 35.6%.



Shari'ah governance model adopted by the institutions in the sample is verified using two variables covering whether the institution has a SSB and an internal *Shari'ah* advisor. The analysis shows that the vast majority of the institutions, 95.6%, have instated a SSB to oversee the *Shari'ah* function within the institution with the majority of the institutions 55.6% forming their SSB with three members. Similarly, the majority of the institutions representing 82.2% of the sample have an internal *Shari'ah* advisor who assists the institution on the day-to-day *Shari'ah* related issues.

The findings of this chapter indicate that the sample provides a wide spread coverage across a range of different variables that can be used as independent variables to perform inferential statistical analysis on the relevant data in an attempt to answer the research questions and test the generated hypotheses developed in Chapter 5.



CHAPTER 7

EXPLORING STRATEGIES, PLANS, STRUCTURE AND RESOURCES AVAILABLE FOR PRODUCT DEVELOPMENT PROCESS: DESCRIPTIVE AND INFERENTIAL DATA ANALYSIS

7.1 INTRODUCTION

The previous Chapter provided descriptive analysis on the first part of the questionnaire covering the first 11 questions aimed at identifying different profile-related characteristics of the respondents and their institutions.

The second part of the questionnaire focuses on the strategy, plans and organisational structure of the institutions in relation to product development process, using 12 questions. The aim of this chapter, hence, is to establish the importance given to product development and to identify the main drivers behind product development in Islamic financial institutions through the perceptions and opinions expressed by the participants in the questionnaire. It also attempts to investigate the organisational structure related to product development within the sample institutions and the resources available in terms of staff and funds through the opinions expressed.

This chapter attempts to provide statistical analysis on the data collected using both descriptive and inferential analysis. The descriptive analysis is used to build an understanding of the current product development process implemented by the institutions in the sample by focusing on strategies, plans, structure and resources. In addition, inferential analysis is used to identify whether there are any significant differences in the way the participants' institutions manage product development, using the institution's location, size, age, nature of activities and the respondent's position as independent variables. Furthermore, factor analysis is also employed to give further meaning to selected data.



The pattern of analysis closely follows the sequence of the questions. At the end of the chapter the findings are summarised with concluding remarks about the main descriptive and inferential findings of the second part of the questionnaire.

7.2 DESCRIPTIVE DATA ANALYSIS AND RESULTS

The data analysis in this chapter starts by providing descriptive analysis for each of the 12 questions that form the second part of the questionnaire, to build a picture of how the institutions in the sample design their strategies, develop their plans, setup their structure and what type of resources they allocate to the product development process.

7.2.1 Market Positioning

Table 7.1 provides the findings generated from the analysis of the market positioning of the institutions in relation to product development as enquired by question 12. The respondents were offered four different categories to choose the description that fits best to their institutions' current position in the market.

As depicted in table 7.1, 33.3% of the institutions in the sample position themselves in the first category of 'developing new products in existing markets', while 28.9% of the sample has positioned themselves in the second category of 'developing new products in new markets'. In addition, the third category that referred to 'expanding existing products in existing markets' is represented by 24.4% of the sample and the last category that refers to 'marketing exiting products in existing markets' is represented by 13.3% of the institutions in the sample. Thus, the majority of the institutions in the sample appear to have a strategy for developing new products (62.2% covering the first 2 categories), while the remaining institutions have positioned themselves as expanding existing products within existing market or new markets. This result can be further substantiated with the low mean value of 2.33.



(Q12) How would you best explain the market position of your institution in relation to developing new products?								
	Frequency Percent Mean Std. Deviation							
Valid	Developing new products in existing markets	15	33.3					
	Developing new products in new markets	13	28.9					
	Expanding existing products in existing markets	11	24.4	2.33	1.148			
	Marketing existing products in new markets	6	13.3					
	Total	45	100.0					

Table 7.1: Institutions' Market Position in Relation to Developing New Products

It should be noted that different variables can affect the choice of strategy and marketpositioning of the institutions in the sample. For example, one of these variables may be the age of the institution as the researcher believes that new institutions tend to develop new products while older institutions tend to work on achieving higher penetration in the existing market or expand into new markets using existing products. This however will be discussed in the second part of this chapter where the relationship between the choice of strategy and the age of the institution will be tested to establish whether there are any significant differences between the respondents.

7.2.2 The Importance of Product Development

Table 7.2 depicts the results of the analysis in relation to the importance of product development within the sample institutions. The respondents were asked six different questions covering the institution's vision, strategy, processes, plans (annual or medium term plans) and budget in an attempt to identify each institution's position on innovation and product development.

In relation to the first question (13.a) that enquires about the institution's vision or mission statement and whether it included the word 'innovation', 64.4% of the institutions in the sample confirmed having innovation as part of their vision or mission statement, while the remaining 35.6% do not, which indicates that over a third of the institutions in the sample have not considered innovation to be important enough to include it in their vision or mission statement.

The second question (13.b) enquires about the institutional strategy and whether developing and innovating new products is part of it. An overwhelming majority of the institutions, 91.1% of the sample, has replied positively, indicating that developing



new and innovative products is an important part of the strategy as seen by the Islamic financial institutions represented in the sample.

The third question (13.c) attempts to identify whether the institution has a formal process or approach for innovation. The respondents were divided almost equally with 51.1% of the sample, confirming that they have a formal process or approach for innovation, whereas the remaining 48.9% of the sample do not have a formal process or approach for innovation.

 Table 7.2: Defining the Importance of Product Development within the

 Institution

(Q13.a) Does the institution's vision or mission statement includes 'innovation'?							
		Frequency	Percent	Valid Percent	Cumulative Percent		
Valid	Yes	29	64.4	64.4	64.4		
	No	16	35.6	35.6	100.0		
	Total	45	100.0	100.0			
(Q13.b)	Is developing new	and innovative p	roducts part of th	e institution's overall st	rategy?		
		Frequency	Percent	Valid Percent	Cumulative Percent		
Valid	Yes	41	91.1	91.1	91.1		
	No	4	8.9	8.9	100.0		
	Total	45	100.0	100.0			
(Q13.c)	Does the institutio	n have a formal a	pproach/process	for innovation?			
		Frequency	Percent	Valid Percent	Cumulative Percent		
Valid	Yes	23	51.1	51.1	51.1		
	No	22	48.9	48.9	100.0		
	Total	45	100.0	100.0			
(Q13.d)	Is there an annual	plan for the numb	plan for the number of new products to be developed?				
		Frequency	Percent	Valid Percent	Cumulative Percent		
Valid	Yes	23	51.1	51.1	51.1		
	No	22	48.9	48.9	100.0		
	Total	45	100.0	100.0			
(Q13.e)	Is there a medium-	-term plan for new	v product develop	oment with a 3 or 5 yea	r perspective?		
		Frequency	Percent	Valid Percent	Cumulative Percent		
Valid	Yes	22	48.9	48.9	48.9		
	No	23	51.1	51.1	100.0		
	Total	45	100.0	100.0			
(Q13.f) 1	s there an annual	budget allocated f	or developing ne	w products?			
		Frequency	Percent	Valid Percent	Cumulative Percent		
Valid	Yes	18	40.0	40.0	40.0		
	No	27	60.0	60.0	100.0		
	Total	45	100.0	100.0			



By cross-referencing the results for questions 13.b and 13.c with the findings produced for question 13.a, it becomes clear that while 64.4% of the sample has innovation in their vision or mission statement (as per the results of the first question above), in practice only 51.1% have actually developed a process or adopted a certain approach to facilitate the innovation within the institution. Similarly, while only 35.6% have not used the word 'innovation' in their vision or mission statement (as per the results of the first question above), in practice, the percentage of the institutions that do not have a process or an approach towards innovation has increased to 48.9%, indicating a lower priority within the sample institutions to translate the vision and mission statement into actual process when it comes to innovation.

The forth question in this section (13.d) focuses on identifying whether the institution has an annual plan for developing new products. The respondents are divided again almost equally regarding this issue with 51.1% of the sample, confirming that they have an annual plan with set number of new products that will be developed during the year, whereas, the remaining 48.9% of the sample, does not have such annual plan.

It should be noted that when the results of this question are cross-referenced with the results of question 13.b, the findings indicate that while 91.1% of the sample has innovating new products as part of their strategy (as per the second question results above), in practice only 51.1% have actually developed an annual plan with clear target to develop a certain number of new products. Similarly, while only 8.9% do not include innovating new products in their strategy (as per the second question results above), in practice the percentage of the institutions that do not have an annual plan for developing new products has increased to 48.9%, indicating a lower priority within the sample institutions to translate their strategy into actual plans when it comes to innovating new products.

The fifth question (13.e) follows the previous question in a bid to fully understand the institutions' plans for product development in the medium-term. The results show that 48.9% of the sample confirms having a medium-term plan for product development, compared to 51.1% of the sample, stating that they do not have a medium-term plan for product development. By comparing this result with the results of question 13.d above, it indicates that while 51.1% of the sample has an annual plan for product



development (as per the fourth question results above), this percentage has dropped to 48.9% for medium-term plan, indicating a relatively short-term vision for product development within the sample institutions.

The last question (13.f) under this section aims at identifying whether the institutions in the sample have set aside an annual budget for developing new products. The analysis shows that 40% of the sample confirms having a budget for product development, compared to 60% of the sample stating that they do not have a specific budget for product development which is further evidenced by the relatively high mean value of 1.60. Comparing this result with the findings established for question 13.d, it indicates that while 51.1% of the sample have plans for product development (as per the question 13.d results), only 40% have actually allocated a budget to develop the products. This may indicate that the participating institutions have low level of priority for product development and innovation.

7.2.3 The Main Drivers Behind Product Development

Table 7.3 provides the findings in relation to the person or the department that is considered to be the main driver for product development within the participating institutions. The respondents were offered several alternatives to choose from, starting from the top level of the institution represented by the Board of Directors, followed by the CEO or the president of the institution, followed by different options within different departments including *Shari'ah* advisors. The respondents were allowed to choose more than one option.

(Q14)	(Q14) Who, in your institution, can be best described as the main driver for product development?								
		Frequency	Percent	Rank					
Valid	Head of Relevant Business Department	20	44.4	1					
	CEO/President	18	40.0	2					
	Product Development Department	17	37.8	3					
	Research & Development Department	9	20.0	4					
	Marketing Department	7	15.6	5					
	Board of Directors	7	15.6	5					
	Internal / External Shari'ah Advisor	5	11.1	6					
	Strategy / Planning Department	5	11.1	6					

Table 7.3: The Main Drivers behind New Product Development



The findings in table 7.3 depict that there is more than one driver as the total of the percentages is more than 100% where the drivers behind product development seem to vary from one institution to another. However, the trend seems to be pointing towards the head of the relevant business department according to 44.4% of the institutions in the sample. While according to 40% of the institutions in the sample, the next main driver in the institution is the CEO or the president of the institution who seems to play an important role in driving product development within the institution.

The third main driver that has been pointed out by the sample is the product development department with 37.8% of the sample selecting the product development department as the main driver. This is followed by the research and development department as the fourth main driver chosen by 20% of the sample.

Both marketing department and the Board of Directors came in the fifth position with each being indicated by 15.6% of the sample as one of the main drivers behind product development. The sixth and last position is shared between the planning or strategy department and the *Shari'ah* advisors with each being indicated by 11.1% of the sample as one of the main drivers behind product development.

7.2.4 The Availability of Resources for Product Development

The following Table 7.4 depicts the findings on the availability of resources in relation to the most important elements of product development, namely budget, people and technology (in the form of hardware and software) and whether the institution has specifically allocated these resources or whether such resources are allocated subject to requirements or no resources are specifically allocated for product development.

The analysis shows that in relation to budget allocation 42.2% of the sample does not have any budget specifically allocated for product development, whereas 48.9% of the sample would allocate budget if and when needed. In addition, only 8.9% of the sample has a budget specifically allocated for product development. The results indicate a low level of commitment to allocate specific budget and to invest in innovating new products within the sample.



(Q15) How wou within your inst	(Q15) How would you rank the availability of resources for Product Development in the following categories within your institution?								
		Nothing specifically allocatedAllocated subject to requirements		Specifically allocated	Total				
Financial	Count	19	22	4	45				
(budget)	Percent	42.2%	48.9%	8.9%	100%				
People	Count	7	25	13	45				
(knowledge, skills, etc)	Percent	15.6%	55.6%	28.9%	100%				
Technology	Count	12	22	11	45				
(appropriate hardware and software)	Percent	26.7%	48.9%	24.4%	100%				

Table 7.4: The Availability of Resources for Product Development

These findings seem to differ from the earlier results obtained from question 13.f that had a similar enquiry about the availability of budget for product development. The results in question 13.f indicate that 18% of the sample institutions have a budget allocated to product development, while only 8.9% do so under this question. The difference in the results may be due to some respondents, out of the 48.9% represented under this question, indicating that their institutions will allocate budget as and when required positively under question 13.f.

The picture in relation to allocation of people into product development is slightly different from that of the budget, as the results show that only 15.6% of the sample does not have people specifically allocated for product development, whereas, 55.6% of the sample allocates people on need basis and subject to the requirements. Those institutions that have specifically allocated people for product development represent 28.9% of the sample. The results indicate that the majority of the institutions in the sample prefer to conduct product development in-house using existing staff rather than allocating budget that can be spent externally.

In terms of technology, as the findings in table 7.4 show, 26.7% of the sample does not have any technology resources allocated specifically for product development, whereas, 48.9% of the institutions in the sample allocate technology resources as and when required. Finally, 24.4% of the sample has specifically allocated technology resources to support the product development within their institutions.



7.2.5 Institutional Ownership of Product Development Process

The first part of the Table 7.5 provides information on whether the institution has a specialised product development department or not, whereas, the second part of the table provides further findings as to which department is responsible for product development in case the institution does not have a specialised product development department or unit.

The analysis of the results of the first part of the table indicates that only 31.1% of the sample has a specialised department for product development, whereas the majority of the institutions representing 68.9% of the sample do not have a specialised department for product development. This result is confirmed by a relatively high mean value of 1.69.

On the other hand, those institutions that do not have a specialised product development department have used different methods to develop new products. The analysis depicted in the second part of table 7.5, shows that 15.6% of the institutions in the sample use the marketing department to carry out product development within their institutions, while only 6.7% of the sample indicates that they use the *Shari'ah* department or *Shari'ah* advisor to lead on the product development within their institutions. As noted, only 2.2% of the sample institutions use the strategy and planning department for product development, while 8.9% of the sample uses the research and development department. Using the relevant business department to directly develop the products they need seems to be frequent among 17.8% of the sample. Finally, 48.9% of the sample, reported under system missing, consists of 17.8% of the sample who have chosen not to answer this question while the remaining 31.1% represents those institutions that have a specialised product development department. This result can be further substantiated by the high mean value of 3.13.



(016) D	(O16) Does a central specialised Product Development department exist in your institution?						
	*	Frequency	Percent	Mean	Std. Deviation		
Valid	Yes	14	31.1				
	No	31	68.9	1.69	0.468		
	Total	45	100.0				
(Q17) If Develop	(Q17) If you answered No to the previous question, please specify which department is responsible for Product Development?						
	Frequency Percent Mean Std. Deviation						
Valid	Marketing Department	7	15.6				
	Shari'ah Department/Advisor	3	6.7				
	Strategy/Planning Department	1	2.2				
	Research & Development	4	8.9	3.13	1.740		
	Department						
	Relevant Business Department	8	17.8				
	System Missing	22	48.9				
	Total	45	100.0				

Table 7.5: Which Department is Responsible for Product Development

7.2.6 Fulltime Staff Working in Product Development

Table 7.6 provides the findings on the human resources available in the form of fulltime staff involved in product development within the institutions in the sample. The analysis indicates that a considerable percentage of the institutions, 35.6% of the sample, do not have any fulltime staff working on product development, whereas 40% of the institutions in the sample have 1 to 3 fulltime staff working on product development. The analysis also shows that 17.8% of the sample has 4 to 6 fulltime staff working on product development, while only 6.7% of the sample has over 6 fulltime staff working in the same area. This result indicates that employing fulltime staff for product development is a low priority for the institutions in the sample, which is evidenced by the low mean value of 1.96.

Table	7.6: Availability of Human Resour	ces for Pro	auct Devel	opment	
(Q18) I	How many fulltime staff are involved in Product I	Development?			
		Frequency	Percent	Mean	Std. Deviatio
Valid	No fulltime staff in Product Development	16	35.6		
	1 - 3 fulltime staff in Product Development	18	40.0	1.01	
	4 - 6 fulltime staff in Product Development	8	17.8	1.96	0.903
	Over 6 fulltime staff in Product Development	3	6.7		
	Total	45	100.0		
Minim	um number of fulltime Staff in PD	-	0		-
Maxim	um number of fulltime Staff in PD		10		

Table 7.6: Availability of Human Resources for Product Development



7.2.7 Authority to Approve New Products

Table 7.7 presents the findings as to whether the institution has a particular person that is responsible for authorising new products and if yes what is the position of this individual within the institution. As the results illustrate, the majority of the institutions, representing 51.1% of the sample, do not have a particular individual responsible for authorising new products which may indicate that products are approved by a group of people or a committee responsible for approving new products. However, for those institutions that have a particular individual to authorise new products, the CEO seems to be the more likely individual to sign off new products with 22.2% of the sample keeping the control of introducing new products in the hands of their CEOs. In addition, the heads of business departments come straight after the CEO with 17.8% of the institutions in the sample entrusting their heads of business departments with signing off new products. The rest of the institutions that have a particular individual to authorise new products use different individuals within the institution including head of Research and Development (R&D) department, Chief Risk Officer (CRO), Product Manager or Shari'ah Advisor, each of these has been selected by one institution, representing 2.2% of the sample.

(Q19) I or title	(Q19) Is there a particular individual who is responsible for authorising new products? If yes, state the position or title of this individual?						
		Frequency	Percent	Mean	Std. Deviation		
Valid	No particular individual is responsible for authorising new products	23	51.1				
	CEO	10	22.2				
	Business Head	8	17.8	0.98	1.390		
	Head of Research & Development Department	1	2.2				
	Chief Risk Officer	1	2.2				
	Product Manager	1	2.2				
	Shari'ah Advisor	1	2.2				
	Total	45	100.0				

7.2.8 Supervision of Product Development

In regards to the supervision of the product development process within the institutions in the sample, the findings are presented in Table 7.8. The first part of the table attempts to establish whether the respondent's institution has a committee responsible for overseeing the development of new products, while the second part of



the table attempts to determine whether such committee has different responsibilities or it has been set up by the financial institution specifically to oversee the product development process.

(Q20) Is	(Q20) Is there a committee responsible for overseeing the development of new products?						
		Frequency	Percent	Mean	Std. Deviation		
Valid	Yes	33	73.3				
	No	12	26.7	1.27	0.447		
	Total	45	100.0				
Product	(Q 21) If you answered Yes to the previous question, is the main responsibility of the committee to oversee the Product Development process?						
		Frequency	Percent	Mean	Std. Deviation		
Valid	Yes	10	22.2				
	No, the committee has other responsibilities	23	51.1	1.70	0.467		
	System Missing	12	26.7				
Total 45 100.0							

Table 7.8: The Supervision of the Product Development Process

The analysis of the results, as depicted in the first part of table 7.8, shows that the majority of the institutions, namely 73.3% of the sample, has a committee responsible for overseeing the product development process, while the remaining 26.7% of the institutions do not have a committee to oversee the development of new products. This is further confirmed by the low mean value of 1.27.

The second part of the table 7.8 shows that within the institutions that have a committee to oversee the product development process, only 22.2% have a committee with a main responsibility of overseeing the development of new products, whereas, the committees in the majority of the institutions, representing 51.1% of the sample, has other responsibilities besides overseeing the process of developing new products. This is further evidenced by the high mean value of 1.70.

7.2.9 The Role of the Shari'ah Advisor

The findings with regard to the role that the *Shari'ah* advisor plays in the product development process are depicted in Table 7.9. The first part of the table attempts to establish whether the *Shari'ah* advisor of the respondent institution (whether internal or external advisor) gets involved in the process of product development, while the second part of the table endeavours to determine the different stages of the product development process that the *Shari'ah* advisor will be required to be involved in.



The results of the first part of the table 7.9 show that 95.6% of the sampled institutions require their *Shari'ah* advisor to be involved in the product development process. The significantly low mean value of 1.04 is further evidence that supports this result. However, the level and the type of involvement of the *Shari'ah* advisor in the product development process may vary from one institution to another.

The results depicted in the second part of the table 7.9 show the details related to the *Shari'ah* advisor's involvement in the different stages of the product development process. In this regard, 75.6% of the sample requires the *Shari'ah* advisor to be involved in formulating the concept stage of the new product. This result is confirmed with the low mean value of 1.24. In relation to the product design stage, 60% of the institutions in the sample require the *Shari'ah* advisor to be involved in this stage. This result can be further substantiated with the relatively low mean value of 1.40.

As can be seen in the findings, 84.4% of the institutions in the sample do not require their *Shari'ah* advisor to be involved in the pricing stage, which is further evidenced by the high mean value of 1.84.

As for the legal documentation review, 91.1% of the sampled institutions require their *Shari'ah* advisor to be involved in reviewing the legal documentation. This result is confirmed with quite low mean value of 1.09. Similarly, 77.8% of the sampled institutions require their *Shari'ah* advisor to be involved in the process of submitting the product documentation for obtaining the SSB approval.

The implementation stage seems to have a unique position as the institutions in the sample seem to be divided regarding the involvement of the *Shari'ah* advisors in this stage with 48.9% requiring their *Shari'ah* advisor to be involved while the remaining 51.1% do not require their *Shari'ah* advisor to be involved in the implementing stage.

In relation to the marketing stage, the analysis shows that the majority of the institutions in the sample, 73.3%, do not require their *Shari'ah* advisor to be involved in marketing the new product. This result is confirmed with high mean value of 1.73. Similarly, the majority of the institutions in the sample, 82.2%, do not require their *Shari'ah* advisor to be involved in the product testing, which is substantiated with the high mean value of 1.82.



Finally, in relation to the *Shari'ah* audit stage (after the product is launched), the majority of the institutions in the sample 73.3% require their *Shari'ah* advisor to be involved in the *Shari'ah* audit stage. This result is confirmed with low mean value of 1.27.

(Q22) W	(Q22) Would the in-house/external Shari'ah Advisor be involved in the Product Development process?						
		Frequency	Percent	Mean	Std. Deviation		
Valid	Yes	43	95.6				
	No	2	4.4	1.04	0.208		
	Total	45	100.0				
(Q23) If	you answered Yes to the previou	s question, plea	ase identify the	e involvement of th	e Shari'ah Advisor in		
the follo	owing:		-	•			
Concept	stage	Frequency	Percent	Mean	Std. Deviation		
Valid	Yes	34	75.6				
	No	11	24.4	1.24	0.435		
	Total	45	100.0				
Design s	stage	Frequency	Percent	Mean	Std. Deviation		
Valid	Yes	27	60.0				
	No	18	40.0	1.40	0.495		
	Total	45	100.0				
Pricing	stage	Frequency	Percent	Mean	Std. Deviation		
Valid	Yes	7	15.6	1.04	0.077		
	No	38	84.4	1.84	0.367		
	Total	45	100.0				
Reviewi	ng legal documentation from						
Shari'ah	<i>i</i> point of view	Frequency	Percent	Mean	Std. Deviation		
Valid	Yes	41	91.1	1.00	0.000		
	NO	4	8.9	1.09	0.288		
	Total	45	100.0				
Submitti	ing product documentation for						
approva	l by the SSB	Frequency	Percent	Mean	Std. Deviation		
Valid	Yes	35	77.8				
	No	10	22.2	1.22	0.420		
	Total	45	100.0				
Impleme	entation stage	Frequency	Percent	Mean	Std. Deviation		
Valid	Yes	22	48.9	1.51			
	No	23	51.1	1.51	0.506		
	Total	45	100.0				
Marketin	ng stage	Frequency	Percent	Mean	Std. Deviation		
Valid	Yes	12	26.7				
	190		/3.3	1.73	0.447		
	Total	45	100.0				
Testing	stage	Frequency	Percent	Mean	Std. Deviation		
Valid	Yes	8	17.8	1.02			
	No	37	82.2	1.82	0.387		
	Total	45	100.0				
Shari'ah	audit stage (after product is						
launchee	d)	Frequency	Percent	Mean	Std. Deviation		
Valid	Yes	33	73.3	1.07	o ()=		
	INO	12	26.7	1.27	0.447		
	Total	45	100.0				

Table 7.9: Shari'ah Advisor's Role in Product Development Process



The analysis so far has focused on the descriptive statistics in order to provide a foundation that will be used to build further critical analysis through inferential data analysis in the next section.

7.3 INFERENTIAL DATA ANALYSIS AND RESULTS

In the previous section, the data collected from the twelve questions forming the second part of the questionnaire was analysed using descriptive statistics to build a foundation on how the institutions in the sample design their strategies, develop their plans, setup their structure and allocate resources for the product development process. In this section, inferential analysis is used to identify whether there are any significant differences among the responses provided by the participants in relation to a number of independent variables such as the institution's location, size, age, nature of activities and the respondent's position *vis-à-vis* the number of issues identified in the section above.

The inferential statistics analysis employs mainly Kruskall-Wallis (KW) test as a tool for non-parametric data analysis. The significance level used for the Kruskal-Wallis test in this research is 10%, instead of the usual 5% used by most researches, to allow the researcher to examine a higher degree of difference in opinion among the sample. Thus, only the results that showed statistically significant differences at 10% (p value <0.10) are depicted in the KW tests tables below. In addition, factor analysis was also applied on question 23 to help in identifying the factors that have largely or entirely contributed to the differences in opinions among the respondents. The findings of the tests are presented and interpreted.

It should be noted that in some cases and to avoid details, various analysis were brought together in one table to consolidate the analysis in a concise manner.

7.3.1 Identifying Differences in Opinion in Relation to the Second Part of the Questionnaire

The inferential analysis using the KW test begins by testing question 12, which inquired about the institution's market positioning in relation to product development.



The results related to all independent variables, namely; the institution's location, size (by balance sheet items and by number of employees), age, nature of activities and respondent's position, indicate that, statistically, there are no significant differences in opinion among the participants, as the relatively high p value exceeded the critical p value of 0.10. Therefore, such results are excluded from depicting in this section.

In relation to question 13, which investigated the importance of product development within the sample institutions, the respondents were asked 6 different questions covering the institution's vision, strategy, processes, plans (annual or medium term plan) and budget in an attempt to identify each institution's position on innovation and product development. The results of KW test of question 13 indicate that there are statistically significant differences in relation to the respondents' positions, the institutions' geographical location by region, their size according to the number of employees and the nature of activities. However, the results did not provide any pattern that can be explained and therefore they were not presented in this research.

The results of the inferential analysis using the KW test for question 14, which attempted to identify the person that is considered to be the main driver for product development in the institution, did not provide the researcher with any clear indication that can be interpreted to explain the differences in opinion among the participants.

The next question tested was question 15, which investigated the availability of resources for product development purposes in terms of budget, people and technology. Table 7.10 presents the findings of the KW test analysis for question 15 against the independent variables with significant p value.

The test results indicate that there are no statistically significant differences in opinion among the participants in relation to the respondents' positions and in relation to institutions' sizes (whether by balance sheet items or by the number of employees) or in relation to their nature of activities. However, there are statistically significant differences in relation to the institutions' geographical location (by region) and their ages.



In terms of geographical location, the findings from the KW test in table 7.10 indicate that there are statistically significant differences in relation to the availability of both people and technology as resources for product development with both elements having a p value <0.10.

The statement in relation to the 'availability of people' has a p value of 0.081 indicating a statistically significant difference among the respondents at 0.10 significance level according to the geographical location of their institutions. The high mean ranking value of 29.50, which is associated with institutions located in Africa and the US, indicates that these institutions are stricter in allocating people specifically to carry out product development compared to institutions in other regions. Whereas, the 'availability of technology' has a p value of 0.035, indicating a statistically significant difference among the respondents at 0.05 significance level according to the geographical location of their institutions. The high mean ranking value of 31.75, which is again associated with institutions located in Africa and US, indicates that those institutions allocate the required technology for product development more strictly than other institutions in the sample located in other regions.

Orrestian	Independent Variables						
Question	Location			Age			
Q15 - How would you rank the availability of resources for Product Development in the following categories within your institution	Category	Mean Rank	Asymp. Sig	Category	Mean Rank	Asymp. Sig	
People (knowledge, skills, etc)	Middle East	24.96	0.081	1975 - 1984	25.43		
	Europe	13.22		1985 - 1994	34.25	0.024	
	Far-East	24.75		1995 - 2004	28.44		
	Africa	29.50		2005 - 2012	18.56		
	US	29.50					
Technology (appropriate hardware	Middle East	24.57		1975 - 1984	30.50		
and software)	Europe	12.17		1985 - 1994	35.88		
	Far-East	27.63	0.035	1995 - 2004	25.28	0.008	
	Africa	31.75		2005 - 2012	18.02		
	US	31.75					

Table 7.10	: KW Tes	t Results	for O15
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With regards to the age of the institutions, the KW test results in table 7.10 indicate that there are statistically significant differences again in relation to the availability of both people and technology as resources for product development with both elements having a p value <0.10.

Testing the 'availability of people' using the age of the institution as the independent variable returned a p value of 0.024, indicating a statistically significant difference among the respondents at 0.05 significance level. The highest mean ranking value of 34.25, which is related to institutions established in the period 1985 – 1994, indicates that institutions that were established in this period are stricter in allocating people specifically to carry out product development compared to other older or younger institutions in the sample.

As regards to the 'availability of technology', it has a p value of 0.008 indicating statistically significant differences among the respondents at 0.05 significance level according to the age of their institutions. The high mean ranking value of 35.88, which is again associated with institutions established in the period 1985 – 1994, indicates that these institutions allocate the required technology for product development more strictly than other older or younger institutions in the sample.

As regards to question 16 that enquires as to whether the institution has a specialised product development department or not, the findings indicate that there are no statistically significant differences in opinion among the respondents in relation to the respondents' positions and the institutions' size (by balance sheet items), geographical location (by region) or the institutions' age. However, there are statistically significant differences in relations' size (by number of employees) and according to their nature of activities. Nevertheless, the results did not provide any pattern that can be explained and therefore they were not presented in this research.

The inferential analysis using the KW test is carried out next for question 17, which is a follow up on question 16 and enquired about which department is responsible for product development in case the institution does not have a specialised product development department or unit.



The KW test results related to all independent variables indicate that there are no statistically significant differences in opinion among the participants, as the test against all independent variables returned a high p value exceeding 0.10. This result implies that, in general, the majority of the participants do not have significant differences in their views about the department responsible for product development in their institutions in relation to the independent variables.

The next question tested is question 18, which investigates the availability of human resources in the form of fulltime staff working on product development within the institutions in the sample. However, the test results indicate that there are no statistically significant differences in opinions among the respondents in relation to the respondents' positions and in relation to institutions' age, size (whether by number of employees or by balance sheet items), or by their nature of activities. On the other hand, as depicted in Table 7.11, the test results indicate that there are statistically significant differences among the participants' opinions in relation to the institutions' geographical location.

Question		Q18 - How many staff members are involved in Product Development related activities on a full time basis?			
Independent Variable	Category	Total	Mean Rank	Asymp. sig	
Geographic Location	Middle East	28	23.07		
Geographic Location	Europe	9	14.17		
	Far-East	4	33.38	0.021	
	Africa	2	25.50	0.031	
	US	2	38.50		
	Total	45	-		

Table 7.11: KW Test Results for Q18

The KW test results associated with the institutions' geographical locations, as illustrated in table 7.11, has a p value of 0.031, which indicates that there is a statistically significant difference among the respondents at 0.05 significance level. The highest mean ranking value of 38.50 is associated with institutions located in the US, indicating that those institutions are more likely to have a higher number of full time staff working on product development compared to other sample institutions located in other regions.



In respect of question 19, which investigates whether the institution has a particular person responsible for authorising new products, and if yes, what is the position of this individual within the institution,

The KW test results of question 19 against the independent variables indicate that there are no statistically significant differences in opinion among the respondents in relation to the respondents' positions and in relation to institutions' size (by number of employees), geographical location (by region), nature of activities or the institutions' age. However, there are statistically significant differences in relation to the institutions' size based on balance sheet items, namely total assets and capital. However, the results did not provide any pattern that can be explained and therefore they were not presented in this research.

As regards to the existence of a committee responsible for overseeing the development of new products in the sampled institutions as stated in question 20, the findings indicate that there are no statistically significant differences in opinion among the respondents in relation to the respondents' positions and in relation to the institutions' size (by number of employees), geographical location (by region), nature of activities or the institutions' age. However, as depicted in Table 7.12, there are statistically significant differences in relation to the institutions' size by one of the balance sheet items, which is capital.

Question		Q20 - Is there a committee responsible for overseeing the development of new products?		
Independent Variable Category		Mean Rank	Asymp. sig	
	Less than \$1m	28.25		
Size (Capital)	\$1m - \$5m	39.50		
	\$6m - \$10m	28.25		
	\$11m - \$50m	28.25	0.074	
	\$51m - \$100m	17.00	0.074	
	\$101m - \$500m	24.03		
	\$501m - \$1b	17.00		
\$1.1b - \$10b		17.00		
	Over \$10b	17.00		

Table 7.12:	KW	Test	Results	for	Q20
				-	· · ·


As the findings in table 7.12 show, the KW test results for the institutions' size by capital show a p value of 0.074, indicating that there is a statistically significant difference among the respondents at 0.10 significance level according to the size of the capital of the institutions. The highest mean ranking in the table with a value of 39.50 is associated with institutions that have a capital between \$1m and \$5m, indicating that these institutions are less likely to have a committee responsible for overseeing the development of new products. Furthermore, looking at the mean ranking patterns, it seems that the bigger the capital of the institution the more likely that the institution will have a committee that is responsible for overseeing the development of new products. This is confirmed with the biggest three categories in table 7.12 showing that institutions with capital size ranging from \$501m to \$1b, \$1b to \$10b and over \$10b, all have the lowest mean ranking value of 17.00.

The next question tested is question 21, which is a follow up on the previous question and attempts to determine whether the committee responsible for overseeing the development of new products has other responsibilities or it has been set up by the financial institution specifically to oversee the product development process. Table 7.13 depicts the KW test results for question 21 against the independent variables with significant p value. The test results indicate that there are no statistically significant differences in opinions among the respondents in relation to the respondents' positions and in relation to institutions' size (by balance sheet items), geographical location (by region), nature of activities or the institutions' age. However, there are statistically significant differences in relation to the institutions' size (by number of employees).

	Question	Q21 - If you answered Yes to Q20, is the main responsibility of the committee to oversee the Product Development process?				
Independent Variable	Category	Mean Rank	Asymp. sig			
	1 - 100	18.46				
Size (Number of	101 - 500	17.50				
Employees)	501 - 1000	22.00	0.088			
	1001 - 2000	11.00				
	4001 - 5000	5.50				

Table 7.13: KW Test Results for Q21



The KW test results in table 7.13 for size showed a *p* value of 0.088 indicating that there is a statistically significant difference among the respondents at 0.10 significance level according to the number of employees in the institutions. The high mean ranking value of 22.00 is associated with institutions that employ between 501 to 1,000 employees, which indicates that the committee set up by these institutions to oversee the development of new products has different responsibilities and it has not been set up by the financial institution specifically to oversee the product development process. Furthermore, looking at the mean ranking patterns, it seems that the bigger the capital of the institution the more likely the institution will have a committee specifically setup to oversee the development of new products with no other responsibilities. This is confirmed with the largest two categories in table 7.13 showing that institutions with number of employees ranging from 1001 to 2000 and 4001 to 5000, have the lowest mean ranking value of 11.00 and 5.50 respectively.

With regards to question 22, enquiring whether the *Shari'ah* advisor of the respondent's institution (whether internal or external advisor) gets involved in the process of product development, the test results indicate that there are no statistically significant differences in opinion among the respondents in relation to the respondents' positions and in relation to institutions' size (whether by balance sheet items or by number of employees), geographical location (by region) or the institutions' age. However, as can be seen in Table 7.14, there is a statistically significant difference in relation to the nature of activities of the sampled institutions.

	Question	(Q22) Would the in-house/external <i>Shari'ah</i> Advisor be involved in the Product Development process?				
Independent Variable	Category	Mean Rank	Asymp. sig			
	Islamic Commercial Bank	22.00				
Nature of Activity	Islamic Investment Bank	22.00				
	Islamic Banking Window	22.00	0.021			
	Islamic Retail Bank	22.00	0.021			
Islamic Fund		22.00				
	Takaful Operator	29.50				

Table 7.14: KW Test Results for Q22



The KW test results for nature of activities depicted in Table 7.14 show a *p* value of 0.021 indicating that there is a statistically significant difference among the respondents according to the nature of activities of their institutions. The highest mean ranking in the table with a value of 29.50 is associated with *takaful* operators, which indicates that these institutions are less likely to have their *Shari'ah* advisor involved in the product development process compared to other types of institutions in the sample.

The last question in the second part of the questionnaire, namely question 23, is also a follow up on the previous question attempting to establish the level and type of involvement of the *Shari'ah* advisor in the product development process in the institutions represented in the sample. The test results indicate that there are no statistically significant differences in opinion among the respondents in relation to the respondents' positions and in relation to the institutions geographical location. However, there are statistically significant differences in relation to the institutions' age, size (by total assets and by number of employees) and by nature of activities.

With regards to the age of the institutions, the KW test results depicted in Table 7.15 indicate that there is statistically significant difference only in relation to the *Shari'ah* audit stage, which returned a p value of 0.057 indicating a statistically significant difference among the respondents at 0.10 significance. The high mean ranking value of 29.86, which is linked to the oldest institutions established within the sample covering the period of 1975 – 1984, indicates that institutions established in this period are less likely to get their *Shari'ah* advisors involved in the *Shari'ah* audit stage compared to other younger institutions in the sample.

In terms of institutions' size according to the number of employees, the KW test indicates that there is a statistically significant difference in relation to the *Shari'ah* audit stage, which has returned a *p* value of 0.004, indicating a statistically significant difference among the respondents at 0.05 significance level. The high mean ranking value of 39.50 is associated with the largest bands of institutions that have 2,001 to 3,000 and 4,001 to 5,000 employees, indicating that larger institutions are less likely to get their *Shari'ah* advisors involved in the *Shari'ah* audit stage compared to other smaller institutions in the sample.



This could be due to the availability of specialist resources for *Shari'ah* audit in large institutions, which means less reliance on the *Shari'ah* advisor to be involved in *Shari'ah* audit.

In terms of institutions' size based on their total assets, the KW test results indicate that there is a statistically significant difference in relation to the concept stage, returning a p value of 0.089 indicating a statistically significant difference among the respondents at 0.10 significance level. The high mean ranking value of 40.00 is associated with the smallest size institutions in the sample, namely; institutions that have less than \$1m of assets, indicating that smaller institutions are less likely to get their *Shari'ah* advisors involved in the concept stage compared to other institutions in the sample.

In terms of the institutions' nature of activities as an independent variable, the KW test results indicate that there are statistically significant differences in relation to concept stage, pricing stage, reviewing legal documentation stage, implementation stage and testing stage, all having a p value <0.10. As can be seen in table 7.15, the KW test results for the concept stage have a p value of 0.088 indicating that there is a statistically significant difference among the respondents at 0.10 significance level. The high mean ranking value of 32.50 associated with *takaful* operators indicates that this type of institutions are less likely to get their *Shari'ah* advisors involved in the concept stage compared to other types of institutions in the sample.

As for pricing stage, the KW test results in table 7.15 returned a *p* value of 0.011, which indicates that there are statistically significant differences among the respondents according to the nature of activities of the institution. The high mean ranking value of 26.50 is associated with three types of institutions, namely; Islamic banking windows, Islamic funds and *takaful* operators in the sample, indicating that the majority of the institutions in the sample do not ask their *Shari'ah* advisors to get involved in the pricing stage, unlike the Islamic retail banks that have the lowest mean ranking value of 4.00, which seem to require their *Shari'ah* advisors to get involved in the pricing stage.



In relation to reviewing the legal documentation stage, the results in table 7.15 have returned a *p* value of 0.011, indicating that there is a statistically significant difference among the respondents at 0.05 significance level according to the nature of activities of the institution. The highest mean ranking value of 32.25 is associated again with *takaful* operators, which indicates that these institutions are less likely to get their *Shari'ah* advisors involved in reviewing the legal documentation of the new products, unlike the majority of other types of institutions in the sample which seem to be requiring their *Shari'ah* advisors to get involved in reviewing the legal documentation of new products.

In relation to the implementation stage, the findings in table 7.15 depict that there is a statistically significant difference among the respondents with a p value of 0.089 according to the nature of activities of the institution. The high mean ranking value of 34.00 is associated again with *takaful* operators, which indicates that those institutions are less likely to get their *Shari'ah* advisors involved in the implementation stage of new products, compared to other types of institutions in the sample.

Finally, as regards to the results relating to testing stage, the findings show that there is a statistically significant difference among the respondents with a *p* value of 0.025. The high mean ranking of 27.00 that is shared between Islamic retail banks, Islamic funds and *takaful* operators indicates that those institutions are less likely to get their *Shari'ah* advisors involved in the testing stage, compared to other types of institutions in the sample.



Table 7.15:	KW	Test	Results	for	Q23
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Question						Inde	pendent Variable					
Q23 - If you	Age	e		Size (Number of	Employe	es)	Size (Total As	ssets)		Nature of Activi	ties	
answered yes to Q22, please identify the involvement of the <i>Shari'ah</i> Advisor in the following:	Category	Mean Rank	Asymp Sig	Category	Mean Rank	Asymp Sig	Category	Mean Rank	Asymp Sig	Category	Mean Rank	Asymp Sig
Conception stage	1975 - 1984	27.14		1 - 100	22.00		Less than \$1m	40.00		Islamic Commercial Bank	23.13	
				101 - 500	23.93		\$1m - \$5m	17.50		Islamic Investment Bank	19.38	
	1985 - 1994 2	28.75		501 - 1000	32.50	0.480	\$6m - \$10m	17.50		Islamic Banking Window	23.13	0.088
			0.200	1001 - 2000	17.50		\$51m - \$100m	17.50	0.080	Islamic Retail Bank	28.75	
	1995 - 2004	20.00	0.290	2001 - 3000	17.50	0.469	\$101m - \$500m	23.13	0.089	Islamic Fund	17.50	0.000
				4001 - 5000	23 13		\$501m - \$1b	17.50		Takaful Operator	32.50	
	2005 - 2012	22.00			20110		\$1.1b - \$10b	27.50		runujur operator	02.00	
							Over \$10b	17.50				
	1975 - 1984	23.29		1 - 100	25.38		Less than \$1m	26.50		Islamic Commercial Bank	20.88	
				101 - 500	18.46		\$1m - \$5m	26.50		Islamic Investment Bank	24.63	
	1985 - 1994	20.88		501 - 1000	26.50		\$6m - \$10m	4.00		Islamic Banking Window	26.50	0.011
Dui sin s stars			0.028	1001 - 2000	19.00	0.154	\$51m - \$100m	26.50	0.202	Islamic Retail Bank	4.00	
Pricing stage	1995 - 2004	24.00	0.938	2001 - 3000	26.50	0.154	\$101m - \$500m	23.13	0.292	Islamic Fund	26.50	
				4001 - 5000	26 50		\$501m - \$1b	19.00		Takaful Operator	26 50	
	2005 - 2012	22.90		1001 2000	20.50	26.50	\$1.1b - \$10b	21.50		Tuluyur Operator	20.20	
							Over \$10b	26.50				
Reviewing legal	1975 - 1984	27.43	0.106	1 - 100	23.25	0.699	Less than \$1m	32.25	0.352	Islamic Commercial Bank	21.00	0.011

Question						Inde	pendent Variable					
Q23 - If you	Age	;		Size (Number of)	Employe	es)	Size (Total As	sets)		Nature of Activi	ties	
answered yes to Q22, please identify the involvement of the <i>Shari'ah</i> Advisor in the following:	Category	Mean Rank	Asymp Sig	Category	Mean Rank	Asymp Sig	Category	Mean Rank	Asymp Sig	Category	Mean Rank	Asymp Sig
documentation				101 - 500	22.61		\$1m - \$5m	21.00		Islamic Investment Bank	22.88	
	1985 - 1994 26.0	26.63		501 - 1000	21.00	-	\$6m - \$10m	21.00		Islamic Banking Window	21.00	
				1001 - 2000	28.50		\$51m - \$100m	25.50		Islamic Retail Bank	21.00	
-	1995 - 2004	21.00		2001 - 3000	21.00		\$101m - \$500m	22.13		Islamic Fund	21.00	
				4001 - 5000 21.00		\$501m - \$1b	21.00		Takaful Operator	32.25		
	2005 - 2012	21.90		4001 3000	21.00		\$1.1b - \$10b	21.00		Tunujui Operator	52.25	
							Over \$10b	26.63				
	1975 - 1984	30.79 1 - 100 2		23.88		Less than \$1m	34.00		Islamic Commercial Bank	21.34		
				101 - 500	17.93		\$1m - \$5m	34.00		Islamic Investment Bank	24.63	
	1985 - 1994	28.38		501 - 1000	26.50		\$6m - \$10m	11.50		Islamic Banking Window	17.13	
Implementation			0.122	1001 - 2000	19.00	0.144	\$51m - \$100m	25.00	0.207	Islamic Retail Bank	11.50	0.080
stage	1995 - 2004	19.00	0.125	2001 - 3000	34.00	0.144	\$101m - \$500m	23.88	0.307	Islamic Fund	20.50	0.009
				4001 - 5000	34.00		\$501m - \$1b	11.50		Takaful Operator	34.00	
	2005 - 2012	21.40		1001 2000	51.00		\$1.1b - \$10b	24.00		Tunujui Operator	2 1100	
							Over \$10b	17.13				
	1975 - 1984	27.00		1 - 100	24.75	.75	Less than \$1m	27.00		Islamic Commercial Bank	21.38	
T ()		21.00	0.460	101 - 500	17.36		\$1m - \$5m	27.00	0.007	Islamic Investment Bank	25.13	0.025
resting stage	1985 - 1994	1985 - 1994 21.38	0.469	501 - 1000	27.00	0.108	\$6m - \$10m	4.50	0.287	Islamic Banking Window	10.13	0.025
				1001 - 2000	27.00		\$51m - \$100m	27.00		Islamic Retail Bank	27.00	

Question		Independent Variable										
Q23 - If you	Age	Age			Size (Number of Employees)			ssets)		Nature of Activi	ties	
answered yes to Q22, please identify the involvement of the <i>Shari ah</i> Advisor in the following:	Category	Mean Rank	Asymp Sig	Category	Mean Rank	Asymp Sig	Category	Mean Rank	Asymp Sig	Category	Mean Rank	Asymp Sig
	1995 - 2004	24.50		2001 - 3000	27.00		\$101m - \$500m	23.63		Islamic Fund	27.00	
	2005 - 2012 21.60			4001 - 5000 27.00	27.00	\$501m - \$1b	27.00		Takaful Operator	27.00		
		21.60		27.00			\$1.1b - \$10b	19.50		Tunujui Operator		
							Over \$10b	21.38				
	1975 - 1984 29	29.86	29.86	1 - 100	22.63		Less than \$1m	28.25		Islamic Commercial Bank	22.63	
				101 - 500	18.61		\$1m - \$5m	39.50		Islamic Investment Bank	20.75	
	1985 - 1994	17.00		501 - 1000	17.00		\$6m - \$10m	17.00		Islamic Banking Window	28.25	
<i>Shari'ah</i> audit stage (after			0.057	1001 - 2000	24.50	0.004	\$51m - \$100m	17.00	0.455	Islamic Retail Bank	17.00	0.700
product is	1995 - 2004	27.00	0.057	2001 - 3000	39.50	0.004	\$101m - \$500m	23.75	0.455	Islamic Fund	26.00	0.700
launched)				4001 - 5000	39 50	9.50	\$501m - \$1b	17.00		Takaful Operator	24 50	
	2005 - 2012	20.60		1001 5000	57.00		\$1.1b - \$10b	24.50		Tanajar Operator	21.30	
							Over \$10b	22.63				

7.3.2 Factor Analysis on the Stages of Product Development (Q23)

It can be noted from the analysis of question 23 that the majority of the differences among the participants relate to the differences in the nature of activities of the institutions represented in the sample. However, to provide further in-depth examination, factor analysis is used in this section in an attempt to discover if the observed variables can be explained largely or entirely in terms of much smaller number of variables, as factor analysis helps to cluster the factors considered to be impacting.

As explained earlier in Chapter 5 (Research Methodology), factor analysis is a statistical analysis tool, which involves multiple steps and is used to reduce a large number of variables into small, more manageable numbers called 'factors'. As such, the factor analysis can be used to identify the factors that have largely or entirely contributed to the differences in opinions among the respondents in respect of question 23.

The process of factor analysis can be divided into three major steps, as illustrated by Pallant (2007): (1) assessment of the suitability of the data for factor analysis, (2) factor extraction and (3) factor rotation and interpretation.

The first step required in order to conduct the factor analysis is to consider whether the use of factor analysis is appropriate for this case. In order to do so, the Kaiser-Meyer-Olkin (KMO) and Bartlett's test of Sphericity may be conducted according to Pallant (2007). The KMO test is a measure of the sampling adequacy, while the Bartlett's test of Sphericity is a statistic test used to examine the hypothesis that the variables are uncorrelated in the population.

The KMO test values are from 0 to 1 and the minimum test value required for the test to ensure that factor analysis is appropriate for this particular analysis is 0.6. While for the Bartlett's test, the result will be considered significant when the p value is less than 0.5. Table 7.16 presents the results of KMO and Bartlett's tests for factor analysis conducted for question 23.



As can be seen in table 7.16, the result of the KMO test of 0.716 meets the minimum requirement for sampling adequacy and therefore it is conclude that the factor analysis is appropriate for this study. Moreover, the p value of Bartlett's Test of Sphericity of (0.000) is significantly lower than critical p value required to reject the identity matrix. The results of both tests above confirm the factorability of the variables tested.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.716	
Bartlett's Test of Sphericity	Approx. Chi-Square	73.976
	df	36
	Sig.	0.000

Table 7.16:	KMO	and Bartlett's	s Test	Results	for	Q23
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The second stage of factor analysis is factor extraction, which is used to determine the smallest number of factors that can be used to best represent the interrelations among the tested variables. The Principal Component Analysis technique is used for factor extraction, which is the most commonly used technique according to Pallant (2007). The method used to determine the appropriate number of underlying factors to be used in this case is the Kaiser's criterion. The Eigenvalue has to be greater than 1.0 in order to be regarded as significant and to be used in determining the factors.

Table 7.17 presents the output of the number of components that can be retained according to Kaiser's criterion. The table lists nine components that have been extracted to three components with Eigenvalues of 2.905, 1.464 and 1.038 respectively. These three components collectively explain 60.1% of the variance with component one explaining 32.28%, component two explaining 16.27% and component three explaining 11.53%.

Development Included in Q23										
Comment		Initial Eigenva	alues	Extra	ction Sums o Loading	of Squared s	Rotat	tion Sums of Loadings	of Squared gs	
Component		% of	Cumulative		% of	Cumulative		% of	Cumulativ	
	Total	Variance	%	Total	Variance	%	Total	Variance	e %	
1	2.905	32.282	32.282	2.905	32.282	32.282	1.987	22.073	22.073	
2	1.464	16.272	48.554	1.464	16.272	48.554	1.714	19.046	41.119	
3	1.038	11.533	60.087	1.038	11.533	60.087	1.707	18.967	60.087	
4	0.873	9.696	69.783							
5	0.736	8.181	77.963							
6	0.613	6 812	84 776						1	

Table 7.17: Total Variance Explained on the Nine Stages of Product

91.077

95.796

100.000

6.301

4.720

4.204

0.567

0.425

0.378

8



The third and final stage of factor analysis is factor rotation and interpretation. There are two main approaches used for factor rotation, namely; the orthogonal (uncorrelated) or oblique (correlated) method. According to Pallant (2007), both methods, orthogonal and oblique correlations, usually produce similar results, therefore this study uses an orthogonal rotation (varimax) method as the rotation results are easier to interpret and report.

Table 7.18 depicts the rotated component matrix for question 23, which shows the nine variables that are loaded into the three retained factors. A factor loading is a correlation coefficient that represents how much weight is assigned to that factor. The items that have a higher loading value indicate that they strongly belong to that particular factor (De Vaus, 2002). In order for each of the items to be considered without doubt as belonging to a particular factor, each of the items must have at least a minimum loading value of 0.32 (Tabachnick and Fidell, 2006). In a situation where a variable (item) fits into two or more factors (crossloading), the item should be included into the factor that has the highest loading value (De Vaus, 2002).

The first component consists of three variables with loading values ranging from 0.590 to 0.806, which are above the acceptable benchmark of 0.32. These three variables are concept stage, design stage and marketing stage. All three variables seem to have common characteristics related to understanding the market, and therefore, the component is named with a general description referring to 'market research'.

The second component included four variables that have loading values above the acceptable benchmark ranging from 0.424 to 0.836. These four variables are pricing stage, reviewing legal documentation, submitting documentation for approval by the SSB and *Shari'ah* audit stage. The majority of these variables seem to be linked directly to *Shari'ah* matters and therefore, the component is named with a general description referring to '*Shari'ah* compliance'.

The third component included two variables only with acceptable loading values ranging from 0.685 to 0.847. These two variables are implementation stage and testing stage, which seem to be associated with setting up the product, and therefore,



the component is named with a general description referring to 'product implementation'.

	Component							
		(3) Product						
(1) Market Research	(2) Shari'ah Compliance	Implementation						
0.806	0.033	-0.020						
0.773	0.114	0.192						
-0.229	0.521	0.418						
0.324	0.630	0.006						
0.413	0.424	0.314						
0.168	-0.077	0.847						
0.590	-0.049	0.458						
0.182	0.381	0.685						
-0.045	0.836	002						
incipal Component Analy	vsis; Rotation Method: Varim	ax with Kaiser						
Normalization.								
rations.								
	(1) Market Research 0.806 0.773 -0.229 0.324 0.413 0.168 0.590 0.182 -0.045 ncipal Component Analy rations.	Component (1) Market Research (2) Shari'ah Compliance 0.806 0.033 0.773 0.114 -0.229 0.521 0.324 0.630 0.413 0.424 0.168 -0.077 0.182 0.381 -0.045 0.836 ancipal Component Analysis; Rotation Method: Varimerations.						

Table 7.18: Rotated Component Matrix^a for Q23

In order to have a better understanding about the most important factor out of the three retained components, average mean values of the variables forming each of the components are examined. The lower the average mean value of the components, the more importance such components has according to the respondents perception in relation to the involvement of the *Shari'ah* advisor in the different stages of the product development process.

Table 7.19: Ranking by Means Average of Each Factor

Component One: Market research	Mean Value
Concept stage	1.24
Design stage	1.40
Marketing stage	1.73
Means Average	1.46
Component Two: Shari'ah compliance	Mean Value
Pricing stage	1.84
Reviewing legal documentation from Shari'ah point of view	1.09
Submitting product documentation for approval by the SSB	1.22
Shari'ah audit stage (after product is launched)	1.27
Means Average	1.36
Component Three: Product implementation	Mean Value
Testing stage	1.82
Implementation stage	1.51
Means Average	1.67



Table 7.19 depicts the average of means of each component as a method of calculating the components score. The results indicate that *Shari'ah* compliance (Component Two) is the most important factor as it has the lowest means average of 1.36 followed by market research (Component One) with means average of 1.46 and finally product implementation (Component Three) with means average of 1.67.

7.4 CONCLUSION

This chapter applied descriptive and inferential analysis to the second part of the questionnaire composed of twelve questions that were designed to investigate the respondents' perception on how their institutions design strategies, prepare plans and how the organisational structure of the institution is setup in relation to product development.

In analysing the data, the descriptive statistical analysis used mainly frequency distribution, mean value and standard deviation. In addition, inferential analysis in the form of Kruskall-Wallis (KW) test is used as a non-parametric data analysis to examine a higher degree of difference in opinion among the sample.

The findings of the descriptive analysis in this chapter provide an overview of the participants' perception on how the product development process is conducted in their institutions in relation to the relevant questions in the second part of the questionnaire. Accordingly the results indicate that the majority of the institutions in the sample appear to have a strategy for developing new products. However, just over half of the respondents indicated that their institutions have a formal process and annual plans for new product development. Nevertheless, when it comes to allocating resources, there seems to be lower support for product development in terms of actual allocation of budget, staff and technology.

The results also show that the CEO and the head of the relevant business department are more likely to be the main driver behind developing new products and the majority of the institutions have a committee to oversee the product development process.



The findings also depict that the vast majority of the institutions in the sample require their *Shari'ah* advisor to be involved in the product development process. However, the type and the level of this involvement vary among the institutions.

The inferential analysis using the KW test is carried out using the selected independent variables namely the institutions' location, size (according to both balance sheet items and the number of employees), age, nature of activities and the respondents' position.

The nature of activities of the institutions in the sample is the independent variable that displayed the most statistically significant differences among respondents' perceptions on different areas in the second part of the questionnaire. In particular, *takaful* operators showed the most significant differences among the different types of institutions participating in the sample.

Analysis of the results related to the size of the institution (whether by number of employees or balance sheet items) also revealed some general trends that can be attributed to the fact that larger institutions are well-established. In relation to the institution's location, the results illustrate that institutions located in the US often displayed the most significant differences. In addition, the results for testing the age of the institution revealed that younger institutions presented the most significant differences.

The respondent's position was also used as an independent variable; however, the results did not often provide much statistical significance for this variable.

The next Chapter will provide further insight on the process of product development as it attempts to provide descriptive and inferential analysis on the third and final part of the questionnaire.



CHAPTER 8

INVESTIGATING PRODUCT DEVELOPMENT PROCESS, DOCUMENTATION, IMPLEMENTATION AND DIFFICULTIES FACED BY ISLAMIC FINANCIAL INSTITUTIONS

8.1 INTRODUCTION

The previous two empirical chapters provided descriptive and inferential analysis, where Chapter 6 covered the descriptive analysis of the first part of the questionnaire (eleven questions), while Chapter 7 provided descriptive and inferential analysis of the second part of the questionnaire (twelve questions). This chapter is, hence, a continuation from the previous two chapters and attempts to provide statistical analysis on the third part of the questionnaire with 19 questions that focus on investigating the product development documentation, process design and steps used by the institutions in the sample, to develop, launch and review their new products. This chapter also attempts to identify the main challenges, barriers and risks faced by the institutions in the sample, in relation to new product development.

Using both descriptive and inferential analysis, this chapter aims to explore and examine the detailed processes and documentation currently used for product development within the institutions in the sample, then attempts to identify whether there are any significant differences in the opinion of the participants regarding the issues being investigated in relation to the selected independent variables.

The first part of this chapter uses descriptive analysis tools, while the second part of the chapter utilises inferential statistics tests. The pattern of analysis closely follows the sequence of the questions. At the end of the chapter the findings are summarised with concluding remarks about the main descriptive and inferential findings related to the third part of the questionnaire.



8.2 DESCRIPTIVE DATA ANALYSIS FOR THE THIRD PART OF THE QUESTIONNAIRE

Descriptive analysis is used in this section on each of the 19 questions that form the third part of the questionnaire in an attempt to develop an advanced understanding of the product development documentation, process design and steps followed by the institutions in the sample to develop, launch and review their new products, and the main challenges, barriers and risks facing the new product development process.

8.2.1 Documentation Used in Product Development Process

Table 8.1 provides information on the documentation prepared by the institutions in the sample in relation to product development and whether such documents have been approved by the *Shari'ah* Supervisory Board (SSB) and updated regularly.

The first part of the table attempts to establish whether the institutions in the sample have a formal document explaining the product development process, while the second part of the table explores as to whether such document has been approved by the institution's SSB, whereas the last part of the table endeavours to determine how often the product development process document is being reviewed and updated by the institution.

(Q24) D	Does your institution have a forma	l documented P	roduct Develo	opment Process?	
		Frequency	Percent	Mean	Std. Deviation
Valid	Yes	27	60.0		
	No	18	40.0	1.40	0.495
l	Total	45	100.0		
(Q25) It	f you answered Yes to Q24, has the	ne Product Deve	elopment proc	ess document been	approved by the SSB?
		Frequency	Percent	Mean	Std. Deviation
Valid	Yes	13	28.9		
	No	14	31.1	1.52	0.509
*Missin	ig System	18	40.0	1	
Total		45	100.0	1	
(Q26) I	f you answered Yes to Q24, is the	product develo	pment proces	s document regular	ly updated?
		Frequency	Percent	Mean	Std. Deviation
Valid	Yes: Yearly	8	17.8		
	No	19	42.2	1.70	0.465
*Missin	ig System	18	40.0]	
Total		45	100.0		

Table 8.1: Documentation of the Product Development Process

*Note: Missing System refers to those institutions that did not have a documented product development process as shown in part one of the table (covering Q24). Therefore the respondents did not fill in questions (Q25 and Q26).



The analysis of the data, as depicted in the first part of table 8.1, shows that 60% of the institutions in the sample have a formal and documented process for product development. In addition, as can be seen in the table, 28.9% of the institutions in the sample have presented their product development process documents to their SSB for approval. The analysis of the last part of the table shows that only 17.8% of the institutions in the sample actually review and update their product development process document regularly and usually on annual basis as can be confirmed from the high mean value of 1.70.

It can be noted that out of the 60% of the sample that have a documented product development process, 31.1% of those (*i.e.* over half of the sample) do not present the product development process document to their SSB for approval. Furthermore, when it comes to regularly updating and maintaining the product development process documentation, 42.2% (*i.e.* more than two thirds of the 60% who have documented product development process) do not regularly update the document.

Table 8.2 provides further findings on the process of product development used by the institutions in the sample, in relation to how strictly this process is used in practice, using a scale of 1 - 5 where 5 is 'very strictly' and 1 is 'used as a guideline only'. The analysis in Table 8.2 illustrates that only 11.1% of the sample identified using the product development process very strictly, while 6.7% use it as guidance only. However, the majority of the institutions that have a formal process for product development, consisting of the institutions that have opted for 3 and 4 of the scale, representing 33.4% of the sample, seem to use it fairly strictly. This result is confirmed with a high mean value of 3.26.

(Q27) How strictly is the product development process used? (Using a scale from 1 -5, where 5 is 'very strictly' and 1 is 'used as a guideline only)									
	Frequency Percent Mean Std. Deviation								
Valid	Used as guidance 1 2 3 4 Very strictly 5	3 4 8 7 5	6.7 8.9 17.8 15.6 11.1	3.26	1.259				
Missing	Missing System* 18 40.0								
Total		45	100.0						

Table 8.2: Use of the Product Development Process Document

*Note: Missing System refers to those institutions that did not have a documented product development process as shown in part one of table 8.1 (Q24). Therefore some respondents did not fill in the following question 27.



8.2.2 Key Sources of Ideas for New Products

Table 8.3 depicts the findings on the key sources of ideas for new products and whether such ideas are mainly generated from products of other conventional financial institutions, other Islamic institutions' products, coming from external agencies, requested by customers, developed using market research or proposed by the in-house research and development team or department. The respondents were asked to rank these options according to their relevant importance where 1 is the most important and 6 is the least important.

The analysis reveals that the respondents have mixed opinions on the key sources of ideas for new products where 20% of the sample thought that the main source will be coming from other conventional financial institutions' products, while 24.4% expressed that conventional products will be the least likely source of ideas for new products. The mean value of 3.56 evidences the unclear position of the participants.

(Q28) What are the importance)	(Q28) what are the key sources of ideas for new products? (Please rank the options 1,2.5 according to mportance)										
Rank		1	2	3	4	5	6	Total			
Products of	Count	9	5	10	5	5	11	45			
conventional	Percent	20.0	20.0 11.1 22.2 11.1 11.1 24.4 100%								
financial	Mean		3.56								
institutions	Std. Dev				1.853						
Products of other	Count	15	11	8	3	4	4	45			
Islamic financial	Percent	33.3	33.3 24.4 17.8 6.7 8.9 8.9 100%								
institutions	Mean		2.60								
	Std. Dev		r		1.643						
Outside External agencies (e.g. consultants)	Count	4	2	5	12	11	11	45			
	Percent	8.9	4.4	11.1	26.7	24.4	24.4	100%			
	Mean	4.27									
	Std. Dev		1.514								
Customers	Count	11	14	5	6	6	3	45			
	Percent	24.4	31.1	11.1	13.3	13.3	6.7	100%			
	Mean				2.80						
	Std. Dev				1.604						
Market research	Count	2	8	14	5	13	3	45			
	Percent	4.4	17.8	31.1	11.1	28.9	6.7	100%			
	Mean				3.62						
	Std. Dev				1.370						
In-house R&D	Count	4	5	3	14	6	13	45			
	Percent	8.9	11.1	6.7	31.1	13.3	28.9	100%			
	Mean				4.16						
	Std. Dev				1.623						

 Table 8.3: Key Sources of Ideas for New Products



The products of other Islamic financial institutions seem to have the highest score with 33.3% of the respondents denoting that such products are the main source of ideas for new products, while only 8.9% of the respondents believe that other Islamic financial institutions' products are the least popular source of ideas for new products. This result can be further substantiated with the mean value of 2.60, which is the lowest in the table. Thus, it seems that mimicking other Islamic products is the strategy used by a significant number of Islamic financial institutions in the industry.

In respect of external agencies being a source of new ideas for product development, the findings in table 8.3 show that this strategy has a low priority as only 8.9% of the respondents have indicated that external agencies are used as a main source of ideas for new products, while 24.4% thought that external agencies are the least common source of ideas for new products.

The findings also demonstrate that customers seem to be the second largest source of ideas for new products according to the views of the respondents in the sample, with 24.4% of the respondents choosing customers as the main source of ideas and only 6.7% of the respondents choosing customers as the least popular source of ideas for new products. This is evidenced by the low mean value of 2.80.

In terms of market research, the findings in table 8.3 show that it has a unique position as a source of new ideas for product development with only 4.4% of the respondents stating that market research is the main source of ideas and only 6.7% of the respondents stating that market research is the least likely source of ideas. Thus, the majority of the respondents have ranked market research somewhere in the middle, indicating that it is usually used by the institutions in the sample, but not as the main source. This result can be further substantiated with the relatively high mean value of 3.62.

As can be seen in table 8.3, the last category in the table is the in-house research and development team or department which seems to be ranked by the respondents on the lower end as a source of new ideas for product development with only 8.9% of the respondents thinking it will be the main source of ideas, while 28.9% thought it will be the least common source of ideas. However, this might be a reflection of the



organisational structure of the respondent's institution and whether the institution has an in-house research and development team or department.

8.2.3 Design of the Product Development Process

The findings related to the detailed steps used for developing new products by the participating institutions and how often these steps are followed are depicted in Table 8.4.

The first step that the questionnaire enquired about is the market research, and the findings depicted in table 8.4 show that 37.8% of the sample always conducts market research for new products, while 22.2% does that often, 26.7% conducts it occasionally, 11.1% conducts it seldom and only one institution representing 2.2% of the sample stated that they never conduct market research. This result can be further substantiated with the relatively high mean value of 3.82.

Brainstorming is the second step enquired about by the questionnaire and the analysis shows that 33.3% of the sampled participants always conduct a brainstorming exercise for new products, while 28.9% conducts it often, 20.0% carries out the exercise occasionally, 15.6% does it on seldom basis and 2.2% of the sample stated that they never do brainstorming exercise for new products. This classification is further evidenced by the relatively high mean value of 3.76.

The next step tested is the formal process for screening new ideas and the analysis shows that 22.2% of the sample always uses a formal process to screen new ideas, while 26.7% does that often, 22.2% uses it occasionally, 24.4% seldom and 4.4% of the sample stated that they actually never use a formal process for screening new ideas. This result can be confirmed from the relatively high mean value of 3.38.

Preparing a concept paper, which is usually one of the essential early steps in product development, was tested next and the analysis shows that 35.6% of the sample always prepares a concept paper for new products, while 40.0% prepares it often, 15.6% prepares it occasionally, 6.7% prepares it on seldom basis and 2.2% of the sample stated that they never prepare a concept paper for new products, which is further evidenced by the high mean value of 4.00.



Table 8.4: Step	os Used for Developing	New Products
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(Q29) What are the s team follows them?	teps used for Please choos	developing ne	ew products le answers)	in your institution	and how often	the Product De	velopment			
	110050 011001	Never	Seldom	Occasionally	Often	Always	Total			
Market research	Count	1	5	12	10	17	45			
	Percent	2.2%	11.1%	26.7%	22.2%	37.8%	100%			
	Mean			3.8	2					
	Std. Dev	1.134								
Brainstorming	Count	1	7	9	13	15	45			
exercise to generate	Percent	2.2%	15.6%	20.0%	28.9%	33.3%	100%			
new product ideas	Mean			3.7	6					
	Std. Dev			1.15	51		-			
Formal ideas	Count	2	11	10	12	10	45			
screening process	Percent	4.4%	24.4%	22.2%	26.7%	22.2%	100%			
	Mean		3.38							
	Std. Dev			1.21	1					
Preparing a	Count	1	3	7	18	16	45			
Concept Paper for	Percent	2.2%	6.7%	15.6%	40.0%	35.6%	100%			
the new product	Mean			4.0	0		•			
	Std. Dev			1.00	00					
Approval of	Count	1	1	8	13	22	45			
Concept Paper by	Percent	2.2%	2.2%	17.8%	28.9%	48.9%	100%			
the SSB	Mean			4.2	0		•			
	Std. Dev			0.96	58					
Preparing a Product	Count	-	1	7	14	23	45			
Definition Paper	Percent	-	2.2%	15.6%	31.1%	51.1%	100%			
	Mean	4.31								
	Std. Dev	0.821								
Sign-off for the	Count	-	4	5	7	29	45			
Product Definition	Percent	-	8.9%	11.1%	15.6%	64.4%	100%			
Paper	Mean		4.36							
	Std. Dev			1.00)4					
Ensure product	Count	3	7	3	7	25	45			
documentation's	Percent	6.7%	15.6%	6.7%	15.6%	55.6%	100%			
compliance with	Mean	3.98								
AAOIFI Shari ah	Std. Dev			1.37	73					
Obtaining SSP	Count		1	1	0	25	45			
approval for	Doroont	-	1	2 20/	0 17.90/	33 77 80/	43			
product documents	Moon	-	2.2%	2.2%	1/.0%	11.0%	100%			
1	Std Dev			4.7	26					
Developing the IT	Count	_	1	7	17	17	45			
system, processes	Percent	_	8.9%	15.6%	37.8%	37.8%	100%			
& procedures	Mean		0.970	4.0	4	57.670	10070			
-	Std. Dev			0.9	52					
In-house testing	Count	-	4	13	7	21	45			
in nouse testing	Percent	-	8.9%	28.9%	15.6%	46.7%	100%			
	Mean		01270	4.0	0	101770	10070			
	Std. Dev			1.06	56					
Training of	Count	-	3	8	15	19	45			
personnel	Percent	-	6.7%	17.8%	33.3%	42.2%	100%			
	Mean			4.1	1					
	Std. Dev			0.93	35					
Post launch review	Count	-	4	11	12	18	45			
	Percent	-	8.9%	24.4%	26.7%	40.0%	100%			
	Mean			3.9	8	-	-			
	Std. Dev			1.01	1					
Shari'ah audit of	Count	-	1	2	10	32	45			
the product	Percent	-	2.2%	4.4%	22.2%	71.1%	100%			
	Mean			4.6	2					
	Std. Dev			0.68	34					



The questionnaire continues to follow up on the previous step to test whether such concept paper is sent to the SSB for approval. The analysis shows that 48.9% of the institutions in the sample always seeks the SSB's approval of the new product concept papers, while 28.9% does that often, 17.8% of the sample obtain the SSB's approval occasionally, 2.2% seldom does that and another 2.2% of the sample never seek the SSB's approval for the new product concept papers. This result is confirmed with high mean value of 4.20.

The next step tested is preparing a detailed product definition paper for the new product. As can be seen in table 8.4, 51.1% of the sampled institutions always prepare a product definition paper for the new product, while 31.1% of the sample prepares it often, 15.6% does it occasionally and one institution only, representing 2.2% of the respondents, prepares it on seldom basis. It is noted that no institution has indicated that they never prepare a product definition paper for their new products, indicating that this is one of the most important stages of the product development as being practiced by the participants' institutions. This result can be further substantiated with the high mean value of 4.31.

The next question investigated whether the product definition paper is sent to all relevant departments for approval. The analysis in table 8.4 shows that 64.4% of the participating institutions always obtains the approval of the product definition paper from the relevant departments, while 15.6% does that often, 11.1% occasionally requests approval from other departments and 8.9% requests it on seldom basis. None of the institutions in the sample indicated that they never request approval for product definition paper.

The next step tested is ensuring the compliance of the new product documentation with *Shari'ah* standards issued by the Accounting & Auditing Organisation for Islamic Financial Institutions (AAOIFI). The analysis demonstrates that the majority of the institutions, representing 55.6% of the sample, always checks the product documentation for compliance with AAOIFI *Shari'ah* standards, while 15.6% does it often, 6.7% ensures compliance occasionally, 15.6% checks it on seldom basis and 6.7% of the sample have indicated that they never check the new product documentation to ensure compliance with AAOIFI *Shari'ah* standards. This result is confirmed with relatively high mean value of 3.98.



Obtaining the SSB's approval of the documentation is the next step investigated by the questionnaire and the analysis depicts that the vast majority, namely 77.8% of the sample, always obtains the SSB's approval for the documentation of new products, while 17.8% often obtains the approval, 2.2% of sample reported to obtain the SSB's approval occasionally and another 2.2% of the sample indicated to obtain the SSB's approval on seldom basis. None of the institutions in the sample specified that they never request SSB approval of new products' documentation.

The next step consists of the development of the IT system and the relevant operational processes and procedures. The analysis in table 8.4 shows that 37.8% always develops the required IT system and the relevant operational processes and procedures for the new products. Similarly, 37.8% of the participants do that often, while 15.6% develops them occasionally and 8.9% seldom does the development. None of the institutions in the sample suggested that they never develop the required IT system and the relevant operational processes and procedures for the new products. This result is confirmed with high mean value of 4.04.

Upon completing the development of the IT system, testing is usually the next logical step in the product development process; therefore, the questionnaire enquired about the in-house testing and the analysis shows that 46.7% of the sample always conducts in-house testing for the new product, while 15.6% does that often, 28.9% conducts the testing occasionally and 8.9% conducts testing on seldom basis. None of the institutions in the sample indicated that they never conduct testing for new products. The relatively high mean value of 4.00 supports this classification.

The next step of product development tested is training, which is usually one of the last steps of product development process, and the analysis in table 8.4 exhibits that 42.2% of the institutions in the sample always provides training on the new product to their staff, while 33.3% provides training often, 17.8% does it occasionally and 6.7% does it seldom. As the results indicate, none of the institutions in the sample stated that they never provide training for their staff on new products. This is further evidenced by the high mean value of 4.11.

The next step enquired about in the product development process is post-launch review; and the analysis in table 8.4 shows that 40.0% of the sample always conducts



post-launch review for new products, while 26.7% does that often, 24.4% occasionally conducts the post-launch review and 8.9% conducts it on seldom basis. As can be seen, none of the institutions in the sample pointed out that they never conducted post launch review for new products. This result is further substantiated with the high mean value of 3.98.

The final stage tested is related to conducting *Shari'ah* audit on the new product and the analysis demonstrates that the vast majority of the institutions in the sample, representing 71.1%, always conducts *Shari'ah* audit on the new products, while 22.2% of the sample does that often, 4.4% conducts the *Shari'ah* audit occasionally and only 2.2% reported to do *Shari'ah* audit on seldom basis. It should be noted that none of the institutions in the sample stated that they never conduct *Shari'ah* audit on new products. This result is confirmed with high mean value of 4.62.

8.2.4 Factors Determining New Product Ideas

Table 8.5 depicts the findings related to the important factors considered by the institutions in the sample in identifying new product ideas for development. The questionnaire offered the respondents different external and internal factors that are usually considered in developing a new product including financial factors, market factors, the fit with the institution's strategy and plans, fit with the objectives of *Shari'ah* (*maqasid al-Shari'ah*) and the availability of resources. The respondents were asked to rank these factors according to importance using a scale from 1 to 5 where 1 is the most important and 5 is the least important.

The first factor tested is the financial consideration related to the product, including turnover, profit and revenue. The analysis illustrates that the majority of the respondent institutions, namely 62.2% of the sample, have ranked the financial considerations either the top most important or the second most important factor (i.e. ranked it 1 or 2) to be considered in developing new products, while 31.1% of the sample considered it to be within the two bottom positions in terms of the importance (ranked it 4 or 5). Only 6.7% of the institutions seem to be indifferent in relation to the financial considerations of the product (as they ranked it 3). This result is confirmed with the relatively high mean value of 2.78.



The market considerations, including customers' needs and competition, is tested next. As the findings in table 8.5 show, 57.8% of the institutions, rank market considerations as the first and second most important factor, while 20.0% rank the market considerations at the last two positions in the scale of importance of the factor. In addition, as can be seen, 22.2% is neutral in regards to the importance of the market considerations in identifying new product ideas (as they ranked it 3). This result can be further substantiated with the relatively low mean value of 2.29.

(Q30) In identifying (Please rank the opt	(Q30) In identifying products for development, which of the following factors are given higher importance? (Please rank the options 1,2,3, according to importance)									
Rank		1	2	3	4	5	Total			
Financial	Count	6	22	3	4	10	45			
consideration (turnover, profit, revenue, etc)	Percent	13.3%	48.9%	6.7%	8.9%	22.2%	100%			
	Mean		2.78							
	Std. Dev			1.4	12					
Market	Count	18	8	10	6	3	45			
consideration (customers' needs, competition etc.)	Percent	40.0%	17.8%	22.2%	13.3%	6.7%	100%			
	Mean		2.29							
	Std. Dev		1.308							
Fit with corporate	Count	5	5	19	12	4	45			
strategy and plan	Percent	11.1%	11.1%	42.2%	26.7%	8.9%	100%			
	Mean			3.1	1					
	Std. Dev			1.09	92					
Fit with maqasid	Count	4	8	4	18	11	45			
Al- Shari'ah	Percent	8.9%	17.8%	8.9%	40.0%	24.4%	100%			
	Mean			3.5	3					
	Std. Dev			1.29	90					
Resource	Count	12	2	9	5	17	45			
availability	Percent	26.7%	4.4%	20.0%	11.1%	37.8%	100%			
(human capital,	Mean			3.2	.9					
system etc.)	Std. Dev			1.64	46					

Table 8.5: The Most Important Factors in Identifying New Products

The fit with corporate strategy and plan is tested next and the analysis indicates that only 11.1% of the sample considers this to be the most important factor to be considered while identifying new product ideas with a similar 11.1% considering it as the second most important factor. In addition, 35.6% of the respondents position the fit with corporate strategy and plan factor within the bottom two places in the list in terms of factors to be considered. The remaining 42.2% of the sample is indifferent in relation to the importance of corporate strategy and plan as a factor to be considered while identifying new product ideas. The relatively high mean value of 3.11 provides evidence to support this supposition.



The fit with the objectives of *Shari'ah*, or *maqasid al-Shari'ah*, is tested next and the analysis shows that only 26.7% of the sample ranked it in the top two positions as a factor to be considered. The majority of the institutions, representing 64.4% of the sample, rank it among the last two positions in terms of importance as a factor to be considered while identifying new products ideas. The remaining 8.9% is neutral in relation to the importance of *maqasid al-Shari'ah* as a factor to be considered while identifying new products ideas. While such results raise concerns considering the importance of *maqasid al-Shari'ah* in the doctrine of Islamic finance, such results can be understandable if we take into account that incorporating *maqasid al-Shari'ah* into the procedural method of Islamic financial product development is relatively new. The highest mean value in the table of 3.53 illustrates an overall support for this statement.

The last factor tested in this section is the availability of resources including human capital and system capabilities. The findings in table 8.5 show that 26.7% of the sample considers the availability of resources to be the most important factor to be considered while identifying new products ideas for development, however, only 4.4% believes it to be the second most important factor to consider. On the other hand, 48.9% considers it to be in the lowest two ranks as a factor to be considered while identifying new products ideas. The remaining 20.0% of the sample is indifferent in relation to the importance of resources availability as a factor to be considered. This result is confirmed with the relatively high mean value of 3.29.

8.2.5 The Main Components of the Concept Paper

Table 8.6 provides findings in relation to the main components of the concept paper for the new product as prepared by the institutions in the sample. The questionnaire provided the respondents with a set of options reflecting the most common elements usually used in preparing new products' concept papers. The respondents were requested to indicate whether their institution uses these elements in developing the concept paper for new products.

The first element of the concept paper tested is the market research, and the findings in table 8.6 depict that 68.9% of the sample conducts a market research as part of developing the concept paper for new products.



(Q31) What are the main components of the New Product Concept Paper?								
		Count	Percent	Mean	Std. Deviation			
Market research	Yes	31	68.9%					
	No	14	31.1%	1.31	0.468			
	Total	45	100.0					
How the new product will	Yes	30	66.7%					
fulfil customers' needs	No	15	33.3%	1.33	0.477			
	Total	45	100.0					
Describing product nature,	Yes	41	91.1%					
benefits & features	No	4	8.9%	1.09	0.288			
	Total	45	100.0					
Identifying the main	Yes	33	73.3%					
objectives of the product	No	12	26.7%	1.27	0.447			
	Total	45	100.0					
Identifying the appropriate	Yes	37	82.2%					
Shari'ah structure	No	8	17.8%	1.18	0.387			
	Total	45	100.0					
How the new product will	Yes	31	68.9%					
achieve the business	No	14	31.1%	1.31	0.468			
objectives	Total	45	100.0					
How the new product will	Yes	12	26.7%					
contribute to achieve	No	33	73.3%	1.73	0.447			
maqasid al-Shari'ah	Total	45	100.0					

Table 8.6: The Main Components of the New Product Concept Paper

The respondents were then asked whether the concept paper explains how the new product will fulfil customers' needs. The analysis shows that 66.7% of the concept papers produced by the institutions in the sample explain how the new product will fulfil customers' needs.

The next element tested is describing the product's nature, features and benefits, and the findings show that 91.1% of the institutions in the sample describe the product in details specifying its nature, features and benefits in the concept paper.

The following question enquired whether the concept paper identifies the main objectives of the product, and the analysis illustrates that 73.3% of the institutions in the sample provide information on the main objectives behind developing the new product.

The next element of the concept paper tested was about identifying the appropriate *Shari'ah* structure needed to develop the new product, for which the findings in table 8.6 show that 82.2% of the sampled institutions provide information on the underlying *Shari'ah* structure that will be used to develop the new product.



The next item enquires whether the concept paper for the new product provides information on how the product will achieve the business objectives. The analysis indicates that 68.9% of the sampled institutions explain in the concept paper how the new product would achieve the business objectives.

The last element of the concept paper tested is whether the institutions in the sample explain in the product concept paper how the new product will contribute to achieve *maqasid al-Shari'ah*. As can be seen in table 8.6, only 26.7% of the participants indicate that they explain it, while 73.3% of the sampled institution report that they do not consider how the new product will contribute to achieving *maqasid al-Shari'ah*. The high mean value of 1.73 provides evidence to support this supposition.

8.2.6 Deciding the Most Appropriate Shari'ah Structure for the New Product

The findings in relation to how the institutions in the sample decide on the most appropriate *Shari'ah* structure for the new products are presented in Table 8.7. In this question, the respondents were offered different options and were requested to choose only one of the options that represents, in their view, the most appropriate basis on which their institution chooses the *Shari'ah* structure for the new product.

The findings in table 8.7 illustrate that 8.9% of the institutions in the sample select the structure that provides the highest level of protection to the institution, while 6.7% of the sample selects the structure that provides the best protection to the customer. Only one institution representing 2.2% of the sample chose the structure that is used by most of the other institutions in the market. The structure that provides best fit from *Shari'ah* point of view is selected by 22.2% of the institutions in the sample indicating the importance of *Shari'ah* fit compared to other bases listed in the questionnaire, while only two institutions representing 4.4% of the sample selected the structure that provides the highest yield compared to its costs. Finally, 55.6% of the sample indicated that they use a combination of all factors listed in the questionnaire. This result is confirmed with the high mean value of (4.73).



(Q32) O	(Q32) On What basis does your institution decide on the most appropriate <i>Shari'ah</i> structure for a new product?							
		Frequency	Percent	Mean	Std. Deviation			
Valid	The structure that provides most protection to the institution	4	8.9					
	The structure that provides most protection to the customer	3	6.7					
	The same structure as most other institutions in the market	1	2.2	4 72	1 (0)			
	The structure that provides best fit from <i>Shari'ah</i> point of view	10	22.2	4.73	1.698			
	The structure that brings in the highest yield compared to its cost	2	4.4					
	A combination of the above	25	55.6					
	Total	45	100.0					

 Table 8.7: The Basis for Choosing the Most Appropriate Shari'ah Structure for

 the New Product

8.2.7 The Main Components of the Product Definition Paper

Table 8.8 provides information on the main components of the new product definition paper as prepared by the institutions in the sample. The respondents were provided with a set of options reflecting the most common elements usually used in preparing new product definition papers, and they were requested to indicate whether their institution uses these elements or not.

The first question in this section enquires about whether the product definition paper provides information on the product definition and description. The analysis reveals that 93.3% of the sampled institutions provide information regarding product definition and description as part of the product definition paper.

The next element tested is whether the product definition paper provides description of the product's target market and customers, for which the findings in table 8.8 show that 77.8% of the sampled institutions identifies the product's target market and customers in their product definition paper.

The respondents were then asked whether the product definition paper includes a financial model or a business plan. As can be seen in table 8.8, the analysis establishes that 80.0% of the sampled institutions incorporate a financial model in the new product definition paper.



(Q33) What are the main com	ponents of	the New Produ	ct Definition I	Paper?		
		Count	Percent	Mean	Std. Deviation	
Product Definition &	Yes	42	93.3%			
Description	No	3	6.7%	1.07	0.252	
	Total	45	100.0			
Description of Target Market & Customers	Yes	35	77.8%			
	No	10	22.2%	1.22	0.420	
	Total	45	100.0			
Financial Model (or business	Yes	36	80.0%			
case)	No	9	20.0%	1.20	0.405	
	Total	45	100.0			
Credit Risk Analysis (including risk mitigation tools)	Yes	35	77.8%			
	No	10	22.2%	1.22	0.420	
	Total	45	100.0	1		
Customer Risk Analysis	Yes	28	62.2%			
	No	17	37.8%	1.38	0.490	
	Total	45	100.0			
Operational Impact Analysis	Yes	28	62.2%			
	No	17	37.8%	1.38	0.490	
	Total	45	100.0			
Legal & Regulatory Analysis	Yes	36	80.0%			
	No	9	20.0%	1.20	0.405	
	Total	45	100.0			
Required System Changes	Yes	29	64.4%			
	No	16	35.6%	1.36	0.484	
	Total	45	100.0			

Table 8.8: The Main Components of the Product Definition Paper

The next question requested the respondents to specify whether the product definition paper provides analysis on the credit risk associated with the new products and the mitigation tools that will be used. Examining the results indicates that 77.8% of the institutions in the sample specify a section on credit risk and the mitigation tools in the product definition paper.

The next element tested is whether the product definition paper provides analysis on the risks faced by the customers when buying the new product. The results depicted in table 8.8 illustrate that only 62.2% of the institutions in the sample provide such risk analysis, indicating that providing analysis on the risks faced by customers is less common when compared to the rest of the elements of the product definition paper mentioned in the questionnaire. This is further substantiated by the low mean value of 1.38.

The respondents were then asked whether the product definition paper provides analysis on the impact of the new product on the back-office operation of the



institution, and the analysis depicts that 62.2% of the institutions in the sample conduct such analysis, indicating that operational impact analysis is not seen as a top priority when compared to the rest of the product definition paper elements mentioned in the questionnaire.

In relation to the legal and regulatory issues, the findings in table 8.8 indicate that 80.0% of the sampled institutions provide the analysis needed to ensure that the new product will be compliant with the legal and regulatory requirements.

The last element of the product definition paper tested is whether the institutions in the sample provide information in the product definition paper on the required changes to the institution's IT system. The analysis reveals that 64.4% of the institutions in the sample specify the information needed to amend the IT system to fit the requirements of the new product.

8.2.8 Sources of Information Used in Creating the Financial Model

Table 8.9 presents the findings on the sources of information used by the financial institutions in the sample, to develop the financial model needed for the product definition paper. The questionnaire provided the respondents with multiple options and requested them to rank these sources from 1 to 4 according to importance where 1 is the most important and 4 is the least important.

The analysis reveals that the institutions in the sample use different sources of information to build the financial model for their new products. However, almost half of the sample, namely 49.9%, uses their own market research as the first source of information, while only 8.9% uses their own market research as the second source of information. In addition, 17.8% of the participants use it as the third source for information and 24.4% uses their own market research as the last option to obtain information for developing the financial model for new products. This result is confirmed with average mean value of 2.18.

The next source tested is the institution's own customers' data which is selected as the first source of information to build the financial model for new products by 24.4% of the institutions in the sample, followed by 28.9% of the sample which selects it as the second source of information, 15.6% of the sample selects it as third source of



information and 31.1% of the institutions in the sample use their own customer data as the last source of information from the list provided in the questionnaire. This result can be further substantiated by the average mean value of 2.53.

			8					
(Q34) Which of the follow product? (Please rank the	(Q34) Which of the following sources of information are used in creating the financial model for the new product? (Please rank the options 1,2,3 according to importance)							
		1	2	3	4	Total		
Institution's own market	Count	22	4	8	11	45		
research	Percent	48.9%	8.9%	17.8%	24.4%	100%		
	Mean			2.18	-			
	Standard Deviation			1.284				
Institution's own customers data	Count	11	13	7	14	45		
	Percent	24.4%	28.9%	15.6%	31.1%	100%		
	Mean	2.53						
	Standard Deviation	1.179						
Specialised market data	Count	4	22	10	9	45		
reports	Percent	8.9%	48.9%	22.2%	20.0%	100%		
	Mean			2.53				
	Standard Deviation			0.919				
Competitors information	Count	8	6	20	11	45		
	Percent	17.8%	13.3%	44.4%	24.4%	100%		
	Mean			2.76				
	Standard Deviation			1.026				

Table 8.9: Sources of Information Used in Creating the Financial Model

The next source of information tested is the specialised market data reports and the analysis illustrates that only 8.9% of the sample institutions use it as the first source of information to build their financial model. On the other hand, 48.9% of the sample uses it as the second source of information, 22.2% uses it as third source of information and 20.0% uses specialised market data report as the last option. This result is confirmed with average mean value of 2.53.

As can be seen in table 8.9, the last source of information tested by the questionnaire is the competitors' information where the analysis depicts that 17.8% of the institutions in the sample use it as the first source for information to build their new product financial model, while 13.3% of the sample uses it as the second source of information. In addition, 44.4% of the sampled institutions use competitors' information as the third source of information and 24.4% uses it as the last option to build their new product financial model. This result can be further substantiated with the relatively high mean value of 2.76.



In terms of rank for the whole sample, the results show that the institution's own market research comes first as the top source of information used with 48.9% of the institutions in the sample selecting it as such. Specialised market data report comes in the second top position as a source of information with 48.9%. The third source of information is the competitors' information with 44.4%, while the Institution's own customers' data is ranked as the fourth source with only 31.1%.

8.2.9 Most Important Factor Considered while Pricing

This section conveys the findings in relation to the most important factors that are considered by the financial institutions in the sample when they price the new product, and the results are provided in Table 8.10. For this question, the questionnaire provided the respondents with multiple factors to choose from, including achieving the required internal rate of return, competitor pricing, achieving other business objectives like attracting new customers or a combination of all factors mentioned. The respondents were requested to choose the most appropriate factor.

As can be seen from the findings in table 8.10, 13.3% of the institutions in the sample consider achieving the required internal rate of return when pricing the new product as the most important factor, while a significant portion of the sample, 26.7% of the institutions, see their competitors' prices as the most important factor to be considered while pricing the new product. As the findings show, only 8.9% of the sample uses pricing as a tool to achieve other business objectives such as attracting new customers, while the majority of the institutions in the sample 51.1% consider a combination of all factors while pricing their new product. The relatively high mean value of 2.98 provides evidence to support this analysis.

(Q35) What is the most important factor that will be considered when your institution prices the new product? (Please choose the most appropriate factor)								
		Frequency	Percent	Mean	Std. Deviation			
Valid	Achieving the required Internal Rate of Return	6	13.3					
	Competitor pricing	12	26.7	• • • •				
	Achieving other business objectives (like attracting new customers)	4	8.9	2.98	1.158			
	A combination of the above	23	51.1					
	Total	45	100.0					

Table 8.10: Most Important Factor Considered While Pricing New Products



8.2.10 Product Approval From National Bodies

This section attempts to investigate the launch stage of the new product and Table 8.11 details the findings on whether approval from national bodies in the country of the participant's institution is needed before launching the new product. For the question in this section, the respondents were provided with three options including approvals from regulators, central *Shari'ah* board or no approval is required. The respondents were requested to choose all appropriate options.

(Q36) Which of the following national bodies do you have to apply to in order to get any new products authorised? (Please tick all appropriate boxes)										
	Count Percent Mean Std. Deviation									
Regulators/Supervisors	Yes	42	93.3%							
	No	3	6.7%	1.07	0.252					
	Total	45	100.0							
National Shari'ah Board	Yes	8	17.8%							
	No	37	82.2%	1.82	0.387					
	Total	45	100.0							
No approval is required	Yes	3	6.7%							
	No	42	93.3%	1.93	0.252					
	Total	45	100.0							

Table 8.11: Product Approvals from National Bodies

The findings in table 8.11 show that 93.3% of the sampled institutions are required by their national regulators or supervisors to submit their new products for approval before launch. On the other hand, only 17.8% of the institutions in the sample are required, by their national *Shari'ah* board, to submit their new products for approval before launch. The high mean value of 1.82 provides further evidence to support this supposition. Moreover, the institutions that have indicated that they are not required to submit their new products for approval to any national body, meaning that they can launch their products immediately upon completing their internal approval process, represent only 6.7% of the sample. This is evidenced by the very high mean value of 1.93.

8.2.11 Types and Timing of Post-Launch Reviews

This section focuses on the types of post-launch reviews conducted by the institutions in the sample on newly launched products, and the results are depicted in Table 8.12. The respondents were provided with different review options including reviews of



profitability, sales targets, pricing, policies and procedures and review for *Shari'ah* compliance. The respondents were requested to choose all reviews conducted by the institution for the new products.

As can be seen in table 8.12, the analysis revealed that 73.3% of the institutions in the sample conduct a review of the product profitability after launch, while the review of sales target is conducted by 57.8% of the sampled institutions. In addition, the review of pricing is conducted by 71.1% of the institutions in the sample.

The analysis also indicates that 57.8% of the institutions in the sample conduct a review of the new product policies and procedures, while 73.3% of the sampled institutions indicate that they conduct a review for *Shari'ah* compliance on their newly launched products.

(Q37) What types of review doe tick all appropriate boxes)	es your inst	itution usually	v carry out af	ter the launc	h of the new produ	ct? (Please
		Count	Percent	Mean	Std. Deviation	Rank
Review of product profitability	Yes	33	73.3%			
	No	12	26.7%	1.27	0.447	1
	Total	45	100.0			
Review of sales target	Yes	26	57.8%			
	No	19	42.2%	1.42	0.499	3
	Total	45	100.0			
Review of pricing	Yes	32	71.1%		0.458	
	No	13	28.9%	1.29		2
	Total	45	100.0			
Review of policies and	Yes	26	57.8%			
procedures	No	19	42.2%	1.42	0.499	3
	Total	45	100.0			
Review of Shari'ah compliance	Yes	33	73.3%			
	No	12	26.7%	1.27	0.447	1
1	Total	45	100.0			

 Table 8.12: Types of After Launch Review Carried on New Products

In terms of rank, the reviews for *Shari'ah* compliance and profitability share the top rank with 73.3% of the institutions conducting both reviews on the newly launched products indicating the importance of both reviews for the majority of the institutions in the sample. Pricing comes second with 71.1% of the institutions indicating that they review the pricing after launch, while the third place is shared between reviewing the sales targets and the policies and procedures with each review being conducted by 57.8% of institutions in the sample.



Following up from the previous question, Table 8.13 displays the findings in relation to the extent of timeframe by which institutions in the sample conduct their reviews after the launch of the new product. The respondents were offered different timeframe options to choose from, which included conducting the review after three, six and twelve months or as and when required.

(Q38) How long after the launch date the institution will conduct these reviews?					
		Frequency	Percent	Mean	Std. Deviation
Valid	After 3 months	10	22.2	2.62	1.134
	After 6 months	10	22.2		
	After 12 months	12	26.7		
	As and when required	13	28.9		
	Total	45	100.0		

Table 8.13: Timeframe for Reviewing Newly Launched Products

The analysis indicates that the institutions in the sample are divided in relation to the timing of the reviews carried out on the newly launched products with 22.2% of the sample conducting their reviews after three months of product launch. Similarly, another 22.2% of the sampled institutions conduct the review after six months. Furthermore, a slightly higher percentage of the institutions, namely 26.7% of the sample, conduct the review of their newly launched products after twelve months and finally, 28.9% of the institutions in the sample conduct the review as and when required. This result is confirmed with relatively high mean value of 2.62.

8.2.12 Utilisation of the Information Collected During Product Reviews

Table 8.14 depicts the findings as to how the institutions in the sample utilise the information gathered during the review process. The respondents were offered three different options including passing the information gathered during the review process to the product development team, the Asset and Liability Committee (ALCO), or to the operation department. It should be noted that the respondents were asked to choose all applicable options.

The analysis shows that 55.6% of the institutions in the sample pass the information gathered during the review of the newly launched product to the product development team to revise the identified aspects of the product. In addition, the majority of the institutions, namely 71.1% of the sample, pass the information to ALCO. Finally,


64.4% of the institutions in the sample pass the information gathered during the product review to operations department to rectify any identified issues.

(Q39) How does the institution utilise the information gathered in the reviews? (Please choose all applicable options)									
		Count	Percent	Mean	Std. Deviation				
Information passed to the product development team	Yes	25	55.6%						
	No	20	44.4%	1.44	0.503				
	Total	45	100.0						
Information passed to ALCO	Yes	32	71.1%						
	No	13	28.9%	1.29	0.458				
	Total	45	100.0						
Information passed to	Yes	29	64.4%						
operations department	No	16	35.6%	1.36	0.484				
1	Total	45	100.0						

Table 8.14: Utilisation of the Information Gathered in the Reviews

8.2.13 Difficulties in Product Development: Exploring Barriers

This section attempts to identify the main challenges and barriers facing the institutions in the sample, in relation to product development. It also provides information on the risks associated with product development and how these risks are managed or mitigated by the institutions in the sample.

Table 8.15 explores the key barriers facing new product development from the respondents' point of view. The questionnaire offered the respondents multiple statements representing different potential barriers for product development and requested the respondents to rank these issues in order of severity where 1 is the least severe and 5 is the most severe. As can be realised in table 8.15, the first potential barrier tested is the *Shari'ah* scholars' lack of knowledge about financial products, where the analysis depicts that 62.3% of the respondents think that the lack of knowledge of the *Shari'ah* scholars in financial products is either the most severe barrier or the second most severe barrier to product development (ranked as 4 and 5), while 31.1% of the respondents consider it to be within the two least severe barrier (ranked as 1 and 2). The remaining 6.7% of the respondents seem to be indifferent in relation to the *Shari'ah* scholars' lack of knowledge about financial products (as they ranked it as 3). This result is confirmed with relatively high mean value of 3.44.



The resistance of *Shari'ah* scholars to new contemporary applications of Islamic finance is tested next. As the depicted findings in table 8.15 show 11.1% and 6.7% of the respondents in the sample ranked this as the first and second most severe barriers, respectively, while 33.3% ranked it within the least two severe barriers. In addition, 48.9% of the sampled institutions is of the opinion that the resistance of the *Shari'ah* scholars to contemporary applications of Islamic finance is of medium importance, as they ranked it 3. This result is further substantiated with the relatively average mean value of 2.84.

The third potential barrier tested is in relation to the credit risk specialists' lack of understanding of the risks associated with Islamic products, and the findings in table 8.15 display that 51.1% of the sampled institutions consider this to be in the top two most severe barriers facing product development, while 24.4% rank it as the third most severe barrier. Furthermore, 13.3% and 11.1% of the sample rank the credit risk specialists' lack of understanding of risks associated with Islamic products as fourth and fifth, respectively, in terms of the severity of the barrier. This result is confirmed with high mean value of 3.29.

The lack of research in the area of Islamic product development as a potential barrier to product development is tested next, and the analysis depicts that 11.1% of the respondents in the sample rank it as the top most severe barrier facing product development, while 20.0% of the sample rank it as the second most severe barrier. The majority of the respondents in the sample, namely 60.0%, rank it among the two least severe barriers facing product development. The remaining 8.9% of the sample is neutral towards the impact of the lack of research in the area of Islamic product development on product development. The lowest mean value in the table of 2.60 evidences this conclusion.

The last barrier tested in this section is the costs associated with developing new innovative products. The analysis suggests that 28.9% of the sample considers the high costs related to developing new innovative products to be the most severe barrier facing product development, however, only 8.9% considers it to be the second most severe barrier. On the other hand, 51.1% of the respondents consider the cost issue to be amongst the two least severe barriers facing product development. As can be seen from the findings, the remaining 11.1% of the respondents in the sample are



indifferent in relation to whether the cost associated with developing new innovative products is a barrier or not for product development. The overall result is confirmed with relatively average mean value of 2.82.

In terms of rank, the *Shari'ah* scholars' lack of knowledge about financial products seems to be the most severe barrier as perceived by the respondents with the highest mean value of 3.44. The second most severe barrier is the credit risk specialists' lack of understanding of the risks associated with Islamic products with a mean value of 3.29, which is followed by the resistance of *Shari'ah* scholars to new contemporary applications of Islamic finance that comes in the third place with a mean value of 2.84. Rank four goes to the costs associated with developing new innovative products with a mean value of 2.82, while the mean rank demonstrates that the least severe barrier, as seen by the respondents, is the lack of research in the area of Islamic product development with the lowest mean value of 2.60. Thus, it seems that the *Shari'ah* related issues are considered more important by the respondents

(Q40) What are the key barriers to developing new products? (Please rank the options 1,2,3in order of severity where 1 is the least severe and 5 is the most severe)								of
Rank		1	2	3	4	5	Total	Mean Rank
Shari'ah scholars' lack of	Count	10	4	3	12	16	45	
knowledge about financial	Percent	22.2%	8.9%	6.7%	26.7%	35.6%	100%	1
products	Mean			3	.44			1
	Std. Dev			1.	.589			
Resistance of <i>Shari'ah</i> scholars to new	Count	5	10	22	3	5	45	
	Percent	11.1%	22.2%	48.9%	6.7%	11.1%	100%	2
contemporary application of	Mean			2	.84			5
Islamic finance	Std. Dev	1.086						
Credit Risk specialists' lack	Count	5	6	11	17	6	45	
of understanding of the risks	Percent	11.1%	13.3%	24.4%	37.8%	13.3%	100%	2
associated with Islamic	Mean	3.29						
products	Std. Dev			1.	199			
Lack of research in the area	Count	10	17	4	9	5	45	-
of Islamic product	Percent	22.2%	37.8%	8.9%	20.0%	11.1%	100%	_
development	Mean			2	.60			5
	Std. Dev			1.	.338			
The costs associated with	Count	15	8	5	4	13	45	
developing new innovative	Percent	33.3%	17.8%	11.1%	8.9%	28.9%	100%	4
products	Mean			2	.82			4
	Std. Dev			1.	.669			

Table 0.13. The field Datates Facility from the Development	Table 8.1	5: The Ke	v Barriers	Facing	Product	Developmen
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8.2.14 Exploring Perceived Risks in Product Development

The perception of the respondents regarding the risks usually considered by the institutions while developing new products are explored in this section and the findings are reported in Table 8.16. The question, designed in an open-ended format, offered the respondents the freedom to express their views on the different types of risks related to new products. The respondents were asked to provide at least one risk and the management techniques used to mitigate it.

The respondents in the sample provided a wide range of different risks and mitigation techniques and many respondents mentioned multiple risks. The analysis in table 8.16 illustrates that the dominant risks are the market-related risks with 37.8% of the respondents in the sample indicating that the success of the new product depends hugely on the market conditions. The respondents mentioned different types of mitigation techniques used by their institutions to manage the market risks including better advertising and awareness campaigns on Islamic finance, ensuring proper customer segmentation, proper training to sales teams, conducting market research and involving potential customers in the design process of the new products.

(Q41) Please identify, from your point of view, the risks involved in developing new products and indicate how these risks are managed? (Please identify at least one risk)								
		Frequency	Percent	Rank				
Valid	Market Risk	17	37.8	1				
	<i>Shari'ah</i> Non-compliance Risk	13	28.9	2				
	Credit Risk	13	28.9	2				
	Legal Risks	12	26.7	3				
	Financial Risk	7	15.5	4				
	Operational Risks	6	13.3	5				
	Reputational Risk	4	8.9	6				
	Liquidity Risk	1	2.2	7				
	Currency exchange risk	1	2.2	7				

Table 8.16: The Key Risks in Product Development

Both *Shari'ah* non-compliance risk and credit risk came second with each being opted for by 28.9% of the respondents in the sample. The respondents listed different types of mitigation methods used by their institutions to manage *Shari'ah* non-compliance risk related to product development including ensuring initial review of the legal agreements by the in-house *Shari'ah* compliance officer or *Shari'ah* advisor,



obtaining approval from the SSB before launching the product, ensuring that the product design, process and procedures are compliant with *Shari'ah* requirements, conducting proper *Shari'ah* audit on the product documentation and implementing adequate *Shari'ah* governance framework.

On the other hand, those who have specified credit risk element provided a list of mitigation techniques that include having a comprehensive credit assessment process, obtaining a promise to purchase from customers to cover the risk related to not completing the transaction, having a proper security or guarantee in place and ensuring that a proper and adequate collection process is in place.

As can be seen in table 8.16, legal risk comes third, representing 26.7% of the sample. The respondents offered different mitigation techniques used by their institutions to manage the legal risk which include ensuring the ongoing compliance with applicable laws and regulations through regular review and update of the documents, processes and procedures, conducting proper assessment from legal, regulatory and *Shari'ah* compliance perspectives on all aspects of the new product and using external specialist law firms with experience in Islamic finance.

Financial risk is ranked in the fourth place with 15.5% of the sample indicating that financial risk is one of the important risks in relation to product development. The respondents mentioned different types of mitigation techniques used by their institutions to manage the financial risks, including building a proper financial model based on correct assumptions and accurate allocation of costs, ensuring proper approval process for the product's financial matters through good governance and ongoing review of the product performance with proper mechanism to receive regular feedback from customers.

As for operational risk, it is ranked in the fifth place with 13.3% of the respondents indicating that operational risk is one of the risks that might impact product development. The techniques listed by the respondents to mitigate operational risk include having proper and detailed processes and procedures, ensuring that the IT system is fit for the purpose of the product and in line with *Shari'ah* requirements, having a proper and comprehensive operational risk assessment, and providing adequate training to operations staff to ensure proper implementation of the product.



With regards to reputational risk, the findings in table 8.16 illustrate that it comes next in the sixth place with 8.9% of the respondents in the sample believing that reputational risk may impact the product development. The respondents mentioned few mitigation techniques used by their institutions to manage reputational risk, including providing proper disclosure on the product, ensuring full *Shari'ah* compliance of the product and obtaining proper advice from specialised firms.

As the findings show, the seventh place is shared between liquidity risk and currency exchange risk, each chosen by one respondent only, and each representing 2.2% of the sample. The technique used to mitigate the liquidity risk referred to having a comprehensive liquidity risk assessment. Whereas, for currency exchange risk, the mitigation technique specified is to obtain proper Islamic hedging instrument.

8.2.15 Exploring Attitude Towards Innovation

Table 8.17 presents the findings on the sampled institutions' attitude towards innovation in product development. The respondents were offered three different options to choose from, which included whether the institution is usually supportive of new ideas, resistant to new ideas, or whether the institution is usually reluctant to new ideas.

(Q42) Please identify the organisational attitude towards innovation in developing new products?								
		Frequency	Percent	Mean	Std. Deviation			
Valid	Supportive of new ideas	43	95.6					
	Resistant to new ideas	2	4.4	1.04	0.208			
	Total	45	100.0					

 Table 8.17: The Attitude towards Innovation in Developing New Products

The analysis depicts that the overwhelming majority of the respondents, representing 95.6% of the sample, believe that their institutions are supportive of new ideas, while only 4.4% of the respondents in sample feel that their institutions are resistant to new ideas. None of the respondents have reported that their institutions are reluctant to new ideas in respect of product development.



8.3 INFERENTIAL DATA ANALYSIS FOR THE THIRD PART OF THE QUESTIONNAIRE

In the preceding part of this chapter, the collected data from the third and last part of the questionnaire (nineteen questions) were analysed using descriptive statistics. In this part, inferential analysis is used to identify whether there are any significant differences in opinion among the participants in relation to the selected independent variables namely the respondents' positions and the institution's location, size (by balance sheet items and by the number of employees), age and nature of activities.

The inferential statistics analysis, as stated in the previous chapter, employs mainly Kruskall-Wallis (KW) test as a tool for non-parametric data analysis. The significance level used for the Kruskal-Wallis test in this chapter is also 10% to allow examining a higher degree of difference in opinion among the sample. Furthermore, only the results that showed statistically significant differences at 10% (p value <0.10) are depicted in the KW tests tables.

8.3.1 Testing the Main Differences of Opinions and Preferences: A Non-Parametric Analysis

The inferential analysis using the KW test on the third part of the questionnaire begins by testing questions 24 and 25, which inquire whether the institutions in the sample have prepared specific documents in relation to product development process and whether such documents have been approved by the SSB. The results related to all independent variables (namely the respondents positions, the institution's location, size (by balance sheet items and by the number of employees), age and nature of activities, indicate that there are no statistically significant differences in opinion among the participants, as the p value exceeds the critical p value of 0.10. This result implies that the majority of participants have similar views in relation to the documentation of the product development process and its approval by the SSB.

As for question 26, it is a follow up on the previous two questions and enquires about whether the institution regularly updates the product development process document; the KW test results for this question are presented in Table 8.18, which shows that there are no statistically significant differences in relation to the respondents' positions, the institutions' geographical location by region, size (by balance sheet



items and by number of employees) and the institutions' nature of activities. However, the results show that there are statistically significant differences in relation to the institution's age.

The KW test in table 8.18 against the age of the institution as the independent variable returned a p value of 0.024 indicating a statistically significant difference among the respondents. The highest mean rank value of 16.88 is associated with institutions established in the period 2005 – 2012 indicating that the younger the institution the less likely it is to review and update the documents related to the product development process.

	Age						
Question	Category	Mean Rank	Asymp. Sig				
Q26 - Is the product	1975 - 1984	13.50					
development process document regularly updated?	1985 - 1994	4.50	0.024				
	1995 - 2004	13.50	0.024				
	2005 - 2012	16.88					

Table 8.18: KW Test Results for Q26

In relation to question 27, which attempts to identify how strictly the process of product development is used by the institutions in the sample, the results related to all independent variables returned a p value exceeding the critical p value of 0.10. This result implies that the majority of participants have similar views in relation to the strictness of using the product development process within their institutions.

The next question tested is question 28, which explores the key sources of ideas for new products and KW test results related to all independent variables returned a p value higher than the critical p value of 0.10, indicating that the majority of participants share similar views on the main sources of ideas for new products.

In respect of question 29, it investigates the detailed steps used by the participating institutions for developing new products and how often these steps are followed. The KW test results, depicted in Tables 8.19a and 8.19b, indicate that there are no statistically significant differences in opinions among the participants in relation to the respondents' positions and the institutions' geographical location (by region). However, there are statistically significant differences in relation to the institutions'



age, size (by both, the number of employees and the balance sheet items, namely total liabilities and capital) and according to the institutions' nature of activity.

With regards to the age of the institutions, the KW test results in table 8.19a indicate that there are statistically significant differences in relation to several stages of the product development process including the approval of the concept paper by the SSB, obtaining the SSB's approval (for all documents and process flows), development of the IT system and operational processes and procedures and finally, in relation to the training of personnel; all stages having a *p* value < 0.10.

As can be seen in table 8.19a, the KW test results for the approval of concept paper by the SSB stage in relation to age has a p value of 0.091 which indicates that there is a statistically significant difference among the respondents at 0.10 significance level. The high mean rank value of 34.50 is associated with institutions established in the period 1985 – 1994, implying that those institutions are more likely to submit the concept paper for SSB's approval compared to other institutions in the sample.

As for obtaining SSB's approval (for all documents and process flows) stage, the KW test results returned a p value of 0.068, which indicates that there is a statistically significant difference among the respondents at 0.10 significance level in relation to the age of the sampled institutions. The high mean rank value of 28.00 is associated with institutions established in the period 1985 – 1994, which suggests that those institutions will probably obtain the SSB approval for all documents related to the new product compared to other institutions in the sample.

In respect of the stage pertaining to the development of the IT system and operational procedures, the KW test results returned a p value of 0.056 which indicates that there is a statistically significant difference among the respondents at 0.10 significance level with regards to the age of the sampled institutions. As the results in table 8.19a show, the high mean rank value of 37.00 is associated with institutions established in the period 1985 – 1994, denoting that those institutions are more keen on developing their IT system and create new operational procedures for new products when compared to other institutions in the sample.

Finally, in relation to the stage pertaining to the training of personnel, the KW test results returned a p value of 0.091, which, as can be seen in table 8.19a, indicates that



there is a statistically significant difference among the respondents. The high mean rank value of 31.75 is associated with institutions established in the period 1985 – 1994, indicating that those institutions are more likely to always train their personnel on new products compared to other institutions in the sample.

Overall, testing of the product development process stages in this section, in relation to age as an independent variable, shows that all of the differences in question 29 are related to institutions established in the period 1985 – 1994 which indicates that these institutions are stricter in implementing the product development process when compared to other institutions in the sample. It should be noted that those institutions are considered mainly precursor of the successful Islamic industry that we have in the world now.

In terms of the institutions' size by the number of employees, the KW test results in table 8.19a indicate that there are statistically significant differences in relation to four different stages of the product development process, namely; brainstorming exercise to generate new product ideas, review of the product documentation to ensure compliance with AAOIFI rules, obtaining SSB approval (for all documents and process flows) and in-house testing, all of which have a p value <0.10.

The KW test results for the brainstorming exercise to generate new product ideas stage has a p value of 0.093, which indicates that there is a statistically significant difference among the respondents at 0.10 significance level. The high mean rank value of 33.33 is associated with institutions that have 1,001 to 2,000 employees, indicating that those institutions are more likely to do brainstorming exercise to generate new product ideas than the other institutions in the sample.

In relation to the stage involving reviewing product documentation to ensure compliance with AAOIFI rules, the KW test results in table 8.19a returned a p value of 0.027 with regards to the size of institutions, which indicates that there is a statistically significant difference among the respondents at 0.05 significance level. The high mean rank value of 27.67 associated institutions that have 1,001 to 2,000 employees indicates that these institutions are keener on ensuring that their product documentation is compliant with AAOIFI rules compared to other institutions in the sample.



As for obtaining the SSB approval (for all documents and process flows) stage, the KW test results returned a *p* value of 0.043, which indicates that there is a statistically significant difference among the respondents at 0.05 significance level with regards to the size of institutions. The high mean rank value of 28.00 is associated with different sizes of institutions covering the bands of 101 to 500, 1,001 to 2,000 and 2,001 to 3,000 employees, indicating that those institutions, obtain the SSB's approval for all documents related to new product compared to other institutions in the sample.

Finally, in respect of the in-house testing stage, the KW test results returned a p value of 0.082, which indicates that there is a statistically significant difference among the respondents in relation to the size of the sampled institutions. As can be seen in table 8.19a, the high mean rank value of 29.68 is associated with institutions that have 101 to 500 employees indicates that those institutions are more likely to carryout in-house testing on their new products compared to other types of institutions in the sample.

Summarising the analysis related to the size of the institution (by number of employees) as an independent variable, results show that institutions that have 1,001 to 2,000 employees are stricter in implementing the product development process when compared to other institutions in the sample.

In terms of the institutions' nature of activities, the KW test results in table 8.19a demonstrates that there is statistically significant difference in relation to the in-house testing stage only, which has a p value of 0.093. This indicates that there is a statistically significant difference among the respondents at 0.10 significance level. The high mean rank value of 31.50 is associated with Islamic banking windows, indicating that this type of institutions is more likely to carryout in-house testing on their new products compared to other types of institutions in the sample.



Table 8.19a: KW Test Results for Q29

Q29 - What are the steps used for developing new products in your institution and how often will the	A	Age		Size (Number of Employees)			Nature of Activities		
Product Development team follow them?	Category	Mean Rank	Asymp. Sig	Category	Mean Rank	Asymp. Sig	Category	Mean Rank	Asymp. Sig
Brainstorming exercise to	1975 - 1984	21.71		1 - 100	24.55		Islamic Commercial Bank	22.06	
generate new product ideas	1985 - 1994	23.50		101 - 500	24.43		Islamic Investment Bank	25.00	
	1995 - 2004	21.33	0.040	501 - 1000	7.67	0.002	Islamic Banking Window	22.75	0.004
	2005 - 2012	23.88	0.949	1001 - 2000	33.33	0.093	Islamic Retail Bank	19.50	0.984
				2001 - 3000	5.00		Islamic Fund	21.40	
				4001 - 5000	18.50		Takaful Operator	24.17	
Approval of Concept Paper by	1975 - 1984	24.00		1 - 100	23.25		Islamic Commercial Bank	22.25	
	1985 - 1994	34.50		101 - 500	24.61		Islamic Investment Bank	21.00	0.505
	1995 - 2004	16.22	0.001	501 - 1000	28.67	0.745	Islamic Banking Window	25.75	
	2005 - 2012	23.32	0.091	1001 - 2000	19.33		Islamic Retail Bank	17.75	
				2001 - 3000	17.00		Islamic Fund	19.80	
				4001 - 5000	16.13		Takaful Operator	31.58	
Review of the product	1975 - 1984	20.29		1 - 100	26.20		Islamic Commercial Bank	21.56	
compliance with AAOIFI rules	1985 - 1994	26.50		101 - 500	24.36		Islamic Investment Bank	26.42	
	1995 - 2004	15.56	0 127	501 - 1000	19.00	0.027	Islamic Banking Window	18.75	0.800
	2005 - 2012	25.88	0.127	1001 - 2000	27.67	0.027	Islamic Retail Bank	17.00	0.800
				2001 - 3000	7.00		Islamic Fund	24.60	
				4001 - 5000	5.75		Takaful Operator	23.50	
Obtaining SSB approval (for all	1975 - 1984	21.86		1 - 100	21.05		Islamic Commercial Bank	22.63	
documents and process nows)	1985 - 1994	28.00	0.079	101 - 500	28.00	0.042	Islamic Investment Bank	22.63	0.725
	1995 - 2004	16.06	0.008	501 - 1000	20.83	0.043	Islamic Banking Window	28.00	0.725
	2005 - 2012	25.02		1001 - 2000	28.00		Islamic Retail Bank	28.00	

Q29 - What are the steps used for developing new products in your institution and how often will the	Age			Size (Number of Employees)			Nature of Activities		
Product Development team follow them?	duct Development team follow them?CategoryMean RankAsymp. SigCategory		Mean Rank	Asymp. Sig	Category	Mean Rank	Asymp. Sig		
				2001 - 3000	28.00		Islamic Fund	18.50	
				4001 - 5000	11.88		Takaful Operator	23.50	
Development of the IT system	1975 - 1984	15.71		1 - 100	21.20		Islamic Commercial Bank	23.13	
procedures	1985 - 1994	37.00		101 - 500	27.64		Islamic Investment Bank	20.21	
	1995 - 2004	22.39	0.050	501 to 1000	25.50	0.545	Islamic Banking Window	28.50	0.121
	2005 - 2012	23.02	0.056	1001 - 2000 21.67		0.545	Islamic Retail Bank	37.00	0.131
				2001 - 3000	20.00		Islamic Fund	12.80	
	4001 - 5000		4001 - 5000	15.63		Takaful Operator	28.42		
In-house testing	1975 - 1984	17.50		1 - 100	21.25		Islamic Commercial Bank	24.06	0.002
	1985 - 1994	29.00		101 - 500	29.68		Islamic Investment Bank	21.63	
	1995 - 2004	17.61	0.160	501 - 1000	19.00	0.092	Islamic Banking Window	31.50	
	2005 - 2012	25.52	0.160	1001 t-o 2000	27.00	0.082	Islamic Retail Bank	28.00	0.093
				2001 - 3000	11.00		Islamic Fund	9.30	
				4001 - 5000	11.38		Takaful Operator	27.00	
Training of personnel	1975 - 1984	14.14		1 - 100	21.50		Islamic Commercial Bank	23.94	
	1985 - 1994	31.75		101 - 500	27.89		Islamic Investment Bank	16.58	0.070
	1995 - 2004	20.83	0.001	501 - 1000	19.00	0.204	Islamic Banking Window	27.50	
	2005 - 2012	24.86	0.091	1001 - 2000	30.33	0.204	Islamic Retail Bank	27.50	0.272
				2001 - 3000	19.00		Islamic Fund	21.20	
				4001 - 5000	11.88		Takaful Operator	30.33	

As for the institutions' size by total liabilities, the KW test results with p value of 0.067 related to the *Shari'ah* audit stage indicate that there is a statistically significant difference among the respondents. As can be seen in table 8.19b, the highest mean rank with a value of 29.50 is associated with institutions that have total liabilities of \$501m to \$1b, indicating that institutions of this size are more likely to carryout *Shari'ah* audit on their new products compared to other institutions of different sizes in the sample.

The last independent variable that returned statistically significant results is the institutions' size by capital. As can be seen in table 8.19b, the KW test results with p value of 0.049 related to the stage of signing-off the product definition paper from all relevant departments indicates that there is a statistically significant difference among the respondents at 0.05 significance level. The high mean rank value of 31.00 associated with institutions that have a capital of less than \$1m indicates that these institutions are keener on signing-off the product definition paper from all relevant departments compared to other institutions of different sizes in the sample.

In summary, reflection on the differences in conducting the product development stages, in relation to the different independent variables creates a picture of the types of Islamic financial institutions that are more likely to follow strictly the product development process. The main attributes of these institutions as depicted in the analysis are those that have been setup in the period 1985 - 1994 and those that have a number of employees ranging between 1,001 and 2,000 employees.



Q29 - What are the steps used for developing new	Size (Total Lia	bilities)	Size (Capital)			
products in your institution and how often does the Product Development team follow them?	Category	Mean Rank	Asymp. Sig	Category	Mean Rank	Asymp. Sig	
Sign-off for the Product	Less than \$1m	16.75		Less than \$1m	31.00		
relevant departments	\$1m - \$5m	23.00		\$1m - \$5m	4.75		
_	\$11m - \$50m	23.25		\$6m - \$10m	4.75		
	\$51m - \$100m	22.00		\$11m - \$50m	25.00		
	\$101m t-o \$500m	22.71	0.992	\$51m - \$100m	22.19	0.049	
	\$501m - \$1b	23.00		\$101m - \$500m	25.47		
	\$1.1b - \$10b	25.75		\$501m - \$1b	25.00		
	Over \$10b	22.00		\$1.1b - \$10b	27.40		
				Over \$10b	7.00		
Shari'ah audit of the	Less than \$1m	8.50		Less than \$1m	19.00		
product	\$1m - \$5m	20.50		\$1m - \$5m	5.50		
	\$11m - \$50m	26.00		\$6m - \$10m	29.50		
	\$51m - \$100m	5.50		\$11m - \$50m	26.00	0.288	
	\$101m t-o \$500m	24.12	0.067	\$51m - \$100m	26.88		
	\$501m - \$1b	29.50		\$101m - \$500m	20.78		
	\$1.1b - \$10b	26.88		\$501m - \$1b	22.50		
	Over \$10b	19.00		\$1.1b - \$10b	25.30		
				Over \$10b	29.50		

Table 8.19b: KW Test Results for Q29

The next question tested is question 30, which attempts to identify the important factors considered by the institutions in the sample while identifying new product ideas for development. Table 8.20 depicts the KW test results for question 30 against the independent variables with significant p value. As can be seen, the test results indicate that there are no statistically significant differences in opinion among the participants in relation to the respondents' positions and in relation to the institutions' size (whether by balance sheet items or by the number of employees) or according to their nature of activity. However, there are statistically significant differences in relation to the institutions' age, as both variables have a p value <0.10.

In terms of geographical location, the KW test results in table 8.20 returned a *p* value of 0.080 in relation to one factor namely the fit with *maqasid al-Shari'ah*, indicating a



statistically significant difference among the respondents. The high mean rank value of 32.13, which is associated with institutions located in the Far-East, indicates that institutions located in this geographical region are less likely to consider the fit with *maqasid al-Shari'ah* compared to institutions in other regions.

With regards to the age of the institutions, the KW test results indicate that there are statistically significant differences in relation to two factors namely financial consideration and resource availability, where both factors have a p value <0.10. As depicted in table 8.20, the financial consideration factor KW test results returned a p value of 0.018 indicating a statistically significant difference among the respondents at 0.05 significance level according to the age of their institutions. The high mean rank value of 36.21 is associated with institutions established in the period 1975 – 1984, indicating that institutions that were established in that period are less likely to consider the financial side of the product as the most important factor compared to other younger institutions in the sample.

Whereas, the resource availability factor has a p value of 0.050, indicating a statistically significant difference among the respondents according to the age of their institutions, as depicted in table 8.20. The high mean rank value of 25.76 that is associated with newly established institutions (during the period 2005 – 2012) indicates that new institutions are less likely, compared to other institutions in the sample, to see the availability of resources as the most important factor while identifying new products for development.



Q30 - In identifying products for development.	Lo	cation		Age			
which of the following factors are given higher importance?	Category	Mean Rank	Asymp. Sig	Category	Mean Rank	Asymp. Sig	
Financial consideration	Middle East	24.93		1975 - 1984	36.21		
revenue, etc)	Europe	14.39		1985 - 1994	19.75		
	Far-East	23.25	0.128	1995 - 2004	18.33	0.018	
	Africa	22.00		2005 2012	21.50		
	US	35.25		2003 - 2012	21.30		
Fit with the objectives of Shari'ah (maqasid al- Shari'ah)	Middle East	19.73		1975 - 1984	13.71		
	Europe	30.72	0.080	1985 - 1994	26.38	0.198	
	Far-East	32.13		1995 - 2004	25.33		
	Africa	14.50		2005 2012			
	US	24.25		2005 - 2012	24.22		
Resource availability	Middle East	23.14		1975 - 1984	11.07		
capability, etc.)	Europe	28.11		1985 - 1994	26.63	0.050	
	Far-East	17.63	0.358	1995 - 2004	23.00		
	Africa	21.75		2005 2012	25.50		
	US	10.00		2003 - 2012	25.76		

Table 8.20: KW Test Results for Q30

In respect of question 31, it provides information on the main components of the concept paper for new products as prepared by the institutions in the sample. Table 8.21 depicts the KW test results in relation to a number of independent variables with significant p value.

The test results in table 8.21 indicate that there are no statistically significant differences in opinion among the participants in relation to the respondents' positions, institutions' sizes (by the number of employees) or in relation to their nature of activities. However, there are statistically significant differences in relation to the institutions' geographical location (by region), age and the size of their total assets, all having a *p* value <0.10.

In respect of the geographical location, the KW test results in table 8.21 demonstrate the existence of a statistically significant difference among the respondents at 0.05 significance level with p value of 0.000 in relation to one element of the concept paper related to describing the product nature, benefits and features. As can be seen, the high mean rank value of 43.50 that is associated with institutions located in Africa indicates that institutions located in this geographical region are less likely to describe



the new product nature, benefits and features in their concept paper compared to institutions in other regions.

With regards to the age of the institutions, the KW test results in table 8.21 indicate that there are statistically significant differences in relation to two elements of the concept paper, which are market research and identifying the appropriate *Shari'ah* structure, with both elements having a p value <0.10.

		Q31 - What are the main components of the New Product Concept Paper?							
Variable	Category	Market research		Describi nature, fea	ng product benefits & tures	Identifying the appropriate <i>Shari'ah</i> structure			
		Mean Rank	Asymp. Sig	Mean Rank	Asymp. Sig	Mean Rank	Asymp. Sig		
	Middle East	22.43		22.61	0.000	23.82			
Location (by Region)	Europe	26.00		21.00		19.00			
	Far-East	21.63	0.719	21.00		24.63	0.392		
	Africa	27.25		43.50		30.25			
	US	16.00		21.00		19.00			
Age	1975 - 1984	28.86	0.060	21.00	0.38	25.43	0.011		
	1985 - 1994	32.88		26.63		35.88			
	1995 - 2004	21.00		21.00		21.50			
	2005 - 2012	20.50		23.70		20.80			
	Less than \$1m	16.00		21.00		19.00			
	\$1m - \$5m	16.50		43.50		41.50			
	\$6m - \$10m	16.00		21.00		19.00			
Size (Total	\$51m - \$100m	20.50	0.807	25.50	0.082	23.50	0.446		
Assets)	\$101m - \$500m	23.88	0.897	23.25	- 0.082	23.50	- 0.446 		
	\$501m - \$1b	23.50		21.00		19.00			
	\$1.1b - \$10b	23.50		21.00		24.00			
	Over \$10b	27.25		21.00		19.00			

 Table 8.21: KW Test Results for Q31

As can be seen in table 8.21, the KW test results for both market research and identifying the appropriate *Shari'ah* structure elements returned a p value of 0.060 and 0.011 respectively, indicating statistically significant differences among the respondents. The high mean rank values of 32.88 and 35.88 for both elements, respectively, in relation to the institutions established in the period 1985 – 1994 indicate that institutions that were established in that period are less likely to conduct



a market research or work on including a description of the most appropriate *Shari'ah* structure in their concept paper for new products.

As for the institutions' size by total assets, the KW test results in table 8.21 indicate a statistically significant difference among the respondents at 0.10 significance level in relation to one element of the concept paper related to describing the product nature, benefits and features, which returned a p value of 0.082. The highest mean rank in the table with value of 43.50 associated with institutions that have total assets between \$1m and \$5m indicates that institutions of this size are less likely to describe the new product nature, benefits and features in their concept paper compared to other institutions with different asset size in the sample.

The next question tested is question 32, which attempts to establish the basis on which the institutions in the sample decide on the most appropriate *Shari'ah* structure for the new product. The respondents were offered different options and were requested to choose only one of the options that represent, in their view, the most appropriate basis on which their institution will choose the *Shari'ah* structure for the new product. Table 8.22 depicts the KW test results against the independent variables with significant p value.

		Q32 On what basis does your institution decide on the most appropriate <i>Shari'ah</i> structure for a new product?						
Variable	Category	Mean Rank	Asymp. Sig					
	Less than \$1m	9.75						
	\$1m - \$5m	8.00						
	\$6m - \$10m	33.00						
	\$11m - \$50m	33.00						
Size (Capital)	\$51m - \$100m	19.19	0.090					
(Capital)	\$101m - \$500m	23.38						
	\$501m \$1b	26.50						
	\$1.1b - \$10b	19.10						
	Over \$10b	33.00						

Table	8 22.	KW	Test	Results	for	032
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It should be noted that there are no statistically significant differences in opinion among the respondents in relation to the respondents' positions and in relation to



institutions size (by number of employees), geographical location (by region), age of the institutions and their nature of activities. However, there is a statistically significant difference in relation to the institutions' size by one of the balance sheet items that is capital.

As can be seen in table 8.22, the KW test results for capital show a p value of 0.090 indicating that there is a statistically significant difference among the respondents at 0.10 significance level according to the capital size of their institutions. The highest mean rank value in the table with a value of 33.00 is associated with several sizes of institutions, including those having a capital of 6m - 10m, 1m - 50m and over 10b, indicating that these institutions are more likely to choose the *Shari'ah* structure for the new product using a combination of factors rather than depending on one or two factors.

As for question 33, it attempts to establish the main components of the new product definition paper as prepared by the institutions in the sample. The test results indicate that there are statistically significant differences in opinion among the respondents in relation to the respondents' positions and the institutions' geographical locations (by region), age and the size of balance sheet items of total assets and capital, all having a p value <0.10. However, the results did not provide any pattern that can be explained and therefore they were not presented in this research.

Next question tested was question 34, which attempts to identify the sources of information used by the financial institutions in the sample to develop the financial model needed for the product definition paper.

The test results indicate that there are no statistically significant differences in opinion among the participants in relation to the institutions geographical location (by region), size (neither by the number of employees nor by balance sheet items) or according to the institutions' nature of activities. However, there are statistically significant differences in relation to the respondents' positions and the institutions age, as both have a p value <0.10. Nevertheless, the results did not provide any pattern that can be explained and therefore they were not presented in this research.

In understanding the pricing, question 35 attempts to identify the most important factor being considered by the financial institutions in the sample when they price the



new product, for which the respondents were provided with various options including achieving the required Internal Rate of Return, competitor pricing, achieving other business objectives (like attracting new customers) and a combination of all factors. The results related to all independent variables returned a p value exceeding the critical p value of 0.10. This result implies that the majority of participants have similar views in relation to the factors considered by their institutions while pricing new products.

The next question tested was question 36, which attempts to identify whether approvals are needed from the regulatory or the central *Shari'ah* board for new products before they are launched. Table 8.23 depicts the KW test results for question 36 against the independent variables with significant p value. The test results indicate that there are no statistically significant differences in opinion among the participants in relation to the respondents' positions, the institutions age, size (by the number of employees or by balance sheet items) or in relation to the institutions nature of activity. However, there is a statistically significant difference in relation to the institutions of the respondent of the response of the statistically significant difference in relation to the institutions.

As can be seen from the results depicted in table 8.23, the KW test results for the geographical location indicate that there is a statistically significant difference in relation to obtaining approval from the national *Shari'ah* board as it returned a *p* value of 0.000 indicating differences among the respondents at 0.05 significance level. As can be seen, the high mean rank value of 27.00 is associated with institutions located in Europe, Africa and the US, indicating that institutions located in these geographical regions are not required to obtain approval from their national *Shari'ah* authority for new products compared to institutions in Middle East and the Far-East regions.

Q36 - Which of the following national bodies do	Location					
you have to apply to in order to get any new products authorised?	Category	Mean Rank	Asymp. Sig			
	Middle East	23.79				
Central National <i>Shari'ah</i> Authority/Board/Council	Europe	27.00				
	Far-East	4.50	0.000			
	Africa	27.00				
	US	27.00				

Table 8.23: KW Test Results of Q36



In furthering the analysis, question 37 investigates the types of post-launch reviews on newly launched products conducted by the institutions in the sample. The questionnaire listed a range of different options including reviews of profitability, sales targets, pricing, policies and procedures and review for *Shari'ah* compliance. The KW test results, depicted in Table 8.24, indicate that there are no statistically significant differences in opinion among the participants in relation to the respondents' positions and the institutions' geographical location (by region), age or size (by the number of employees). However, there are statistically significant differences in relation to the institutions' size (by total liabilities) and according to their nature of activities.

With regards to the institutions' size by total liabilities, as can be seen in table 8.24, the KW test results with p value of 0.034 related to the review of product profitability indicate that there are statistically significant differences among the respondents. The highest mean rank in the table with value of 39.50 is associated with institutions that have total liabilities of less than \$1m and institutions with total liabilities of \$51m - \$100m, indicating that institutions that have liabilities of this size are less likely to carryout reviews of product profitability compared to other institutions with different sizes in the sample.

In terms of the institutions' nature of activities, the results in table 8.24 depict that there is statistically significant difference in relation to the review of policies and procedures, which has a p value of 0.012. This indicates that there are statistically significant differences among the respondents at 0.05 significance level. Islamic retail banks, as a category, managed to capture the highest mean rank value of 36.00, indicating that this type of institutions is less likely to carryout review of policies and procedures related to their new products compared to other types of institutions in the sample.



Q37 - What types of review does	Size (Total	Liabiliti	es)	Nature of Activities			
your institution usually carry out after the launch of the new product?	Category	Mean Rank	Asymp. Sig	Category	Mean Rank	Asymp. Sig	
	Less than \$1m	39.50		Islamic Commercial Bank	18.41		
	\$1m - \$5m	17.00		Islamic Investment Bank	24.50	0.187	
	\$11m - \$50m	20.75		Islamic Banking Window	28.25		
Review of product	\$51m - \$100m	39.50	0.034	Islamic Retail Bank	17.00		
profitability	\$101m - \$500m	22.29	0.004	Islamic Fund	26.00		
	\$501m - \$1b	17.00					
	\$1.1b - \$10b	25.44		Takaful Operator	28.3		
	Over \$10b	17.00					
	Less than \$1m	24.75		Islamic Commercial Bank	19.13		
	\$1m - \$5m	28.50 21.00 36.00 0.747		Islamic Investment Bank	21.00	0.012	
Review of policies and procedures	\$11m - \$50m			Islamic Banking Window	13.50		
	\$51m - \$100m			Islamic Retail Bank	36.00		
	\$101m - \$500m			Islamic Fund	31.50	0.012	
	\$501m - \$1b	21.00					
	\$1.1b - \$10b	21.94		Takaful Operator	32.3		
	Over \$10b	19.13					

 Table 8.24: KW Test Results of Q37

In investigating as to how long after the launch of the new product the institutions in the sample conduct their reviews in question 38, the respondents were offered different timeframe options to choose from. These options included conducting the review after three, six or twelve months or as and when required.

The KW test results, depicted in Table 8.25 illustrate that there are no statistically significant differences in opinion among the participants in respect to the respondents' positions, the institutions geographical location (by region), institutions' size (by the number of employees or balance sheet items) or according to the institutions' nature of activities. However, there is a statistically significant difference in relation to the institutions' age that returned a p value of 0.064 with a statistically significant difference among the respondents at 0.10 significance level. The high mean rank value of 27.29 that is associated with institutions established in the period 1975 – 1984 indicates that older institutions, being fully established, are more likely to



conduct their review on annual basis or as and when required rather than on three or six months basis.

	Age					
Question 38	Category	Mean Rank	Asymp. Sig			
How long after the launch	1975 - 1984	27.29				
date will these reviews start?	1985 - 1994	8.00	0.074			
	1995 - 2004	20.78	0.064			
	2005 - 2012	25.00				

Table 8.25: KW Test Results of Q38

The next question tested is question 39, which is a follow up on the previous question and attempts to identify how the institutions in the sample utilise the information gathered during the review process. The respondents were offered three different options including passing the information gathered during the review process to the product development team, passing the information to the Asset and Liability Committee (ALCO) or passing the information to operations department.

The KW test results depicted in Table 8.26 indicate that there are no statistically significant differences in relation to all independent variables, except for the age of the institutions which returned a significant p value of 0.086 in relation to passing the information collected to operations department. This indicates that there is statistically significant difference among the respondents. The high mean rank value of 27.86, which is associated with institutions established in the period 1975 – 1984, indicates that older institutions are less likely to pass information collected through the product review to operations department compared to other newer institutions in the sample.

Q39 - How does the institution utilise the information gathered in the reviews?	Age					
	Category	Mean Rank	Asymp. Sig			
Information will be passed	1975 - 1984	27.86				
to operations department	1985 - 1994	15.00	0.087			
	1995 - 2004	17.50	0.080			
	2005 - 2012	24.90				

Table 8.26: KW Test Results of Q39



In identifying the key barriers facing new product development from the respondents' point of view in question 40, Table 8.27 depicts the KW test results of question 40 against the independent variables with significant p value. The test results demonstrate that there are no statistically significant differences in opinion among the participants in relation to the respondents' positions or according to the institutions geographical location (by region) or the institutions size (by balance sheet items). However, there are statistically significant differences in respect of the institutions' age, size (by the number of employees) and the institutions' nature of activities, with all of them having a p value <0.10.

As can be seen in table 8.27, in terms of the age of the institutions, the KW test results indicate that there are statistically significant differences in relation to two potential key barriers facing new product development namely, the resistance of *Shari'ah* scholars to new contemporary applications of Islamic finance and the lack of research in the area of Islamic product development, both of which returning a p value of 0.059 and 0.055, respectively, indicating differences among the respondents at 0.10 significance level.

In relation to the resistance of *Shari'ah* scholars to new contemporary application of Islamic finance as a key barrier, the highest mean rank value of 30.63 associated with institutions established in the period 1985 - 1994 indicates that those institutions are more likely to consider the resistance of *Shari'ah* scholars to new contemporary applications of Islamic finance as the key barrier facing new product development compared to other institutions in the sample.

As for the lack of research in the area of Islamic product development as a key barrier, the highest mean rank value of 31.21 is associated with institutions established in the period 1975 - 1984, indicating that those institutions are more likely to consider the lack of research in the area of Islamic product development as the key barrier facing new product development compared to other institutions in the sample.

In terms of the institutions' size by the number of employees, the KW test results depicted in table 8.27 indicate that there is statistically significant difference in relation to the *Shari'ah* scholars' lack of knowledge about financial products as a key barrier facing new product development, which returned a p value of 0.089, indicating



that a statistically significant difference exists among the respondents at 0.10 significance level. The high mean rank value of 37.50 associated with institutions that have 2,001 - 3,000 employees indicates that those institutions are more likely to consider *Shari'ah* scholars' lack of knowledge about financial products as a key barrier facing new product development compared to other institutions in the sample.

Finally, in relation to the institutions' nature of activities, the KW test results in table 8.27 show that there is a statistically significant difference in relation to the key barrier related to the lack of research in the area of Islamic product development, which returned a p value of 0.059, indicating a statistically significant difference among the respondents at 0.10 significance level. As can be seen from the results, Islamic banking windows scored the highest mean rank value of 31.00, indicating that this type of institutions is more likely to consider the lack of research in the area of Islamic product development as the key barrier facing new product development compared to other types of institutions in the sample.

		57
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	223	

Table 8.27: KW Test Results of Q40

Q40 - What are the key	Age		Size (Number of employees)			Nature of Activities			
barriers to developing new products?	Category	Mean Rank	Asymp. Sig	Category	Mean Rank	Asymp. Sig	Category	Mean Rank	Asymp. Sig
Shari'ah scholars' lack of	1975 - 1984	16.21		1 - 100	25.98		Islamic Commercial Bank	19.09	
products	1985 - 1994	18.88		101 - 500	22.61		Islamic Investment Bank	27.46	
	1995 - 2004	26.44	0.225	501 - 1000	11.33	0.000	Islamic Banking Window	30.50	0.426
	2005 - 2012	24.32	0.335	1001 - 2000	7.83	0.089	Islamic Retail Bank	18.00	
				2001 - 3000	37.50		Islamic Fund	23.30	
			-	4001 - 5000	26.00		Takaful Operator	20.92	
Resistance of Shari'ah	1975 - 1984	15.29	0.059	1 - 100	24.85	0.837	Islamic Commercial Bank	18.34	0.427
contemporary application of	1985 - 1994	30.63		101 - 500	21.79		Islamic Investment Bank	24.00	
Islamic finance	1995 - 2004	29.78		501 - 1000	26.67		Islamic Banking Window	25.63	
	2005 - 2012	21.50		1001 - 2000	17.50		Islamic Retail Bank	34.75	
				2001 - 3000	26.50		Islamic Fund	25.80	
				4001 - 5000	18.50		Takaful Operator	25.42	
Lack of research in the area of Islamic product development	1975 - 1984	31.21		1 - 100	20.23		Islamic Commercial Bank	25.25	
	1985 - 1994	25.88		101 - 500	22.79		Islamic Investment Bank	16.50	-
	1995 - 2004	14.17		501 - 1000	25.83		Islamic Banking Window	31.00	
	2005 - 2012	23.42	0.055	1001 - 2000	32.67	0.556	Islamic Retail Bank	5.50	0.059
				2001 - 3000	19.00		Islamic Fund	24.50	
				4001 - 5000	29.25		Takaful Operator	29.25	

8.4 CONCLUSION

This chapter provides descriptive and inferential analysis of the third part of the questionnaire by investigating product development process in Islamic financial institutions using the information communicated by the participants through a questionnaire survey. As the analysis demonstrates, frequency distribution, mean value and standard deviation have been used for descriptive statistical analysis, while the Kruskall-Wallis (KW) test is used for inferential analysis.

This chapter focused on the third part of the questionnaire, which contains 19 questions, and investigates the documentation and the detailed step by step process used by the sampled institutions to develop, launch and review their new products. This chapter provides also an overview of the main challenges, barriers and risks faced by the institutions in the sample while developing new product.

The findings of the descriptive analysis in this chapter indicate that the majority of the institutions in the sample have a formal and documented process for product development. However, less than a third of the institutions in the sample obtain their SSB's approval for the product development process and less than fifth of the sampled institutions review and update their product development process regularly. Furthermore, the majority of the institutions in the sample indicate that they do not follow the product development process very strictly.

The analysis also shows that top three sources of ideas for new product development are products of other Islamic financial institutions, followed by customers' demand and finally, the products of conventional financial institutions.

In relation to the detailed steps of product development, the institutions in the sample have significant differences in the way they conduct product development, which are also captured in the inferential analysis section of this chapter. However, the majority of the differences are *Shari'ah*-related where most of the institutions in the sample seem to be using a firmer approach to ensure *Shari'ah* compliance of the new products under development compared to a minority of the institutions in the sample.



The least important factor in selecting the best new product ideas seems to be the fit of the idea with *maqasid* al-*Shari'ah* as it reported the highest mean value of 3.53. While, the majority of the institutions representing 55.6% of the sample will use a combination of factors to decide on the most appropriate *Shari'ah* structure for the new product.

The descriptive analysis investigates also the launch stage including approvals required form national bodies, where the majority of the institutions with 93.3% of the sample reporting that they have to receive regulators' approval before launching their new products. While only 17.8% of the sample will be required to obtain product approval from a national *Shari'ah* board.

The analysis also covered the types of after launch review for new products and how the information collected from these reviews is utilised. The results indicate that the most performed reviews are compliance with *Shari'ah* and product profitability as both ranked first according to their mean value of 1.27. On the other hand the most common practice in relation to the use of the information collected from the review is to pass it to ALCO, which had a mean value of 1.29.

The analysis covered also the main barriers and risks associated with product development and how they are managed or mitigated by the institutions in the sample. In relation to the barriers, *Shari'ah* scholars' lack of knowledge about financial products, with a mean value of 3.44, as well as the credit risk specialists' lack of understanding of risks associated with Islamic products, with a mean value of 3.29, are ranked respectively as the first and second most sever barriers to product development in Islamic financial institutions. Whereas in relation to the main risks, market risks came first as indicated by 37.8% of the sample, while both *Shari'ah* noncompliance risk and credit risk came second with each pointed out by 28.9% of the sample.

The inferential analysis against the independent variables returned a considerable number of differences in opinions among the respondents. The majority are due to the age of the institutions, of which older institutions that have been setup during the periods 1975 - 1985 and 1985 – 1994 reported most of the differences.



The differences according to the location of the institutions also revealed some statistically significant differences that are related in most cases to institutions located in the US and Africa. Other statistically significant differences are also identified in relation to the size of the institutions (by number of employees and by balance sheet items) and in relation to the institutions' nature of activities. However, only a few differences are identified in relation to the respondents' position. Overall, the identified differences among the respondents are analysed to verify any potential trends in the way the product development process is conducted by different institutions in the sample.

The next Chapter provides further insight on the process of product development as it discusses in details the findings of the descriptive and inferential analysis described in the empirical chapters so far.



CHAPTER 9

CONTEXTUALISATION AND DISCUSSION: AN INTERPRETATIVE APPROACH

9.1 INTRODUCTION

This research aims at conducting a critical exploration on the current practices of product development and financial engineering in Islamic financial institutions using both questionnaire survey and semi-structured interviews. It also aims at establishing the methodology and principles for engineering efficient and *Shari'ah*-based financial products that meet not only the form of *Shari'ah* contracts but also the substance of *maqasid al-Shari'ah*.

This chapter starts by discussing the findings of the descriptive and inferential analysis presented in the previous three chapters and presents the findings of the semi-structured interviews where the discussion structure follows the general sequence of the survey questions and the hypotheses outlined in Chapter 5. The primary data collected through the semi-structured interviews is summarised and analysed for the purpose of this chapter as an auxiliary method of verification and substantiation. The objective is to explore, integrate and discuss the findings to develop a deeper understanding of the current practices related to product development and to identify any differences among Islamic financial institutions. The hypotheses are then tested against the results of the descriptive and inferential tests, and against the primary data collected through the interviews. The significance level used in most researches is $\alpha = 0.05$, however, in this research the significance level is increased to $\alpha = 0.10$ to allow the respondents. The findings of the discussion for each hypothesis are compared, when possible, with previous research conducted on the same subject.



It should be noted here that due to the unique nature of the research subject, the researcher found only one previous research conducted by Ahmed (2011), which is used to assess the findings of this research against. Furthermore, an attempt was also made to provide further interpretations through 'meaning-making' with the objective of responding to 'so what' question. Hence, the results of this research are expected to contribute in filling a significant gap in the literature in relation to product development in the Islamic financial industry.

9.2 INTERPRETATIVE REFLECTIONS ON STRATEGY, PLANS, RESOURCES AND THE ORGANISATIONAL STRUCTURE IN RELATION TO PRODUCT DEVELOPMENT IN ISLAMIC FINANCIAL INSTITUTIONS

This section contextualises and interprets the findings of the survey questions presented in Chapter 7. The findings are compared, when possible, with the views collected through the interviews to validate the results. The focus of the discussion is on the importance given to product development and the main differences in respondents' opinions in relation to strategy, plans, resources, organisational structures and the drivers behind product development in Islamic financial institutions.

9.2.1 Strategy and Market Positioning

The implementation of clear product development strategy is one of the key success factors for product development as discussed in Chapter 2. Different institutions will have different strategies and the choice of the strategy will depend on the market conditions surrounding the institutions.

However, as the Islamic financial industry is relatively new, the majority of Islamic financial institutions are expected to adopt a certain strategy that targets developing new products. Subsequently, to explore the different strategies used by Islamic financial institutions, the following hypothesis is formulated:

Hypothesis 1: The majority of Islamic financial institutions have a strategy to develop new products



The frequency analysis as depicted in Table 7.1 illustrates that the majority of the institutions, representing 62.2% of the sample, perceive themselves to have a strategy for developing new products. These institutions will be either developing new products in existing markets or developing new products in new markets. The remaining institutions have positioned themselves as expanding existing products within existing or new markets. Hence, the null hypothesis is accepted and the alternative hypothesis is rejected. This finding is also confirmed by similar research conducted by Ahmed (2011:133) who poses a similar question and the results from his research show that 80% of the banks have adopted a strategy to develop new products in existing markets.

As the Islamic financial industry is at the early stages of development and the competition with conventional institutions on market share is intense, Islamic financial institutions are making a logical choice by adopting a strategy to develop new products that will give them a competitive advantage in the market.

However, the researcher believes that the age of the institution might have an impact on the choice of the product development strategy as new institutions tend to develop new products while older institutions tend to use existing, well-established products to either achieve higher penetration in their existing market or to expand into new markets. Thus, to have a better understanding of the relation between the choice of strategy and other factors, a sub-hypothesis is formulated with the objective of exploring any existing trends or correlation between the independent variables and the choice of product development strategy. The sub-hypothesis is:

 H_{1-1} : There are no statistically significant differences among the Islamic financial institutions in relation to their choice of strategy according to the age of the institution as an independent variable

In exploring the results, the null hypothesis is accepted, since the inferential analysis results using KW test for question 12, which enquired about the market positioning of the institution in relation to developing new products against all independent variables returned *p* values² that are higher than the critical *p* value at $\alpha = 0.10$

² As all independent variables returned a p values higher than the critical p value at 0.10, the inferential analysis results for question 12 were excluded from being depicted in this research.



The results indicate that the majority of the Islamic financial institutions tend to focus on developing new products, perhaps as a mean to position themselves as market leader and to be able to compete against conventional and Islamic competitors. However, there are different product development strategies that can be used by the institutions, but the success of the strategy depends on having proper planning, innovative approach and a commitment from the management to provide the appropriate resources.

The views of few interviewees for this research paint a different picture regarding the type of strategies that should be adopted by Islamic financial institutions. For example, Raza (2014), one of the interviewees, argues that Islamic financial institutions need to maximise the benefit of existing products to foster their positions in their actual markets before developing new products or expand into new markets. In reflection on his view, this approach, indeed, will be much easier and relatively cheaper as it will help in gathering the critical mass needed to achieve good profitability and financial stability. Similarly, Hameed (2015), another interviewee for this study, asserted the need to focus on improving the documentation quality of existing products first (as they vary considerably from one institution to another) before developing new products. While Siddiqui (2015), who was interviewed for the purpose of this research, indicated that the product development department "has to continuously work to refine and improve the existing products and also keep an active watch on new trends and market development to come up with innovative solutions that are not previously offered. So it has to be a balanced and mixed approach".

In contemplating the results, both outcomes from the survey's respondents and the interviewees are valid and each of them looks at the problem from a different angle. The majority of the respondents of the survey questionnaire see the need to continue developing new products to improve their competitive advantage in the market. While the point of view emerging from the interviews is that having more low quality products will only worsen the industry's image and therefore the priority is to improve existing products before creating new ones.

Consolidating the industry's position by enhancing the quality of existing products is important, but should not be on the expense of developing newer and better products. Both targets can be achieved by the institutions simultaneously through adopting a



mixed approach strategy for product development with the objectives of achieving continues and incremental improvement on existing products as well as designing and launching new innovative products that are needed to fill the gap in the market.

9.2.2 The Importance of Product Development

Successful product development requires a clear strategy, detailed implementation plan, innovative culture and supportive environment, (Ahmed, 2011). Those institutions that choose to develop new products should fulfil these requirements to ensure the success of their strategy. Hence, the importance given to product development within an institution can be reflected by the commitment of the management to fulfil these requirements. Based on this, the following hypothesis is formulated:

Hypothesis 2: Developing new innovative products is important for the majority of Islamic financial institutions

The descriptive analysis findings as depicted in Table 7.2 indicate that the null hypothesis is accepted, as the majority of the Islamic financial institutions show an overall commitment to product development with 64.4% of the respondents' institutions incorporating 'innovation' in their mission and 91.1% in their strategy. However, only 51.1% of the respondents' institutions translate their strategies into processes and plans, while 40% allocate annual budget for product development.

The findings are also supported by the results depicted in Table 8.17, which indicate that the perception of the overwhelming majority of the respondents, representing 95.6% of the sample, is that their institutions are supportive of new ideas.

The successful implementation of product development process depends on having consistency between all levels, starting with the top level that should have a clear vision for innovation integrated into the institution's overall strategy. The strategy is then translated into processes and plans (short, medium and long term) and supported by appropriate resources.

While the findings support the hypothesis, there seems to be a conflicting picture between the vision and strategy levels on one hand, and the implementation level in



the form of processes, plans and budget allocation on the other hand. Ahmed (2011:135) reported similar results showing high level of importance at the mission and strategy level, but with low commitment to providing support in the form of budget. He explains that this could be an indication of the lack of resources available to back the strategy and translate it into operational plans.

However, reflecting on the results, another possible explanation is that when it comes to innovating new products, product development activities have a lower priority within the sample institutions compared to other business objectives, which leads to not translating the strategy into actual plans.

On the other hand, important functions in any institution are usually driven by top level management. Similarly, the importance of product development function within the institution can be assessed by identifying the main driver behind it. Therefore, the following sub-hypothesis is formulated:

H_{2-1} : The main drivers of the product development function within Islamic financial institutions are the CEO or the head of business department

The results depicted in Table 7.3 support accepting the null hypothesis, as the respondents pointed out both the head of the relevant business departments, with 44.4% of the sample, and the CEO, with 40% of the sample, as the top main drivers for product development.

The results are understandable as in developing industries, businesses will always strive to generate new ideas to bring new business. The top management's support will be crucial for the successful implementation of the product development process (Bruce and Cooper, 2000). This view is also shared by one of the interviewees for this research, Choudhury (2015), who asserts that business departments generate the new ideas, and if they are suitable, the CEO will adopt them and ensure that the ideas are converted into successful products. This view is an accurate reflection of the actual practices as not all ideas will receive management support. If the new product idea is innovative and serves to achieve business objectives the management's support will be obtained.


The importance of product development can also be reflected by the level of resources committed by the institutions for this function. The resources needed include financial budget, staff (with the right knowledge and skills) and systems or technology. To further explore the level of the financial institutions' commitment to provide the required resources for product development within the Islamic financial industry, the following sub-hypothesis is formulated:

H_{2-2} : The majority of Islamic financial institutions will allocate the required resources for product development (either specifically or as required)

The null hypothesis is accepted, as the results depicted in Table 7.4 indicate that the majority of the Islamic financial institutions allocate some kind of resources either specifically or subject to requirements. The results show that 57.8% of the respondents indicated allocation of budget, 84.5% for staff allocation and 73.3% for systems and technology. This result however contradicts the view of Siddiqui (2015), one of the research interviewees, who believes that the industry has not given enough attention to the necessity of allocating the required resources to research the development of *Shari'ah* compliant products. He further asserts that "banks that have allocated proper resources and investment in this area are far ahead of their competition and are reaping benefits of their correct strategy".

The differences in the findings are understandable considering that the majority of the institutions in the sample are small to medium size institutions with usually limited resources.

These institutions will be willing to allocate the resources required for actual product development, but not to research activities that will be seen as inefficient allocation of resources. Hence, the research on new product development requires input from larger institutions and support of governmental or industrial bodies.

Despite the importance of the management's commitment to allocate resources, the actual allocation of these resources (specifically staff allocation) can be a more accurate measure of the importance of product development. Therefore, to further explore the level of staff allocation into product development the following sub-hypothesis is formulated:



 H_{2-3} : The majority of Islamic financial institutions will allocate fulltime staff to work in product development function

The descriptive analysis results depicted in Table 7.6 support the null hypothesis as only 35.6% of the institutions did not have fulltime staff in product development function; therefore, the null hypothesis is accepted. This result is also supported by the research conducted by Ahmed (2011:140) where the results of his research show that all institutions in the sample had fulltime staff dedicated for product development with average of 5.4 employees in each institution across the sample.

9.2.3 Organisational Structure and Product Development

The organizational structure for product development plays an important role in facilitating the product development process and in improving the chances of designing and launching successful products. There are different types of organizational structures used by different institutions including formal and informal, flat and cross-functional as discussed earlier in Chapter 2. However, according to Rosenau *et al.* (1996:493) the most common structures used for product development are those that are controlled by a particular function in the institution, hence, the following hypothesis is formulated:

Hypothesis 3: The majority of Islamic financial institutions have a dedicated product development department

Despite the importance of having a special department for product development, the findings depicted in Table 7.5 indicate that 68.9% of the sample institutions do not have such department. Based on this result, the null hypothesis is rejected and the alternative is accepted.

This, however, is in contrast to the results reported by Ahmed (2011: 137) whose research results show that 55% of the institutions have a separate unit for research /products/ business development. The variance between the result of this research and Ahmed's research is understandable as different institutions will adopt different structures to meet their specific needs.



The difference in preferences towards a certain structure is also reflected in the literature pertaining to product development where Ismail *et al.* (2012) and Rosenau *et al.* (1996) believe that adapting a proper organizational structure with cross-functional project teams is one of the success factors for the product development process, while, Urban *et al.* (1987), on the other hand, argue that having a unit dedicated for product development is crucial for innovation.

While the discussion above focuses on explaining the differences in relation to whether the institutions have adopted formal types of organisational structures, it is also important to understand the kind of informal structures used by the institutions to support and oversee the product development process. Having a product committee to oversee the product development process is one of the informal structures usually adopted by institutions as indicated by Urban *et al.* (1987). In order to explore whether Islamic financial institutions will have an informal structure in the form of product committee to support the function of product development, the following sub-hypothesis is formulated:

 H_{3-1} : The majority of Islamic financial institutions set up a product development committee to oversee the product development process

The findings depicted in Table 7.8 point out that 73.3% of the institutions support the product development process by establishing a certain committee that oversees the development of new products. Accordingly, the null hypothesis is accepted.

The size of the institution might play an important role in determining whether the institution will have a special committee responsible for overseeing the product development process.

This notion is asserted by Ahmed (2012) in the interview conducted with him for the purpose of this research where he asserted that the size of the institution affects the product development structure, as bigger institutions usually have a little bit better structure. In order to further investigate the potential differences in relation to the size of the institutions, the following sub-hypothesis is formulated:



 H_{3-2} : There is statistically significant difference among Islamic financial institutions in relation to having a special committee to oversee the product development activities according to the size of the institution

The findings depicted in Table 7.12 show that there is a statistically significant difference in relation to the institutional size in terms of capital with a p value of 0.074 that is lower than the critical p value at $\alpha = 0.10$, hence the null hypothesis is accepted and the alternative is rejected. The highest mean ranking value of 39.5 is associated with institutions that have a capital between \$1m and \$5m, indicating that these institutions are less likely to have a committee responsible for overseeing the development of new products. Furthermore, looking at the mean ranking patterns, it seems that the bigger the capital of the institution the more likely that the institution will have a committee that is responsible for overseeing the development of new products. This makes sense considering that larger institutions will probably have the required resources to afford having proper formal and informal structures to support the product development process.

Another important factor in the organisational structure for product development is identifying the final approving authority for new products, as the approval can be done either by one individual like the CEO or through a group of people like the product committee or by getting the heads of the relevant functions in the institution to sign off each new product.

Urban *et al.* (1987) argue that one of the responsibilities of the product committee is to review and approve new products. Considering that the majority of the institutions actually have a product development committee, the following sub-hypothesis is formulated in order to further investigate the role of such committee:

H_{3-3} : The majority of Islamic financial institutions use the product development committee to authorise new products

As can be seen in Table 7.7 the majority of the institutions in the sample do not have a particular individual responsible for authorising new products. Considering that the majority of the institutions in the sample reported to have a product committee, it can be argued that the results support the notion that such committees are also responsible for approving new products, therefore, the null hypothesis is accepted and the



alternative is rejected. This result, however, is in contrast with Ahmed (2011) research findings as he reported that in the majority of the institutions, the final authorisation of new products is done by the CEO. The variance between the two research results is understandable as different institutions can use different organisational structures for product development.

9.2.4 The Role of the Shari'ah Advisors

The unique nature of Islamic financial products requires input and supervision from *Shari'ah* point of view throughout the process of product development. This is usually done by the SSB and supported by the *Shari'ah* advisor or the *Shari'ah* department. Ahmed (2011:104) argues that the role of the *Shari'ah* department is to assist in the different stages of the product development process, therefore the organisational structure should allow for such input and review. This is also supported by Laldin (2013) who was interviewed for this research, as he argues that the SSB members should be involved in the early stages of the process and should not leave it for the product development department to develop the whole product and then present it to the SSB for approval. He further argues that the efforts of all parties, including *Shari'ah* scholars, product development team, risk management team and other relevant stakeholders should be coordinated like a workshop to ensure that the product design is solid from the very beginning.

Subsequently, the following hypothesis is formulated to investigate whether Islamic financial institutions require the *Shari'ah* advisor to provide input to the product development process:

Hypothesis 4: The majority of the Islamic financial institutions require the Shari'ah advisor to be involved in the product development process

The descriptive analysis results depicted in Table 7.9 support the null hypothesis and therefore it is accepted and the alternative is rejected.

The results, as expected, indicate that the vast majority of Islamic financial institutions require their *Shari'ah* advisor to be involved in several stages of the product development process. This indicates that the majority of Islamic financial institutions are aware of the risks involved in not having the input from *Shari'ah* point



of view during the process, which might lead to substantial losses and delays in the process. However, the level of involvement of the *Shari'ah* advisor in the process might differ from one institution to another. Therefore, the following sub-hypothesis is formulated:

 H_{4-1} : There are no statistically significant differences among the Islamic financial institutions regarding the level of involvement of the Shari'ah advisor in the different stages of the product development process according to the independent variables

The findings depicted in Table 7.15 show that there are statistically significant differences in relation to the institutional age, size and nature of activities, all of which returning p values lower than the critical p value at $\alpha = 0.10$, hence the null hypothesis is rejected and the alternative is accepted. The differences among the respondents are related to different stages in the product development process including concept stage, pricing stage, reviewing legal documentation stage, implementation stage, testing stage and the *Shari'ah* audit stage. Ahmed (2011:141) reported similar findings, where different institutions involve the *Shari'ah* advisor at different stages of the process.

While the ideal situation is to have *Shari'ah* advisor involved in most of the product development stages, the most important stages that will require *Shari'ah* input are the concept stage, reviewing legal documentation stage and *Shari'ah* audit stage. Not having the *Shari'ah* input at these critical stages increases the *Shari'ah* non-compliance risk significantly. This argument is supported by the findings of the factor analysis depicted in Table 7.19, which indicate that the most important stages within the *Shari'ah* compliance component are reviewing legal documentation from *Shari'ah* point of view, submitting product documentation for approval by the SSB and the *Shari'ah* audit stage.

9.3 INTERPRETATIVE REFLECTIONS ON THE PRODUCT DEVELOPMENT PROCESS DESIGN, DOCUMENTATION, IMPLEMENTATION AND DIFFICULTIES IN ISLAMIC FINANCIAL INSTITUTIONS

The objective of this section is to provide further discussion and deeper understanding of the findings related to the last part of the survey questions presented in Chapter 8.



The focus of this discussion section is on the design and documentation of the product development process. The discussion covers also the main risks, challenges and difficulties facing the development of new Islamic financial products. The findings of the discussion are compared, when possible, with the views collected through the interviews to validate the results.

9.3.1 Documentation of the Product Development Process

Product development is a complex and detailed process that requires continuous improvement to achieve the optimal process. This improvement might not be optimal without having the process documented properly. Rosenau *et al.* (1996:492) emphasise the importance of having a documented formal process on increasing the opportunity of performance improvement. Subsequently, to further investigate the use of documented product development process in the Islamic financial institutions, the following hypothesis is formulated:

Hypothesis 5: The majority of Islamic financial institutions have a formal documented product development process

The results depicted in Table 8.1 do support the null hypothesis with 60% of the institutions indicating that they have a documented product development process and therefore the null hypothesis is accepted and the alternative is rejected. However, despite the importance of having a documented product development process, the other 40% of the institutions in the sample reported not to have documented process for product development, which makes the process more of an *ad hoc* approach, thus reducing the chances of improving the process. Ahmed (2011:142) reported similar findings on the issue, where in his research 60% of the sample has a formal documented process, 30% uses broad guidelines and 10% uses informal processes.

The level of market sophistication might have an impact on whether the institution will have a documented policy or not. Hameed (2015), one of the interviewees for this research, suggests, based on his experiences as a lawyer, that Islamic financial institutions located in Europe and the US tend to have much larger and more sophisticated compliance departments and would therefore seek to ensure that the process is properly documented and followed compared to the GCC institutions. On the other hand, Raza (2014), one of the interviewees, argues, based on his experience



in providing product development services to several Islamic financial institutions, that while the majority of the banks claim to have a documented product development policy, a good percentage of them will not have a detailed one, and those with detailed process will be out of date. Such percentage will increase in the case of investment banks and *takaful* companies.

Hence, the views of the interviewees suggest that there are potential differences between Islamic financial institutions in relation to the geographical location and the nature of activities. Both views make sense as developed markets have higher level of supervision with higher internal controls through internal audit. Similarly *takaful* companies, investment banks, Islamic windows and funds tend not to have a proper documented process for product development. To further explore this statement, the following sub-hypothesis is formulated:

 H_{5-1} : There are statistically significant differences among the Islamic financial institutions in relation to the use of formal documented product development process according to the institutions geographical location and nature of activities

The inferential analysis results for question 24, which enquired about whether the institution has a formal and documented product development process, against all independent variables returned p values³ that are higher than the critical p value at $\alpha = 0.10$. Therefore, the null hypothesis is rejected and the alternative is accepted. Hence, the interviewees' perception on this matter cannot be confirmed.

Furthermore, one of the benefits of documenting the product development process is that any improvement to the process can be reflected in the documentation.

Therefore updating the document regularly is important to reap the benefits of having a documented formal process. Thus, the following sub-hypothesis is formulated to further explore the current practices among the institutions in the sample:

 H_{5-2} : Islamic financial institutions that have a documented product development process will update it regularly

³ As all independent variables returned a p values that is higher than the critical p value at 0.10, the inferential analysis results for question 24 were excluded from depicting in this research.



The findings depicted in Table 8.1 show that the majority of Islamic financial institutions that have a documented product development process do not update their process documents regularly; therefore the null hypothesis is rejected and alternative hypothesis is accepted. Hence the findings support the view of Raza (2014) as discussed above. The product development process documentation should include a self-monitoring mechanism to ensure it is updated regularly. In other words the process document should specify the frequency of update for the process and how this update will take place and who will sign it off. In this context, it will be crucial to obtain the *Shari'ah* advisor's sign off for any update to the product development process.

Furthermore, one of the main benefits of having a product development process document or manual is to be able to impose discipline in the implementation of the process. Rosenau *et al.* (1996:5) specifies discipline in implementing all stages of the new product development plan as one of the success factors of product development. On the other hand, Kuczmarski (1988:36) argues that the key benefit of consistency is the accumulated learning that will be gained by doing something the same way, time and time again.

In fact, only full discipline in implementing the product development process will allow the institution to realise the benefits of a formal documented process. In order to investigate how disciplined Islamic financial institutions are in following their product development process, the following sub-hypothesis is formulated:

H_{5-3} : Islamic financial institutions that have a documented product development process will use it strictly

The descriptive results depicted in Table 8.2 do not support the null hypothesis and therefore it is rejected and the alternative is accepted, since only 26.7% of the institutions in the sample will either follow the process strictly or very strictly.

It should be noted that Ahmed (2011:143) reported similar findings in his research indicating different levels of compliance with the process from different Islamic banks. The findings are also substantiated by Raza (2014) who presented similar views during the interview for this research and asserted that not all banks follow the product development policy and procedure to its full extent and many times try to cut



corners and do things on *ad hoc* basis for different reasons. The solution, he adds, is to audit the process annually by internal audit to ensure that it is being followed rigorously and updated on a regular basis.

This finding can be critical in building an understanding regarding the performance of the product development process in Islamic financial institutions. The lack of discipline in following the process could be due to the lack of human resources to carry out all of the work needed in all stages of the product development. Hence, in such cases the product team might end up skipping some of the steps to get the product out on time. Another issue that usually contributes to the lack of discipline is that the product team will usually spend most of their time on preparing the regular product management tasks rather than focusing on the creative part of product development. As discipline in following the product development process strictly is seen as one of the success factors of the process, the result of testing hypothesis 5-3 might provide partial explanation to the lack of innovation in the Islamic financial industry.

9.3.2 Key Sources of Ideas for New Products

It is commonly known that all new products start with an idea. Therefore, generating new ideas is the first step in developing successful product as indicated by many researchers including Trott (2008), Ahmed (2011) and Yusoh (2011). Ideas may come from different sources, whether internal or external.

In relation to Islamic financial institutions, external sources for new ideas may include products offered by either conventional or Islamic counterparts. However, there is a general belief that Islamic financial institutions' main source of ideas for new product development is the products of conventional financial institutions.

This view is shared by a number of interviewees for this research, including, amongst others, Dusuki (2012), Kilani (2013) and Williams (2013), who believe that Islamic products are replica of their conventional peers, with the removal of *haram* elements therein. For example, Laldin (2013), one of the interviewees, explains the issue by stating

Most bankers look at what products are there in the conventional market and then choose the one that they can 'Islamise'. Using an Islamic contract, they



offer it as Islamic product. This is not wrong, but this kind of practice does not help innovation. We need to shift our minds when it comes to product development.

Siddiqui (2015), as one of the interviewees for this research, shares a similar view as he states "we need to move away from the concept of bank as a money lender and start seeing Islamic banks as trading houses and investment companies. This fundamental shift will help us to appreciate the true nature and potential of Islamic banks".

By reflecting on this issue, there are two factors that should be considered. The first is related to what the objectives of product development are, while the other is related to what process should be used to achieve these objectives. Product development is used to fulfil the needs of the customers; hence a product manager should identify the needs and then design the product to meet these needs. Considering that human needs are similar, the product, whether Islamic or conventional, is designed to fulfil the customers' needs and thus, the outcome of the product is the same.

In other words when a customer wants to buy a house, he can do so either by purchasing the house outright or by obtaining finance (Islamic or conventional). In case of finance, both Islamic and conventional products will allow the customer to own the house at the end of the finance term and both will ask the customer to pay a monthly payment.

The end result in both cases is that the customer has fulfilled his need, however, the difference is in the process. Therefore, from the customer's point of view (who might not always understand the differences in the process) he will see a lot of similarities between the Islamic and conventional products.

The second factor to be considered is the process used to develop the product, which in this case Islamic financial institutions seem to be taking the easiest way as explained in the literature review in Chapter 2 and copy the other products in the market (whether Islamic or conventional products) rather than taking an innovative approach to create different types of products with different characteristics that fulfil customers' needs.



Based on the above, the following hypothesis is formulated to further explore the views of the interviewees:

Hypothesis 6: Islamic financial institutions use the products of conventional banks as the main source of ideas for new product development

Based on the outcome of this research, the null hypothesis is rejected and the alternative is accepted as the findings of Table 8.3 show that the conventional banks' products are ranked as the third source of ideas with a mean ranking value of 3.56, while the products of other Islamic banks was selected as the main source of ideas for new products with a mean ranking value of 2.60 and customers were positioned as the second source of ideas with a mean ranking value of 2.80.

In a comparative manner, the findings are supported by Ahmed (2011:147) whose research findings indicated that the products of conventional banks are ranked as the third source of ideas for new products after market research, which came first, and products of other Islamic banks that came in the second place.

The interview conducted with Raza (2014) provides further insight on the reason behind the discrepancy between the common belief and the research results as follows

Many Islamic banks consider formal market research as a wasteful exercise and form their assumptions on the basis of informal sources of information. In their quest of taking shortcuts by mimicking conventional products and blindfolded competition with other Islamic banks, the customers' needs often get side-lined.

The respondents' mixed opinions regarding the main sources of ideas for new products can be further investigated to see if there are statistically significant differences amongst the participants, therefore the following sub-hypothesis is created:

 H_{6-1} : There are no statistically significant differences amongst the Islamic financial institutions in respect of the main sources of ideas according to the independent variables



The null hypothesis is accepted, since the KW tests results against all independent variables for question 28, which explores the key sources of ideas for new products, returned *p* values⁴ that are higher than the critical *p* value at $\alpha = 0.10$.

While the results of Table 8.3 show that the main source of ideas is products of other Islamic banks, the fact is that Islamic financial products, especially in the retail sector, look the same as conventional products and provide the same service without adding any additional value. Therefore, regardless whether the source of the product is from conventional or Islamic institutions, most customers do not see any differences between these products.

Hence the real issue here is that while the majority of Islamic financial institutions do have a strategy to develop new products, the approach adopted in most cases is reactive or copycat approach, which creates less successful products. Therefore, the solution is to create new products that can be differentiated by bringing superior value to the customers and increasing awareness amongst the customers by demonstrating why Islamic products are different. This can only be done through the collective efforts of all stakeholders, including Islamic financial institutions, *Shari'ah* scholars and the regulatory authorities.

This notion is supported by the views of Laldin (2013), where he stated during the interview held with him for the purpose of this research:

Adopting enhanced practices is not easy because the mind-set of Islamic bankers is conventional as the majority come from conventional banks. However, it is the rule of *Shari'ah* board, regulators and other parties to educate the involved stakeholders how they should move forward and have a paradigm change in the mind-set of the stakeholders, not just a small shift.

Laldin (2013) also asserted the need to have a complete vision for the development of Islamic financial system through educating people, bringing new talents and demonstrating the difference between Islamic and conventional financial industries.

In addition, Dusuki (2012), one of the interviewees for this research, had similar views and argued that "among the main challenges facing the industry is the mind-set that Islamic finance practitioners have. We need to have paradigm shift in order to

 $_4$ As all independent variables returned a p values that is higher than the critical p value at 0.10, the inferential analysis results for question 28 were excluded from being depicted in this research.



innovate and develop products which are truly *Shari'ah* compliant". The reality is, not only the majority of the personnel working in the Islamic financial industry have been coming from conventional institutions, but many Islamic financial institutions rather prefer candidates with conventional finance experience. While having full understanding and exposure to the conventional finance is important, those who have built their experience in conventional finance institutions are usually less likely to provide creative solutions in the Islamic context and therefore will be less effective compared to those who had most of their experience in the Islamic finance. The future of the industry, the researcher believes, depends, to a large extent, on the ability of the industry to have home-grown professionals that can lead the industry forward.

9.3.3 Factors Determining New Product Ideas

After generating a number of new product ideas, financial institutions select the best idea to be developed based on a set of factors. Rosenau et al. (1996) argue that setting the criteria to define the best product option is one of the most important steps for strategic product development planning. The new product idea has to meet certain financial criteria, including return on capital and payback period, and be compatible with the corporate's strategic goals and business plans.

In addition to these factors, Islamic financial institutions need to test whether the new product idea will contribute positively to achieving *maqasid al-Shari'ah*. Jobst and Sole (2012:13) identify achieving *maqasid al-Shari'ah* as one of the main principles for developing Islamic financial products. Considering the importance of *maqasid al-Shari'ah* and in order to further understand the main factors used by Islamic financial institutions in selecting new product ideas, the following hypothesis is tested:

Hypothesis 7: Achieving maqasid al-Shari'ah is the most important factor for determining new product ideas in Islamic financial institutions

The test results depicted in Table 8.5 show that *maqasid al-Shari'ah* is ranked as the least important factor in identifying new products with a mean ranking value of 3.53, hence the null hypothesis is rejected and the alternative is accepted.



Ahmed (2011:148) reported similar findings from his research indicating that while Islamic financial institutions pay attention to *Shari'ah* compliance they do not give priority to achieving the Islamic values.

While such results raise concerns considering the importance of *maqasid al-Shari'ah* in the doctrine of Islamic finance, such results can be understood if we take into account that incorporating *maqasid al-Shari'ah* into the product development process is relatively new in the industry and there is a lack of knowledge and expertise on how *maqasid al-Shari'ah* can be actually integrated in the product development process. Furthermore, according to Kilani (2013), one of the interviewees for this research, *maqasid al-Shari'ah* is a wide issue and it is subjective as it can be interpreted differently by different scholars. Dusuki (2012), in his interview for this research, asserted that the purposes of using *maqasid al-Shari'ah* should be to ensure that the product structuring process is conducted correctly, the contracts are used in a way that fulfils the objectives and nature of the contract, but most importantly "the purpose of the product should be to create ease for the people and not to burden people like in the case of increasing debts".

Hence, different scholars might interpret achieving the *maqasid* differently, which makes it very difficult to implement *maqasid al-Shari'ah* in an institutionalised manner without having certain guidelines or standards that explain how an Islamic financial institution can actually achieve *maqasid al-Shari'ah* through product development.

Choudhury (2015) stated in his interview for this research that "new products need to meet *Shari'ah* requirements, business goals (in terms of sales volume and rate of return) and customers' needs. All are equally important, therefore getting the balance right is critical for the success of the new product". Similar views were also presented by Raza (2014) who stated in the interview that:

All factors should be taken into account when developing a new product, with a clear preference for achieving the *Shari'ah* objectives whilst keeping a balance in other factors as well. However, in some cases Islamic financial institutions may have other preferences that may result in changing the scorecard and the weighting given to each of these factors, meaning that *maqasid al-Shari'ah* may be overtaken by other elements.



The perception of achieving *maqasid al-Shari'ah* can be very subjective and hence it is difficult to measure without a proper testing methodology and a scorecard. However, this research attempts to take the discussion on this matter a step further by proposing a methodology to integrate *maqasid al-Shari'ah* into the product development process by adding further technical steps to the process as will be discussed in Chapter 10.

Another important measure in this context is the factors that determine the most appropriate *Shari'ah* structure for a new product. In order to further explore the bases on which Islamic financial institutions decide on the most appropriate *Shari'ah* structure for a new product, the following sub-hypothesis is tested:

H_{7-1} : The majority of Islamic financial institutions will select the Shari'ah structure that meets most of the criteria needed for a new product

The null hypothesis is accepted and the alternative is rejected since the descriptive analysis results depicted in Table 8.7 indicate that the majority of the institutions in the sample, namely 55.6% of them, opted for a structure that meets a combination of factors including best fit from *Shari'ah* point of view and providing the most protection to the institution and the customer at the same time.

This result is substantiated by Siddiqui (2015), one of the interviewees for this research, who also has the view that a combination of factors should be looked at before deciding on the most appropriate *Shari'ah* structure. He argues that the most appropriate factors to include, among others, are customers' demands and desired features, nature of the transaction and its tenor, profit expectation, re-pricing options, flexibility for early payment, risk profile, the process flow and its *Shari'ah* compliance. While it is a common practice to use a combination of factors to select the best appropriate structure for the products, as evidenced by the results, the attention should be given to each of these factors. Within the institution, the business departments will always try to maximise the return from the product, hence they will prefer the structure that provides the highest return and lowest transactional costs.

While the risk and legal departments will usually select the structure that will provide the lowest risk to the financial institution with the highest security (no one usually discusses the risks facing the customers except in relation to their ability to pay). On



the other hand, the *Shari'ah* advisor is more likely to be pushing towards the most appropriate structure from *Shari'ah* point view. It is quite rare to see all these departments agreeing on one structure from day one. Therefore the stakeholders need to achieve a balanced approach that provides reasonable return with acceptable risk to both the Islamic financial institution and the customer whilst maintaining compliance with *Shari'ah* requirements.

9.3.4 Design of the Product Development Process

There are different types of product development processes that can be used for developing financial products as discussed in details in Chapter 2. However, *Shari'ah* imposes certain requirements on Islamic financial products; therefore the design of the product development process in Islamic financial institutions should be customised by adding additional steps. In order to further investigate the practices of Islamic financial institutions in relation to these *Shari'ah*-related steps, the following hypothesis is tested:

Hypothesis 8: The most strictly performed stages in the product development process used by Islamic financial institutions are those related to Shari'ah

The results depicted in Table 8.4 indicate that Islamic financial institutions represented in the sample do not always preform all steps of the process. However, the highest mean ranking values are associated with the *Shari'ah*-related stages including the approval of concept paper by the SSB, with a mean ranking value of 4.20; obtaining SSB approval for product documents, with a mean ranking value of 4.71; and *Shari'ah* audit of the product, with a mean ranking value of 4.62. Therefore, the null hypothesis is accepted and the alternative is rejected. Thus, the results indicate a higher level of awareness on the importance of *Shari'ah* input and approval in relation to new product development. However, while the focus on *Shari'ah*-related stages is important, the institutions should not neglect the remaining stages of the product development process.

In preforming the product development process, Islamic financial institutions usually develop a concept paper and a product definition paper for the product. Ahmed (2011), Rosenau *et al.* (1996) and FPDC (2013) all provide details on the components of these documents as detailed in Chapter 2. Subsequently, in order to explore



whether Islamic financial institutions have difference in opinions in relation to the components of these documents, the following sub-hypotheses are formulated:

 H_{8-1} : There are no statistically significant differences among the Islamic financial institutions in relation to the main components of the new product concept paper according to the independent variables

The inferential analysis results depicted in Table 8.21 show differences in opinion in relation to three components of the concept paper, namely; the market research component with statistically significant differences according to the age the institution with p value of 0.060; describing product nature, benefits and features component with statistically significant differences according to both the location of the institution with p value of 0.000, and the size of the institution, with p value of 0.082; and finally identifying the appropriate *Shari'ah* structure component with statistically significant differences of the institution of 0.081.

As three components have returned p values less than the critical p value at $\alpha = 0.10$, the null hypothesis is rejected and the alternative is accepted. There is no set-in-stone structure for the product concept paper, as each institution will design the paper according to its needs and requirements. In some cases some of the concept paper components are moved to the product definition paper and *vice versa*. Hence difference among the respondents is expected and acceptable.

The ability of the financial model in a product definition paper to provide accurate picture on the overall return expected from the new product depends, to a large extent, on the reliability of the sources used to build the assumptions for the model. Hence the lack of proper research to validate these assumptions can reduce the confidence in the financial model. This explanation might, to some extent, provide an insight on the reason behind the middle management's lack of confidence in their own institutions' market research as a source of information.

In addition, one of the most important assumptions that need to be made in the financial model is pricing. The decision on pricing will not only impact the outcome of the financial model, but will also play a critical role in the success of the new product. Both Ahmed (2011) and Rosenau *et al.* (1996) assert the importance of pricing in the new product financial model, and the need to validate the assumptions



made against corporate standards. Choudhury (2015) explained in the interview conducted for the purpose of this research that both competitors' prices and achieving the required internal rate of return are the most important factors that the bank will consider while pricing a new product; where higher weightage is given to competitors' prices. Hence, to further explore the factors that might have the most impact on the pricing of a new product, the following sub-hypothesis is formulated:

H_{8-2} : The majority of Islamic financial institutions use competitors pricing as the main benchmark for pricing their new products

The descriptive analysis results depicted in Table 8.10 show that 51.1% of the Islamic financial institutions in the sample consider a combination of factors to price the new product. Therefore, the null hypothesis is rejected and the alternative is accepted.

However, it is worth noting that the results also indicate that competitors' pricing is the most used factor with 26.7% of the sample selecting it as the most important factor, compared to 13.3% and 8.9% for achieving both the internal rate of return and other business objectives respectively. The results are in line with the expectation of the researcher as pricing the new product is a complex process that usually requires the institution to take into account different factors. However, Islamic financial institutions operate in competitive markets and they have to take into account the prices of similar products being offered in the market.

9.3.5 Product Approval From National Bodies

Different jurisdictions have different regulatory and supervision structures for Islamic financial institutions. The supervision in some cases covers only the prudential functions while in other cases it covers also *Shari'ah* functions. Ben Yousef (2010:4) explains that different counties have adopted different models for supervising the *Shari'ah* function in Islamic financial institutions. Some countries use a central *Shari'ah* board structure at national level like Malaysia and Sudan, while other countries, as in the case of the GCC, have *Shari'ah* boards at the institution level only. Taking this into account, the following hypothesis is formulated:

Hypothesis 9: The majority of Islamic financial institutions are required to obtain approval for their new products from a national Shari'ah board



The results illustrated in Table 8.11 show that only 17.8% of the institutions in the sample are required to obtain their national *Shari'ah* board approval for new products. Therefore the null hypothesis is rejected and the alternative is accepted.

The differences in supervisory approaches and regulatory requirements might have direct impact on the product development process. Raza (2014) indicated during his interview for this research that the regulators usually shy away from factoring the right measures into supervision of Islamic financial institutions; while some regulators do not interfere at all in relation to the nature and types of products offered, other regulators over prescribe the conditions for new products to the degree that makes it extremely difficult to create or innovate new products.

The effect of strict regulation on the innovation in Islamic financial institutions is imparted by Al-Suwailem (2013) who states in his interview for this research:

Innovating new products is sometimes extremely difficult because usually central banks will not be happy with the additional risk created by new innovative products whose risks are yet to be completely understood. Islamic banks form an integral part of the economy and their failure or success will take its toll on the economy, hence, central banks tend to impose the same controls, if not more, on Islamic banks as they do on their conventional peers.

Hameed (2015) another interviewee for this research, also shared similar views where he indicated that the solution might be in the creation of an Islamic finance industry body that allocates a specific part of its budget to product development on a co-operative basis (for the benefit of the whole industry). The IIFM is a good example of this, although its remit is quite limited. Ben Yousef (2010:16) also highlights the need to have an international body for *Shari'ah* supervision. This new body will work on, among other things, setting up a framework for Islamic financial products, setting rating standards and even auditing Islamic financial products. Siddiqui (2015), in his interview for this research, also supports this notion and suggests having all products and services reviewed by "independent experts not reporting to the business team" to ensure that the product is *Shari'ah* compliant in terms of structure, process flows, implementation, impact on customer perception, *Shari'ah* rules, accounting, training and legal documentation.

While these solutions might bring added value to the industry, the first step should be to work on standardising the regulatory and supervisory approach towards the product



development and work on creating a framework that provides a balanced approach for proper oversight of the new product being developed, but without hindering the process of innovation. This is critical at this stage of the industry development to ensure that new products are being developed to meet *maqasid al-Shari'ah*, which in turn will provide proper protection to the customers and the Islamic financial system as discussed earlier in Chapter 4.

9.3.6 Post-Launch Reviews

The post launch review provides the institution with a powerful tool to monitor and subsequently improve the performance of the product. Kuczmarski (1988:194) argues that post launch review can provide significant leverage in the development of successful new products. In addition to the normal reviews usually conducted by financial institutions, Islamic financial products are subject to a post implementation *Shari'ah* audit, the importance of which is asserted by Ahmed (2011) and FPDC (2013) alike.

It is the researcher's view that conducting *Shari'ah* audit is imperative to ensure the continuous compliance of the Islamic financial products with the *Shari'ah* requirements. It provides a mechanism to identify week controls in back office operations and instigates the creation of solutions to improve the product and enhance its features. In order to provide further insight on the post launch reviews practiced by the Islamic financial institutions, the following hypothesis is formulated:

Hypothesis 10: The majority of Islamic financial institutions carry out Shari'ah audit after launching the new product

The descriptive analysis results illustrated in Table 8.12 show that 73.3% of the institutions in the sample do carry out *Shari'ah* audit on new products, hence the null hypothesis is accepted and the alternative is rejected. Similar findings are reported by Ahmed (2011: 145) whose research results showed that 60% of Islamic banks conduct *Shari'ah* audit on the new product. This is a further indicator that Islamic financial institutions are aware of the importance of *Shari'ah* audit and the benefits it brings to the product and the product development process. However, there may be some differences in opinions among the respondents regarding the types of post launch



reviews that should be carried out for new products. This can be further investigated by testing the following sub-hypothesis:

 H_{10-1} : There are no statistically significant differences among the Islamic financial institutions in relation to the types of post launch reviews conducted on newly-launched products according to the independent variables

The outcome of the inferential analysis depicted in Table 8.24 shows that both the size of the institution, with *p* value of 0.034, and the institution's nature of activities, with *p* value of 0.012, are lower than the critical *p* value at $\alpha = 0.05$, hence the alternative hypothesis is accepted.

In relation to the size of the institutions, the differences in opinions seem to be related to the review of profitability. The highest mean ranking value of 39.50 that is shared between institutions that have total liabilities of less than \$1m and institutions with total liabilities between \$51m - \$100m indicates that these institutions are less likely to carryout reviews of product profitability compared to other institutions in the sample.

Furthermore, in relation to the nature of activities, the differences in opinions seem to be related to the review of policies and procedures. Islamic retail banks have the highest mean ranking value of 36.00 indicating that this type of institutions is less likely to carryout reviews of policies and procedures compared to other types of institutions.

These findings denote that some Islamic financial institutions underestimate the added value that post launch reviews bring. While the majority of the institutions seem to focus on *Shari'ah* audit and product profitability reviews to fulfil the *Shari'ah* and business requirements, the remaining types of reviews are not given the same level of attention.

It should be noted that the success of an Islamic financial product relies on different factors. The most important ones are fulfilling the customer' financial needs and providing the customer with high service quality. While being *Shari'ah* compliant is important, it is also a *de facto* of the product and not the most important factor as usually perceived by Islamic financial institutions. Hence, equal attention should be



provided to all types of post launch reviews to ensure that the product succeeds in a competitive environment.

In this context, the timing of the post launch reviews is also important as it might differ from one institution to another. The analysis results depicted in Table 8.13 indicate that the institutions in the sample are divided in relation to the timing of the reviews carried out on the newly launched products. To further explore whether the respondents have any difference in opinions in relation to the timing of the post launch reviews, the following sub-hypothesis is formulated:

 H_{10-2} : There are no statistically significant differences among the Islamic financial institutions in relation to the timing of post launch reviews according to the age of the institution

The inferential results depicted in Table 8.25 do not support the null hypothesis and therefore alternative hypothesis is accepted, since the institutions' age returned a significant *p* value of 0.064 that is lower than the critical *p* value at $\alpha = 0.10$.

The highest mean ranking value of 27.29 pertaining to institutions that were established in the period 1975 – 1984 indicates that older institutions, being fully established, are more likely to conduct their review on annual basis or as and when required rather than on three or six months' basis. The findings indicate that older institutions have higher confidence in the features, processes and overall efficiency of their newly launched products as they are more likely to have perfected their product development process over time and have built quality human capital with extensive experience in product development, compared to younger institutions that are still trying to establish the optimal process for product development and therefore tend to perform their reviews at shorter intervals.

Upon completion of the post launch reviews the institutions utilise the information collected to evaluate customers' response, improve product profitability and enhance the product development process. However, different institutions may handle the information resulting from the reviews in different ways. Hence to provider further insight on the differences between Islamic financial institutions in this area, the following sub-hypothesis is formulated:



 H_{10-3} : There are no statistically significant differences among the Islamic financial institutions in relation to the utilisation of the information gathered during the post launch reviews according to the age of the institution

The results depicted in Table 8.26 indicate that at $\alpha = 0.10$, the null hypothesis is rejected and the alternative is accepted, since the tested *p* value = 0.086 related to sending the information to the operations department is lower than the critical *p* value. The highest mean ranking value of 27.86 is associated with institutions established in the period 1975 – 1984 indicating that older institutions are less likely to pass the information collected through the product review to operations department compared to other newer institutions in the sample. Different types of reviews on different products will result in different findings. These findings need to be sent to the appropriate departments to rectify the identified issues. The results may indicate that older institutions are less likely to find operational issues in their products as their back office would have been setup for quite a long time with experienced and knowledgeable staff running the show. Hence the reviews on the operational aspects of the newly launched products are less likely to identify any issues.

9.3.7 Difficulties in Product Development: Exploring Barriers

The Islamic financial industry is relatively new and still facing a number of difficulties and barriers that are hindering its growth. Besides the normal challenges that financial institution usually face, Islamic financial institutions encounter additional challenges related to the requirements to comply with *Shari'ah* rules. These additional constraints have a direct impact on the area of product development. Ahmed (2011:148) classifies these constraints into external and internal. External factors include market conditions, regulatory and legal environment, while internal factors are related to the product development process, strategy and resources.

Williams (2013), one of the interviewees for this research, argues that the additional constrictions on the Islamic financial product development process are due to the legal and regulatory framework that Islamic financial institutions have to operate in and the requirement to comply with the *Shari'ah* rules, which can be manifested mainly by the need to have input from *Shari'ah* scholars and the need to deal with the risks related to profit and loss sharing structures used as basis for Islamic financial



products. Hence, to further understand the key barriers facing the development of new Islamic financial products, the following hypothesis is formulated:

Hypothesis 11: The main barriers to developing new Islamic financial products are related to Shari'ah factors

The descriptive analysis results depicted in Table 8.15 reveal that the top two barriers of developing new products as perceived by the respondents are (i) the *Shari'ah* scholars' lack of knowledge about financial products, with a mean ranking value of 3.44, and (ii) credit risk specialists' lack of understanding of the risks associated with Islamic products with mean ranking value of 3.29. Hence the null hypothesis is accepted and the alternative is rejected.

The findings are substantiated by Laldin (2013), one of the interviewees, who indicated that different *Shari'ah* scholars would have different levels of understanding, which is reflected by their interpretations in relation to new products. He also stated that "some SSB members do not like change and they prefer sticking to the main principles they know".

Kilani (2013) shared a similar view during the interview held with him for this research stating that "we have to try to change the mentality of some scholars to make it closer to reality, as their efforts were only focused on the need to establish Islamic banking....now we have to stop and reassess our performance then we can start again with a solid foundation".

The findings are also in line with the researcher's expectation that is based on extensive experience in Islamic financial product development. The involvement of *Shari'ah* scholars in the process of product development is essential and brings a lot of value to the process, especially when the scholars involved are abreast with the functions and operations of the financial industry. However, the lack of this essential knowledge, in some cases, hinders to a great extent not only the process of the product development but also the function of innovation.

The second most severe barrier reported by the respondents is related to risk specialists' lack of understanding of the risks associated with Islamic financial principles. The risk function provides an essential input into product development,



which must be adhered to, in order to reduce the overall risks associated with launching new products.

However, the lack of understanding, knowledge and experience in handling the risks related to profit and loss-sharing structures makes the risk function involvement in the product development process, in most cases, a critical barrier, particularly to new innovative ideas. This view is shared by Dusuki (2012), one of the interviewees for this research, as he believes that understanding the risk profile associated with the contract is very necessary. Most products need to go through risk department staff who may not have proper knowledge regarding *Shari'ah* contracts requirements, hence the focus is on the credit profile only and the product is structured in a conventional way. This hinders the proper development of Islamic financial products.

There is a propensity in the Islamic financial industry to use Islamic financial contracts that create debt relationships between the institution and the customer. Many contributors have provided different explanations on the inclination of Islamic financial institutions to use mainly *murabahah* and *ijarah* structures in most of the products, one of which is the resemblance of the outcome of these structures with the outcome of conventional products (notwithstanding the difference in the underlying principle).

However, the researcher believes that the real reason behind such choices is that risk specialists working in Islamic financial institutions still do not know how to manage the risks related to profit and loss sharing structures and hence they shun from using them and, instead, focus on the structures with risks that can be managed using conventional finance risk management text books. This notion is asserted by Dusuki (2012) who stated, during the interview held with him for this study, that

The profit which is earned through Islamic financing contracts is justified only when we assume risk and shoulder certain liability. The higher the risk is, the bigger the reward. Because we only focus on the credit risk profiles of Islamic banking products, we do not develop products which can be more rewarding.

Notwithstanding the results depicted in Table 8.15, it is the researcher's view that the lack of understanding of the risks associated with Islamic financial principles is the most severe barrier for the product development in Islamic finance. Most of the



research in the risk area of Islamic finance is related to existing practices at the institutional level and not on the product level.

Hence there is a dire need to develop mitigation tools specifically designed for Islamic financial structures away from the usual conventional risk management tools that have been developed specially to deal with interest-based contracts. One possible approach for this is to use *maqasid al-Shari'ah* concept and methodology to create the new Islamic-based risk mitigation tools. As the lack of knowledge, research, and expertise in the area of risk management is a structural problem in the industry, it requires long term solutions and rethinking of the priorities related to the industry.

9.3.8 Exploring Perceived Risks in Product Development

There are different types of risks associated with the product development process in general and there are risks that are related specifically to Islamic financial products as explained in Chapter 2. Understanding these risks and creating proper mechanisms to manage them in the product development process will reduce the risk of product failure.

The perception of risks related to product development can differ from one person to another and from one institution to another. Subsequently to further explore the perception of the respondents regarding risks associated with the development of Islamic financial products, the following hypothesis is formulated:

Hypothesis 12: The main risks related to developing new Islamic financial products are Shari'ah non-compliance risk, market risk and credit risk

The descriptive analysis results depicted in Table 8.16 support the null hypotheses as the results show that 37.8% of the respondents perceive market-related risks to be the dominant risks, while *Shari'ah* non-compliance risk and credit risk came second with each being selected by 28.9% of the respondents. Therefore, the null hypothesis is accepted and the alternative is rejected. The following section discusses these risks and the way they can be mitigated.



The main market-related risks as identified by 37.8% of the respondents include meeting customers' demands, competitors' responses, pricing and failure in marketing and advertising.

Similar views are also reported by a number of the interviewees for this research including Al-Suwailem (2013), Choudhury (2015), Williams (2013) and Hameed (2015), who also pointed out that market-related risks include meeting customers' needs and expectations, high prices, regulatory and legal requirements, staff knowledge and service quality level. Different institutions will face different market risks as they operate in different markets. Similarly different products will face different market risks related to the institution and the product in question as this can play a critical role in the success of the new product.

As experiences also indicate, it can be argued that in order to deal with these risks, the institutions need to carry out certain tasks including conducting detailed market research to understand customers' needs, proper design for the new product to include added value features that can differentiate the product from other competitors' products in the market, regular monitoring of competitors' prices, coordinated marketing campaigns to educate the customers about the benefits of the new product and providing superb service quality to the customers taking into account that Islamic financial products are in fact services, and, therefore, the quality of the service will play an essential role in the product success.

Dusuki (2012), in his interview for this research, asserted the need to educate the customers stating that "the demand side of Islamic finance (*i.e.* the customers) also need to be educated regarding Islamic finance. If we have fully *Shari'ah* compliant products but do not have people to buy them, then *Shari'ah* compliant products are a failure". He also asserted the importance of differentiating Islamic financial products by stating that "we have to stop thinking just from the conventional perspective. When we develop or innovate a new product it should bring a change to the market. Hence, we should stop mimicking conventional banking products and should think on our own".



(ii) Shari'ah non-compliance risk

The *Shari'ah* non-compliance risk may include acceptance of the product, reputational issues and correct operational implementation.

Similar understandings of the *Shari'ah* non-compliance risk are mentioned by some of the interviewees for this research including Kilani (2013) and Al-Suwailem (2013). Other interviewees including Raza (2014), Hameed (2015) and Choudhury (2015) added that the lack of standardisation of *fatwas, Shari'ah* arbitrage, quality of legal documentation, proper asset allocation and selecting the most appropriate mode of Islamic finance to design the product are issues that might lead to *Shari'ah* non-compliance risk.

Managing *Shari'ah* non-compliance risk properly encompasses certain actions that require the involvement of different departments and should be implemented in three stages within the institutions. The first stage is the setup of the *Shari'ah* Governance Framework (SGF), while the second stage is to regularly update the product development process, and the third stage is to implement internal and external *Shari'ah* audit, the full details of these three stages have already been explained in Chapter 2.

(iii) Credit risk

The third main risk in Islamic product development as indicated by 28.9% of the respondents is the credit risk which also includes the risk of customers' default.

The tools for mitigating credit risk include having a comprehensive credit assessment process, obtaining a promise to purchase from customers to cover the risks related to customers' default in completing a transaction, asking for security (such as a mortgage or charge over assets, third party guarantee or lien on deposits), imposing late payment penalties that are donated to charitable purposes and implementing a proper collection process.

While managing the identified risks is important to reduce the probability of product failure, Islamic financial institutions will also need to implement all success factors that are relevant to their business to increase the probability of product success.



CHAPTER 10

PROPOSING AN EFFICIENT AND MAQASID BASED PRODUCT DEVELOPMENT PROCESS, CONCLUSION AND RECOMMENDATIONS

10.1 INTRODUCTION

This Chapter reflects on the main findings of the research and the discussion presented in Chapter 9 and presents a refined and detailed process, developed based on the findings of this research and the researcher's experience, for developing Islamic financial products with comprehensive description of each stage thereof. This is followed by the research recommendations for the relevant stakeholders to assist in the growth and development of the Islamic financial industry in the right direction.

10.2 THE MAIN FINDINGS OF THE RESEARCH AND IMPLICATIONS

This section intends to briefly recapitulate on the aims and objectives of this research, reflect on the literature review and summarise the main findings from analysing the data collected by the qualitative and quantitative research instruments.

10.2.1 Overview of the Research Methodology

This research aims at conducting a critical exploration of the current practices of product development and financial engineering in the Islamic financial institutions, and establishing the methodology and principles for engineering efficient and *Shari'ah*-based financial products that meet not only the form of *Shari'ah* contracts but also the substance of *maqasid al-Shari'ah*.

This research adopts a qualitative research methodology that defines the main research frame and process. It follows an inductive strategy with mixed design approach of both exploratory and descriptive tools to examine and explore the current practices in the market, collect the data through the use of both survey technique and semi-structured interviews, generate the appropriate hypotheses and test them against



the collected data to identify whether there are significant differences in the practices of Islamic financial institutions represented in the sample in relation to product development.

10.2.2 Reflecting on the Literature Review

The continuous growth of the Islamic financial industry over the last few decades has been supported by a substantial increase in the range of products offered by the Islamic financial institutions. As the size and depth of the industry increases, the need for more sophisticated products is also increasing. Hence, there is a need to establish a framework that sets out the guidelines and principles for engineering sophisticated Islamic financial products and design a flexible and efficient product development process that can facilitate the development of *Shari'ah*-based financial products.

A critical review of the processes of financial engineering and product development is presented and discussed taking into account the unique nature of Islamic financial products which requires adherence to the relevant *Shari'ah* requirements. The product life cycle from introduction to maturity and then decline is explored with focus on the way the product development process is used not only to create new products but also to extend the life of existing ones. The critical success factors for product development from different researches is reviewed and summarised in five main factors that include focus on strategy, detailed plans, proper resources, suitable organisational structure and consistency in implementing the product development process.

Different product development strategies are discussed, highlighting the need for each institution to choose the appropriate strategy according to its market conditions. Special focus on the reactive strategy is given in light of the general perception in the market towards the Islamic financial product for being a copy of conventional products.

In the same context the need for innovation is discussed, highlighting its definition, process, types and main drivers.

Furthermore, the research discusses different types of product development processes and how the process may change depending on the type of the product (whether a



physical product or a service), the institution, the industry and the market conditions. Then the unique features of the product development process in Islamic financial institutions are highlighted.

The different organisational structures related to product development are reviewed together with the risks related to the process, emphasising the changes needed to develop Islamic financial products and the ways to improve the process.

The financial engineering definition, history, drivers and process is discussed where the principles of Islamic financial engineering are also highlighted. The relation between financial engineering and financial stability is investigated to understand the role that financial engineering played in the financial crisis of 2008. The function of financial engineering is discussed with focus on the important role it can play in improving the efficiency of the financial system by serving the needs of the related parties. The importance of having a clear framework to govern the process of financial engineering to ensure that financial engineering is not used to introduce new financial instruments that lead to the concentration of risks and induce instability in the financial system is also highlighted.

The researcher has argued that the reoccurrence of financial crises over and over again is due to the interest-based financial system that is governed by inefficient and ineffective regulations in the sense of ethicality. Thus a new type and scope of legislation is required to break this cycle of financial crises and provide better protection to all stakeholders in the financial market including individuals, families, the society as a whole and the state. The basis of this new approach can be found within Islam and its teachings, where the principles of *maqasid al-Shari'ah* can be used to draft and implement this new type of legislation.

The use of *maqasid al-Shari'ah* as a base framework for establishing new rules and regulations for financial institution is discussed in the context of enhancing the efficiency and the stability of the financial system, as it encompasses the objectives of *Shari'ah* in safeguarding the well-being of the society as well as individuals. The role that *maqasid al-Shari'ah* can play in solving the major problems in the conventional financial system and in paving the way for the growth and the development of the Islamic financial industry is also highlighted.



The review also points out the benefits that the new *maqasid*-based framework will bring to the processes of financial engineering and product development within the Islamic financial industry by adding new controls to the process and driving it towards ensuring that new Islamic products will in fact fulfil *maqasid al-Shari'ah* as well as the real needs of the customers and the objectives of the financial institutions.

The researcher has argued that until now Islamic financial institutions are not creating the expected impact on the socioeconomics of the societies they are operating in. This is due to the fact that most of their products and services are being developed to be *Shari'ah*-compliant rather than *Shari'ah*-based. The effective implementation of Islamic finance operations requires much more than just refraining from charging interest and conforming to the *Shari'ah* contractual requirements. The objectives of the Islamic financial institutions and the products they offer should contribute to the fulfilment of the socioeconomic goals and the creation of a just society.

10.2.3 Reflecting on the Main Findings of the Research

The data analysis for this research is spread over three empirical chapters (Chapters 6, 7 and 8) and followed by Chapter 9 that provides a discussion on the results. The analysis and discussion pertaining to the findings of the research follow closely the questionnaire's three parts' layout. The collected data is analysed using descriptive and inferential analysis. The descriptive analysis is used to build an understanding of the current product development process implemented by the institutions in the sample with the objective of establishing patterns that govern the practice, while inferential analysis is used to identify whether there are any significant differences in opinion among the respondents in relation to the independent variables.

Chapter 6, being the first empirical analysis chapter, focuses on providing descriptive analysis for the first part of the questionnaire composed of 11 questions that were designed to explore the characteristics of the respondents and their institutions. Descriptive statistical tests are utilised to analyse the data using mainly frequency distribution, mean value and standard deviation.

The findings of Chapter 6 indicate that the sample provides a wide spread coverage across a range of different variables including the institution's location, size, age,



nature of activities and the respondent's position that can be used as independent variables to perform inferential statistical analysis on the relevant data.

Chapter 7 discusses the second part of the questionnaire that focuses on the strategy, plans and organisational structure of the institutions in relation to product development process, using 12 questions. The findings of the descriptive analysis in Chapter 7 indicate that the majority of the institutions in the sample appear to have a strategy for developing new products. However, just over half of the respondents indicated that their institutions have a formal approach or process and plans (whether short, medium or long term) for developing new products. Nevertheless, when it comes to allocating resources, there seems to be lower support for product development in terms of actual allocation of budget, staff and technology.

The results also show that the CEOs and the head of the relevant business departments are more likely to be the main driver behind developing new products and the majority of the institutions have a committee to oversee the product development process.

The findings also depict that the vast majority of the institutions in the sample require their *Shari'ah* advisor to be involved in the product development process. However, the type and level of such involvement vary among the institutions.

The inferential analysis using the KW test is carried out using the selected independent variables namely the institutions' location, size (according to both balance sheet items and the number of employees), age, nature of activities and the respondents' positions.

The nature of activities of the institutions in the sample is the independent variable that displayed the most statistically significant differences among respondents' perceptions on different areas in the second part of the questionnaire. In particular, *takaful* operators showed the most significant differences among the different types of institutions participating in the sample.

This is understandable as due to the nature of business and the types of products pertaining to different types of institutions represented in the sample, in particular



takaful companies, investment banks and funds, will usually have a different product development process compared to commercial banks and Islamic banking windows.

Analysis of the results related to the size of the institution (whether by the number of employees or the balance sheet items) has also revealed some general trends that can be attributed to the fact that larger institutions are more well-established. In relation to the institution's location, the results have illustrated that institutions located in the US often displayed the most significant differences, which can be mainly due to different market conditions in the US, as despite being one of the most developed economies in the world it still lacks the legal and regulatory framework needed to support the offering of Islamic financial products.

The age of the institution and the respondent's position are also used as independent variables; however, the results did not often provide much statistical significance for these two variables.

In Chapter 8, the statistical analysis continues on the third part of the questionnaire with 19 questions that focus on investigating the product development documentation, process, design and steps used by the institutions in the sample to develop, launch and review their new products. The analysis also covers the main challenges, barriers and risks faced by the institutions in the sample, in relation to new product development.

The findings of the descriptive analysis of Chapter 8 indicate that the majority of the institutions in the sample have a formal and documented process for product development. However, less than fifth of the sample review and update their product development process regularly. More importantly, the majority of the institutions in the sample indicated that they do not follow the product development process very strictly.

The analysis also shows that the top three sources of ideas for new product development are products of other Islamic banks, followed by customers and finally, the products of conventional banks. This result, however, is different from the general perception in the market that the top source of ideas for Islamic financial products is the products of the conventional financial institutions.



In relation to the detailed steps of the product development process, the institutions in the sample have significant differences in the way they conduct product development, which are also captured in the inferential analysis. However, the majority of the differences are *Shari'ah*-related where most of the institutions in the sample seem to be using a firmer approach to ensure *Shari'ah* compliance of the new products under development compared to a minority of the institutions in the sample that focus on other aspects of the product.

The most important factor in selecting the best new product idea seems to be market consideration, such as customers' needs and competition from other financial institutions. Nevertheless, more than half of the institutions, representing 55.6% of the sample, use a combination of factors to decide on the most appropriate *Shari'ah* structure for the new product.

The descriptive analysis investigates also the launch stage including the approvals required form national bodies, where the majority of the institutions, with 93.3% of the sample, reporting that they have to receive regulators' approval before launching their new products. On the other hand, only 17.8% of the sample is required to obtain product approval from a national *Shari'ah* board.

The analysis has also covered the types of after launch reviews conducted for new products and how the information collected from these reviews is utilised. The results indicate that the most preformed reviews are compliance with *Shari'ah* and product's profitability as both were ranked first according to their mean ranking value of 1.27. In addition, the most common practice in relation to the use of the information collected from the review is to pass it to ALCO, which had a mean value of 1.29.

The analysis covers also the main barriers and risks associated with product development and how they are managed or mitigated by the institutions in the sample. In relation to the barriers, the *Shari'ah* scholars' lack of knowledge about financial products, with a mean value of 3.44, and the credit risk specialists' lack of understanding of risks associated with Islamic products, with a mean value of 3.29, are ranked, respectively, as the first and second most sever barriers to product development in Islamic financial institutions.


On the other hand, in relation to the main risks associated with product development, market risks came first with 37.8% of the sample choosing it as the main risk, while both *Shari'ah* non-compliance risk and credit risk came second with each being pointed out by 28.9% of the sample.

The inferential analysis against the independent variables returned a considerable number of differences in opinions among the respondents. The majority are due to the age of the institutions, with older institutions that have been setup during the periods 1975 - 1985 and 1985 – 1994 reporting most of the differences. This is expected as older institutions, being fully established, are more likely to have perfected their product development process over time and have built quality human capital with extensive experience in product development, compared to younger institutions.

The differences according to the location of the institutions also revealed some statistically significant differences that are related, in most cases, to institutions located in the US and Africa which could be attributed to the fact that the US is a developed market where institutions located there are more likely to have sophisticated processes and procedures in place due to regulatory requirements, compared to the other end of the spectrum in Africa that is considered to be a developing market with much lighter regulation and lower emphasis on having documented processes and procedures.

Other statistically significant differences are also identified in relation to the size of the institutions (by number of employees and by balance sheet items) and in relation to the institutions' nature of activities. However, only a few differences are identified in relation to the respondents' position.

10.2.4 Reflecting on the Main Findings of the Discussion

Chapter 9 contextualises and interprets the findings of the descriptive and inferential analysis reported in the empirical chapters (Chapters 6, 7 and 8) and uses the findings of the semi-structured interviews to test the hypotheses and develop deeper understanding of the current practises related to product development in Islamic financial institutions. The main findings of this chapter are summarised below:



As regards to *strategies*, the results indicate that the majority of the Islamic financial institutions are in the phase of expanding their product offering by adopting a strategy to develop new products. This finding is also confirmed by Ahmed's (2011) research. However, the views from the interviewees for this research indicated that Islamic financial institutions need to focus on improving existing products before developing new ones. Both views are valid and can be achieved by using a mixed product strategy that focuses on achieving continuous and incremental improvement on existing products and designing and launching the new products needed to fill the gap in the market.

As for *plans*, the discussion identified a conflicting picture between the vision and strategy levels on one hand, and the implementation level in the form of processes, plans and budget allocation on the other hand. Similar result was also reported by Ahmed (2011). This indicates that Islamic financial institutions tend to have high level commitment to product development on strategic level but fail to translate this into plans, which might explain the relatively low number of successful new products in the industry.

With regards to *resources*, the resources that are usually needed for product development include financial budget, staff with the right knowledge and skills as well as systems. The findings indicate that the majority of the Islamic financial institutions do allocate some kind of resources either specifically or subject to requirements. Nevertheless, the perceptions of some of the interviewees indicate that the industry needs a considerable number of new products that are *Shari'ah*-based to create the needed differentiation factor.

This change will need significant resources; hence the level of resources allocated currently does not seem to be enough to bring the required impact to the industry.

As far as the results for *organisational structure* is concerned, it is evident that there are different types of organizational structure used by different institutions for the purpose of product development. The findings indicate that the majority of the institutions in the sample do not have a special department for product development. This however is in contrast to the results reported by Ahmed (2011) whose research



results show that the majority of the institutions have a separate unit for research/ products/business development.

The variance between the result of this research and Ahmed's (2011) research is also reflected in the literature of product development. However, this is acceptable as different institutions will have different needs and the choice of the structure should reflect the institution's requirements.

The findings for *Shari'ah involvement* indicate that the vast majority of Islamic financial institutions require their *Shari'ah* advisor and SSB to be involved in the product development process.

While the *Shari'ah* input is not required in all stages of the product development process, the majority of the institutions require their *Shari'ah* advisor and SSB input in the most important stages including the concept stage, reviewing legal documentation and *Shari'ah* audit. This indicates a high level of awareness about risks associated with not having the *Shari'ah* input during the process, which might lead to substantial losses and delays in the process.

As for *documentation*, the results show that 60% of the institutions in the sample have a formal documented process for product development, while the remaining 40% did not have such document, which makes their process more of *ad hoc* approach and reduces the chances to improve the process. However, those with formal process do not regularly update it, nor they follow it strictly. This seems to be one of the main problems in the industry.

The results for the *key sources for new ideas* indicate that the main source of ideas for new products is the products of other Islamic financial institutions, whereas customers' demand ranked second and the products of conventional institutions ranked third. This result is also confirmed by Ahmed (2011), whose research reported somehow similar findings. This however is in contrast to the general belief that most of the Islamic financial products are copies of conventional products. The discrepancy between the research result and the general perception in the market can be due to the fact that whether the source of the new product idea is from conventional or Islamic institutions, the customers do not see any differences between the Islamic and the conventional products. Hence, the real issue here is that while the majority of Islamic



financial institutions do have a strategy to develop new products, the approach adopted in most cases is reactive or imitative approach that creates less successful products. Therefore, the solution is to create new products that can be differentiated by bringing superior value to the customers.

The results of *implementation of the process* indicate that Islamic financial institutions represented in the sample do not always preform all the steps of the process. However, the *Shari'ah*-related stages including the approval of the concept paper by the SSB, obtaining the SSB approval for product documents and *Shari'ah* audit are performed more strictly than other stages of the process.

While this result shows, on the one hand the importance given to *Shari'ah* approval in the new product development process; on the other hand, it shows a lack of discipline in following the process. Keeping in mind that innovation requires discipline; the findings might provide an explanation to the lack of innovation in the industry.

The analysis results for the *main barriers* show that the top two barriers to developing new products as perceived by the respondents are the *Shari'ah* scholars' lack of knowledge about financial products, and credit risk specialists' lack of understanding of the risks associated with Islamic products. While the scholar problem is more of individual and temporary issue related to few scholars that will be phased out by time as younger and more educated scholars join the industry, the lack of knowledge, research and expertise in the area of risk management in Islamic financial products is a structural problem in the industry and requires long term solutions and rethinking of the priorities related to the industry.

The descriptive analysis results for the *main risks* show that the top three risks as identified by the respondents are respectively market risk, *Shari'ah* non-compliance risk and credit risk. Overcoming these risks can play a critical role in the success of the new product. However, while managing the identified risks is important to reduce the probability of product failure, Islamic financial institutions need also to implement all success factors that are relevant to their business in order to increase their products' probability of success.

10.3 PROPOSING A REFINED PRODUCT DEVELOPMENT PROCESS



Based on the findings of this research and the extensive experience of the researcher in the area of Islamic financial product development, a refined model for developing Islamic financial products can be proposed in this study. The proposed model is based on five main stages with each stage having a number of steps as follows:

- (i) Stage one is the concept development, which includes idea generation, idea screening, preparing the concept paper and obtaining product initial approvals (from management and *Shari'ah*);
- (ii) Stage two is the product definition and analysis, which includes preparing the product definition paper, obtaining approval from the Asset and Liability Committee (ALCO) and regulatory authorities (when required);
- (iii) Stage three is the product implementation, which includes creating the implementation plan, developing legal agreements, IT system development and testing, sales and marketing plan, product procedure manual and final product approvals;
- (iv) Stage four is product launch which includes staff training, final customer testing and product launch;
- (v) Stage five is post-launch monitoring and review, which includes ongoing monitoring, *Shari'ah* audit and regular reviews.

Each of the stages and steps of the proposed model are discussed in details in the following section. The full process flow is illustrated in Figure 10.1.





Figure 10.1: Proposed Product Development Process

10.3.1 Detailed Step by Step Process for Islamic Financial Products

10.3.1.1 Stage 1: concept development

Creativity in developing the concept for the new product will be one of the success factors for the new product. The process of creating new product concept will go through different stages including idea generation, idea screening, concept paper and *Shari'ah* approval (Ahmed, 2011:108).

The first step for developing the new product concept is idea generation which can be done using different methods. Annacchino (2003:88) lists a set of methods that can be used to generate new ideas including brainstorming, focus group discussions, direct customer survey, customers' feedback and complaints, and competitors' products. Hence, in this process, ideas can be sourced internally through staff working in all different departments, or externally through proper market research to identify customer needs and products gaps in the market. The outcome of this stage should be a number of new ideas as pointed out by Urban *et al.* (1987:73) "the goal of idea generation is coming up with a large number of very different ideas".



The newly generated ideas needs to be screened in order to select the most appropriate one that meets the institutional requirements, where the institution should have a defined set of criteria that can be used to determine and prioritise the right idea. Kuczmarski (1988:36) argues that "screening criteria helps managers prioritize new product opportunities and thereby allocate resources more cost effectively". The criteria should include qualitative and quantitative measures and will include financial potential, product differential features in addition to meeting *Shari'ah* requirements through additional screening requirement. *Shari'ah* screening is critical at this stage as skipping this step or not using the right set of knowledge and expertise in choosing the correct Islamic principle will more likely lead to product failure. Therefore, Ahmed (2011:110) argues that selecting the right Islamic contract "requires examining the pros/cons and risks/returns implications of using different contractual formats". In reflecting on the *Shari'ah* compliance, the FPDC (2013:19) states that the new product idea has to be evaluated based on various criteria including requirements from business, *Shari'ah*, customers and investors.

The new Islamic financial product idea, therefore, has to meet the business requirements in terms of profitability and fit with the overall strategy, customers' needs and requirements, legal and regulatory requirements and most importantly it should comply not only with the contractual *Shari'ah* requirements, but should also fulfil the overall objectives of *Shari'ah*. Creating the right structure that meets the above requirements is the real added value that a successful product development process brings to an institution.

After selecting the most appropriate idea, the concept paper needs to be prepared to provide clear description of the product with enough information to allow the management and the SSB of the institution to understand and approve the new concept. Ahmed (2011:110) asserts that "the objective of the concept paper is to enable the initial screening of the product concept by senior management and the *Shari'ah* board". In explaining further, Rosenau *et al.* (1996:144) argue that the product concept must provide "description and specification of the new product attributes, features, and performance. This description should reflect clear connection to the customer, market and competitive needs". Ahmed (2011:110), on the other hand, points out that the concept paper should "outline the basic structure of the



product, detailing the major elements, structure and processes", while the FPDC (2013:17) states that concept paper should outline briefly the gap (to be filled by the idea), description of the idea, justification of the proposal and expected outcome.

The emphasis of the concept paper, thus, should be on providing relatively high level information, with more focus on the following elements:

- (i) Market driver, customer demand and competitor information;
- (ii) Product nature, benefits and features;
- (iii) Product compliance with Shari'ah;
- (iv) Product objectives and strategic fit.

Once the concept paper is drafted by the product development team, it will be sent for obtaining the initial approvals from the management and the SSB. The initial approval from the SSB is critical at this stage, as delaying the *Shari'ah* approval until the legal agreements are developed (which is done in the product implementation stage) might lead to significant loss in terms of costs and time. Ahmed (2011:111) points out that "the goal of getting the concept cleared by the *Shari'ah* board is to minimise the risks of *Shari'ah* incompatibility before developing the product".

10.3.1.2 Stage 2: product definition and analysis

In this stage, the product design, structure and features are expected to start to take shape through a detailed product definition paper. Urban *et al.* (1987:25) argue that product design "is converting the ideas into a physical and psychological entity through engineering, advertising, and marketing". The product definition paper, which is sometimes referred to as business case or product scheme, will cover in detail, all aspects of the new product and will require input from different departments. Kuczmarski (1988:192) states that the business analysis should include among others, market trends and growth potential, competition, distribution channels, product performance, success and risk factors, product unit costs, consumers feedback and fit with company strengths and financial projections. According to Ahmed (2011:111), the business case will usually include detailed discussion of the product structure and features, the objectives of the product, how it will contribute to achieving the overall



strategy, market and competition, required resources and expected return and profitability. The FPDC (2013:20) points out that the business case should include product rationale and goals, detailed description of the product design including *Shari'ah* structural model, product benefits, financial assumptions and projections and risks involved.

In addition to the mentioned elements, there are additional factors and risks that are specifically applicable to new Islamic financial products. Tahir (2008:50) asserts that during the design stage of Islamic financial products, the product manager should consider a number of relevant issues including compliance with *Shari'ah* requirements, accounting for the cost of the SSB, the potential differences in opinion among *Shari'ah* scholars and its impact on the customers (specifically when it is a new to market product) and local laws and regulations.

While the research in the product development domain, including Islamic financial products, has provided details on what a product definition paper, or a business case, should include, there is a lack of focus on the risks area related to the new products. Particularly in relation to Islamic financial products, the researcher believes that the product definition paper should provide detailed analysis on the risks that will affect the customers utilising the product. This is one of the differentiators that Islamic finance should have, compared to conventional finance, which will also ensure that the new product will be developed to meet the objectives of *Shari'ah*.

Thus the product definition paper should be extensive and should cover, in details, the following areas:

- (i) Product definition and description;
- (ii) Target market and customers;
- (iii) Financial evaluation;
- (iv) Risk analysis (including risk mitigation tools);
- (v) Customer risks analysis;
- (vi) Operational impact analysis;



(vii) Legal and regulatory requirements analysis;

- (viii) Required system changes;
- (ix) Product design and process flow;

(x) Product review triggers (to be monitored post-implementation).

As regards to financial evaluation section, it should include funding options, development costs, profitability, break-even point, pricing proposal and the rationale behind the financial assumptions used. Hence preparing detailed financial information on the product has specific importance as the product has to meet certain financial criteria including return on capital and payback period. Rosenau *et al.* (1996:146) states that "these financials must be estimated and validated against corporate standards and funds' availability". These financial criteria are usually set by the institution's Asset and Liability Committee 'ALCO'.

The management should ensure that the new product fulfils the financial criteria and meets the strategy objectives before approving it. Ahmed (2011: 113) argues that "the management would examine, among others, the compatibility of the product with the corporate strategic goals and business plan". Therefore, on completion of the product definition paper, it will usually be sent to ALCO for review and approval. Any feedback received from ALCO should be then incorporated in the new product documents.

In many jurisdictions, regulatory authorities command financial institutions to send new products' documentation to be approved by the regulator before its launch. While different regulators have different requirements, the product definition paper is usually the document that will provide a complete picture of the product allowing the regulators to have a full understanding of how the product will operate, the fees and charges as well as the risks associated with the product and how the institution will manage these risks.

10.3.1.3 Stage 3: product implementation

In this proposed new model, the product implementation stage is the most time and resource consuming stage, as it contains different activities including creating the



implementation plan, developing legal agreements, IT system development and testing, preparing sales and marketing plan, product procedure manual and obtaining final approvals. Some of these activities can be run concurrently to save time and ensure that the product is delivered on the agreed target date.

The first step in this stage is to prepare the implementation plan which is essentially a project plan for the implementation stage. Rosenau *et al.* (1996:146) state that "plans must be established for all forms of resources required for the project". Thus creating the plan requires input from different departments in the institution to identify and allocate the required resources. Ahmed (2011:106) asserts that the project leader needs to "work closely with the core team in developing the product and communicate and coordinate with other functional units when necessary". Therefore it is critical to get all relevant departments involved at this stage to create a proper cross-functional project team. In preparing the implementation plan, the product manager should provide details of each task and the department/individual responsible for completing the task. Some tasks will have dependencies on other tasks therefore it is critical to allocate a timeframe for each task to be completed within. Time allocation should be realistic to ensure successful implementation. Rosenau *et al.* (1996:83) state that new product development process "should encourage the use of realistic estimates of time to market".

The legal agreements for an Islamic financial product might include product terms and conditions, application forms and suppliers' (of goods and services) contracts. The preparation of these documents requires careful consideration and input from, and coordination between, the product manager, *Shari'ah* compliance team, regulatory compliance function and the legal department of the institution. It is important to develop these documents in accordance with initial structure approved by the SSB at the concept stage.

The IT system development for the new product in the institution can be long and may consume time and financial resources. According to Ahmed (2011:117) the development and implementation of the IT system is a major component of product development process. The system should be built based on the business requirement specifications collected from the product development team, operations, *Shari'ah*



compliance team and users working on the back office systems and front desk interface.

On completion of the system development, the IT department needs to conduct user acceptance testing to ensure the quality of the software and its compatibility with the process flow designed for the new product and other processes in the institution. According to Ahmed (2011:118), the testing is conducted by inviting representatives from different departments (usually from operations, finance and sales) who will be asked to prepare test scenarios relevant to their departments' processes and workflows. Only when all tests and required modifications are completed, the system will be approved for use.

The sales and marketing plan will include preparing the advertising campaign, the design and content of the sales brochures and posters for the new product. It should also consider the sales channels that shall be used for selling the new product and the sales targets that need to be achieved by each channel. Ahmed (2011:119) argues that the marketing campaign and product advertisement is important to ensure success of the product. He also states that the channels for product distribution have to be identified and targets should be set. After the product's promotional material is developed by the institution's marketing team, it should be reviewed and approved by the *Shari'ah* compliance team to ensure that the content of these documents adheres to the general *Shari'ah* requirements and the product's specific guidelines.

Developing detailed product procedure manual is important to ensure that all relevant staff (in front and back offices) can implement the product processes correctly and in line with *Shari'ah* requirements. The document should be comprehensive and cover all stages of the product process flow. Ahmed (2011:117) points out that the manual should cover in detail the process flow, all operational aspects of the product and provide a system user guide. Keeping in mind that financial products and services are intangible in nature, the product development team should, while preparing the procedure document, take into account the customer perspective to ensure a seamless customer experience.

After completing the full set of documents related to the product, including legal agreements, application form, marketing material and the procedure manual, the



documents need to be sent for final approval from the institution's executive committee and the SSB. The role of the SSB at this stage is to ensure that the product's legal agreements and related processes and procedures are fully compliant with all *Shari'ah* requirements. Ahmed (2011:117) points out that "in particular, the contracts and processes through which a transaction would take place should be clearly pointed out for the board's consideration. The SSB would also review and approve the forms used in delivering the product". Following the final approvals, the product is ready for the launch stage.

10.3.1.4 Stage 4: product launch

In this stage the final preparations for the product launch is conducted including staff training and final customer testing (which is also referred to as pilot testing). Providing proper training and motivation sessions to staff (including front and back office staff) enhance the probability of success of the new product. The product must be sold to the staff as it will be sold to the actual customers. Kuczmarski (1988:194) argues that "sales force must be brought up to speed and properly motivated to garner their commitment behind the product". He also adds that "the sales force must be 'sold' just as the consumer must be persuaded to buy". Ahmed (2011:128) points out that financial institutions provide services through multiple channels and therefore it is "very important to train the personnel to have uniformity in providing the service". Therefore, staff need to be provided with comprehensive training programme that should cover the product objectives and features, process flow, procedure document, *Shari'ah* sales requirements (general and product specific), system training by carrying out demo transactions in live environment.

The final customer testing is important to ensure superior customer experience which is an essential part of providing financial services. Urban *et al.* (1987:39) points out that "new product development requires a major commitment of resources and that most funds are at risk in the final testing and introduction phases". Therefore testing should be conducted before the launch of the product using a selected number of customers to test not only the systems but also the entire customer experience from the minute the customer walks into the branch until he leaves after completing the purchase of the product. Rosenau *et al.* (1996:522) state that "final testing of a product is referred to as the clinical trial, where the product is used by volunteers and



the effects carefully monitored". Hence the final customer testing will help the institution in identifying any issues that need to be rectified before the product launch. If final testing is successful, the product is launched.

10.3.1.5 Stage 5: post-launch monitoring and review

This stage focuses on the importance of monitoring the performance of the product on ongoing basis to identify any potential problems and implement any remedies needed. Kuczmarski (1988:194) finds that "this step, often overlooked by companies, can provide significant leverage in the development of successful new products". The product team should monitor the product's performance using the product review triggers (such as sales, profitability and other financial reporting set out in the product definition paper as a benchmark) to evaluate customers response and product profitability. This should be done using the regular reporting measures on product performance.

In addition to the usual reviews conducted on new financial products and services, Islamic financial products will be subject to a post implementation *Shari'ah* audit. This additional task is important to ensure that the product is being implemented correctly and according to the relevant *Shari'ah* requirements. FPDC (2013:22) points out that regular *Shari'ah* audits "will ensure monitoring the *Shari'ah* compliance of the approved processes and procedures and the fulfilment of all contractual stipulations by the product team". This view is also supported by Ahmed (2011:121) who asserts that "one of the roles of the *Shari'ah* audit is to ensure that the processes are followed according to the approved scheme".

The process proposed, so far, is based on a typical staged process type with multiple stages and several steps in each stage, where additional steps designed specifically to ensure *Shari'ah* compliance of the product have been added to the process. However, the objective from proposing this process is to ensure that the newly developed products will be *Shari'ah*-based and not merely *Shari'ah*-compliant. To achieve this objective, the process needs further improvement by way of adding additional steps to ensure the new product will contribute positively to achieving *maqasid al-Shari'ah* and at the same time to maximise the risk return formula impeded in the Islamic financial structures used to develop the new products.



These additional steps are important to ensure that the proposed process provides the right balance between meeting the objectives of the *Shari'ah* and the Islamic financial institutions' business objectives. The following two sections explain the required additional steps.

10.3.2 Achieving *Maqasid Al-Shari'ah* Through the Product Development Process

The implementation of *maqasid al-Shari'ah* within Islamic financial institutions requires these institutions to introduce changes at two levels, the first is on the framework level, which requires making changes to the vision, mission and strategy as discussed earlier in Chapter 4; while the other is on the delivery level, which includes the product development process and customer service.

The utilisation of *maqasid al-Shari'ah* in the processes of product development and financial engineering within the Islamic financial institutions can help in filling the gap between the theory behind Islamic finance and the actual practice of the industry. Hence, one of the objectives of this research is to propose a methodology to integrate *maqasid al-Shari'ah* into the product development process by incorporating additional technical steps to the proposed product development process. These additional steps, which have been designed by adopting the same methodology used in classifying *maqasid* under essentials, complementary and desirable, would help in controlling the outcome of product development process and drive it towards ensuring that the new Islamic products will in fact fulfil *maqasid al-Shari'ah* as well as the goals of the financial institutions. The following points summarise the new steps:

- (i) Idea generation: When a new product idea is developed, the institution should ensure that the objective(s) of this product is in line with all the essential *maqasid* and does not contradict any of the *Shari'ah* objectives of creating justice, equality and achieving the well-being of the entire community;
- (ii) Idea screening: Financial institutions usually create multiple concepts that can be used as the basic principles on which the product can be developed. The selection process for the best concept should include assessment of the benefits that this product will bring first to the customer and then to the society and should not be



concerned only with the benefits that this product will be bringing to the institution itself;

- (iii) Concept paper: The concept paper usually provides description of the product nature and features. As discussed earlier, the product features can impact the way the product is utilised, whether to achieve the desirables only or can be used for helping the customers obtain both the essentials and the desirables;
- (iv) Developing legal agreements: Preparing the legal agreements is one of the most important steps in the implementation stage which will have an impact on the product in relation to *maqasid al-Shari'ah*. The contractual arrangements should be fair and un-bias towards the financial institution and should avoid the usual practice of leaving the customers exposed to all sorts of legal risks. This additional check should be part of the *Shari'ah* advisor's job who should report any potential issues to the SSB. This additional process will ensure that the financial institution will not focus on protecting its interests only as this will negate the objective of the product and disturb the order between essential and complementary *maqasid*;
- (v) Shari'ah audit: After launch reviews usually include Shari'ah audit where the outcome of the Shari'ah audit will be used to check the correct implementation of the product, the way it is used by the customers and whether it is accomplishing the desired results of positive contribution towards achieving maqasid al-Shari'ah. At this stage, the use of principle of harm prevention should be applied using an additional task within the Shari'ah audit process of the product to filter out any unsuitable or non-compliant usage of the product.

Such incorporation of *maqasid al-Shari'ah* into the processes of product development and financial engineering will help ensure that the new product developed by Islamic financial institutions will fulfil *maqasid al-Shari'ah* in the same order as discussed above and will also take into account the principle of harm prevention to ensure that the application of new products will not harm the individual or the society.



10.3.3 Integrating Financial Engineering in the Product Development Process

The majority of the research and text books in the field refer to the financial engineering process in relation to structuring new instruments for the purpose of risk management. Hence taking into account the nature of Islamic financial principles that promote risk sharing methods, Islamic financial institutions can benefit from using the financial engineering process to improve their product development process.

Based on the above, the researcher's proposed product development process can be further improved by incorporating additional steps taken from the financial engineering process. These steps can be summarised as follows:

- (i) identifying the needs of the parties of the transaction;
- (ii) identifying the underlying asset for the transaction;
- (iii) full analysis of transaction's cash flow;
- (iv) choosing the most appropriate mode of Islamic finance to design the solution;
- (v) full understanding of the risk-return characteristics of the transaction;
- (vi) investigating the possibility of adding credit enhancement tools.

These additional six steps for Islamic financial engineering can be integrated within the first two stages of the proposed product development process, where the first four steps can be integrated in the *Stage 1 - Concept Development*, while the last two steps can be integrated within *Stage 2 - Product Definition and Analysis*, as illustrated in Figure 10.2

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Figure 10.2: Integrating Financial Engineering in the Product Development Process



10.4 REFLECTING ON THE PROPOSED PRODUCT DEVELOPMENT PROCESS

The design of the process proposed by the researcher is based on the broad literature review in the area of product development and financial engineering, the findings of this research and the researcher's extensive experience in the area of Islamic financial product development. The proposed process brings a real added value to this research as it attempts to provide practical solutions to most of the technical problems highlighted in the research, and at the same time proposes a methodology on how to achieve *maqasid al-Shari'ah* through the use of the product development process in the Islamic financial institutions.



The proposed process design is based on staged process type with multiple stages and several steps in each stage. The process can be used within both formal and informal product development structures; however, it works best in a mixed structure where there is a product development department supported by cross functional team with supervision and support by a product committee.

The flexibility in the stages design allows the process to be used in support of both innovative and reactive approaches for product development. The process focuses on optimising the process of innovation, as this is critical at this stage of the Islamic financial industry development. Hence the optimal use of the process would be to create *Shari'ah*-based new to the world or new to the market product types; however, shorter versions of the process can be created to develop other product types.

The process focuses on creating the right balance between the main three elements affecting the product development process in Islamic financial institutions namely, customers' needs, *Shari'ah* requirements and business objectives. The emphasis in the early stages of the process on conducting detailed and scientific market research to identify customers' needs and the environmental factors related to the proposed product idea and test it against both *maqasid al-Shari'ah* and business objectives will, on one hand, help in designing the features of the product to meet the customers' requirements, and on the other hand, mitigate most of the market related risks.

The process design maximises the benefits of the *Shari'ah* input and supervision by creating additional steps in the process designed especially to obtain *Shari'ah* input and approval at the critical stages of the process and provides on going supervision and monitoring on the newly launched product by conducting regular *Shari'ah* audit as part of the after launch reviews. Hence the risks related to *Shari'ah* non-compliance are minimised. The integration of the Islamic financial engineering process within the proposed product development process enhances its overall efficiency while the additional steps related to financial engineering will be particularly beneficial tools to ensure that the new product achieves the required business goals.

The proposed process is detailed, flexible and documented; however, like any other product development process, it requires regular updates to ensure its usability on the



long run. It will also require the full management's support with proper allocation of resources to create the accommodating environment needed to ensure the successful implementation of the process.

The proposed process in its entirety provides not only a suitable product development process for Islamic financial institutions, but provides also a mechanism to achieve *maqasid al-Shari'ah* through product development. It is hoped that the correct implementation of the proposed process will help the Islamic financial institutions in creating new generation of Islamic financial products that can create the needed differentiation factor and drive the future growth of the Islamic financial industry.

An example of successful implementation of the proposed product development process is the new product designed by the researcher as an overdraft solution based on *mudarabah* for businesses, which was awarded the world's first 'ethical finance innovation challenge award' at the global Islamic economy summit in Dubai in November 2013⁵. The award-winning product has been implemented by several leading Islamic financial institutions.

This new product adopted new innovative methods to solve the problem of offering an efficient overdraft solution for businesses in a *Shari'ah* compliant manner. The actual need of the customer is to have cash to manage the day to day expenses of the business and to fund, in some cases, the cost of small size capital investments in machines and equipment. Islamic financial institutions usually use either *tawarruq* or *murabahah* type of transactions to fund these needs. However, a *tawarruq* transaction will provide the customer with cash through a complex process with high transactional costs. Moreover, the *Shari'ah* compliance of such transaction remains a hot debate as many Islamic scholars see this product as non-compliant with the spirit of *Shari'ah*. On the other hand, although using the *murabahah* solution will be *Shari'ah* compliant, it can be used only to fund certain assets and material and will not be able meet most of the customers' demands that require cash payment such as staff salaries.

The new *Shari'ah*-based overdraft product developed by the researcher provides a flexible and easy method to implement solution that meets business customers' needs

⁵ Please see <u>http://efica.com/archive/2013-winners</u> for more information



while maintaining low transactional cost by using *mudarabah*, which is the most preferred mode of Islamic finance in an aspirational sense. The design of the product started by researching and understanding the exact needs of business customers and how they utilise their existing cash. After determining the customers' needs, the most appropriate mode of finance to meet the identified needs was selected. It should be noted that *mudarabah* was the obvious choice, however, most of the financial institutions will not, in general, agree to use *mudarabah* to finance any transaction due to the risks associated with this Islamic financial instrument, where the financial institutions may lose part of or the entire finance amount provided to the customer if the customer's business suffers a loss. The challenge was to create a structure that deals with the risks embedded in *mudarabah*, provide improved protection to the financial institutions, maintain the flexibility to meet the customers' needs and at the same time achieve magasid al-Shari'ah. Thus, the innovation in the structure came in the form of a new set of risk management tools that were incorporated in the new product and changed the risk profile of this mudarabah-based financing product. Full details of the new product structure is provided in Appendix 3

10.5 RECOMMENDATIONS

This research conducts a critical investigation in the current practices of product development and financial engineering in Islamic financial institutions with the objective of defining a suitable methodology and principles for engineering and developing efficient *Shari'ah*-based financial products that meet *maqasid al-Shari'ah*.

The literature review indicate a serious lack of research in this area, hence this research is expected to contribute in filling the significant gap in the scholarly literature on product development and financial engineering in Islamic financial institutions.

Furthermore, the findings of this research provide valuable input to regulators, standards-setting bodies, Islamic financial institutions and practitioners in the fields of Islamic financial engineering and product development.

10.5.1 Recommendations for Regulators/Policy Makers

Regulators should consider the following points:



- (i) Regulation framework: this research highlighted the need to adopt new approach towards regulation in order to break the continuing cycles of financial crises and provide better protection to all stakeholders in the financial market including individuals, families, society as a whole and the state. The basis of this new approach can be found within Islam and its teachings, where the principles of *maqasid al-Shari'ah* can be used to draft and implement this new type of legislation.
- (ii) Islamic finance regulation: the regulations related to Islamic finance need to provide for the following:
 - (a) All new product proposals have to be based on scientific market research and provide additional sections (to the ones usually required) to explain how the new product is different, how it will contribute to the objectives of *Shari'ah*, what risk it brings to the customer and how this risk is mitigated;
 - (b) The process of product development has to be audited by the internal auditor to ensure consistency and discipline in implementing the process;
 - (c) All new products should be subject to external *Shari'ah* audit to verify that the new product fulfils both regulatory and *Shari'ah* requirements;
 - (d) All *Shari'ah* scholars need to receive comprehensive training on financial market, banking system and how financial transactions are carried out;
 - (e) All Islamic financial institutions should be required to set aside a specific budget for research in product development field. The regulators should monitor the allocation and spending of such budget through the quarterly regulatory reporting.

10.5.2 Recommendations for Standards-Setting Bodies

Standards-setting bodies for Islamic financial institutions, such as AAOIFI, should consider:

 (i) Creating a new body (or a committee) designated to work on setting up a framework for Islamic financial products and set rating standards for Islamic financial products;



(ii) Issuing a new standard related to the implementation of maqasid al-Shari'ah within Islamic financial institutions. This new standard should provide clear guidelines on what are the actions needed by each institution to integrate maqasid al-Shari'ah at corporate level to create the supporting environment, and at execution level to ensure that all activities, products and transactions of the institutions are contributing positively to achieving maqasid al-Shari'ah.

10.5.3 Recommendations for Islamic Financial Institutions

Islamic financial institutions should consider:

- (i) Adopting a mixed strategy for product development which focuses on improving existing products and creating new products that can contribute positively to achieving *maqasid al-Shari'ah*;
- (ii) Setting up a department for product development but allow for informal crossfunctional team to support the product team;
- (iii) Providing proper resources for the product development function;
- (iv) Ensuring consistency in implementing all stages of the product development process;
- (v) Integrating the process of financial engineering into the process of product development to enhance the overall performance of the process;
- (vi) Adopting the principles of Islamic financial engineering, proposed in this research, as part of the product development policy;
- (vii) Obtain Shari'ah input at the right stages;
- (viii) Conduct all post launch reviews to maximise the benefits and ensure higher probability of product success.

Through adopting these recommendations, Islamic financial institutions will help in improving the efficiency of the product development process.



10.6 LIMITATIONS AND FUTURE RESEARCH

Every research has limitations, and this research is no different. The main limitations for this research are summarised in the following points:

- (i) Lack of research in the area: The lack of literature on Islamic financial engineering and product development has seriously affected the level of references used in this research;
- (ii) Low response rate: A bigger sample size for the survey questionnaire would have helped in providing more accurate picture on the actual practices of the industry in relation to product development;
- (iii) The research focused completely on the product development process and could have benefited from investigating the process of financial engineering within Islamic financial institutions. However, as per the researcher's knowledge, there are no Islamic financial institutions that have publicly claimed to have a special unit for financial engineering or even used a financial engineering process;
- (iv) The research focused on the current practices and compared them against the literature available, but did not measure the successes of these practices by testing the performance of newly launched products. Validating the success of the product development model used by the respondents would add additional value for this research. However, time constraint did not allow for this additional task, which can be the subject of future research.

As the Islamic financial industry is still in its early stages of development, a huge amount of research is still needed to cover all different areas in the industry. The most pressing one, as highlighted in this research, is in relation to the risk management of the Islamic financial products based on the principle of profit and loss sharing. The lack of research in this area hinders the product development efforts to create new *Shari'ah*-based products.

Another important area is related to project financial engineering in the Islamic financial industry. Financial engineering is not only about the creation and pricing of derivatives; its application is actually much wider and can bring a lot of benefits,



especially in the area of Islamic project financing. Project finance has two main elements that make it unique in relation to Islamic finance. The first is that financing structures used in a project financing cannot be copied from another project; it must be designed specifically for the project, while the second is that project financing optimises the use of existing assets in the project to obtain the needed finance.

Finally, further research aiming to measure the success of the newly launched products and then linking it back to the product development process used to design and launch the product, as explained earlier, will add a real value to the field of Islamic financial product development.



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APPENDIX 1 – SURVEY QUESTIONNAIRE

Dear Respondent,

Assalam Alikom,

I am currently working on collecting data for my PhD research at Durham University. My thesis is about "**Investigating the financial engineering and product development processes in Islamic Financial Institutions**". This research aims to establish the methodology and principles for engineering efficient, *Shari'ah*-based financial products and to design the process for implementing these products in Islamic financial institutions.

I would be grateful if you could spare a few minutes of your valuable time to complete the survey. To participate please click the link below or copy it into your web browser.

I would appreciate it if you could complete this questionnaire and return it to me at your earliest convenience. This survey is purely for research purposes and not workrelated.

Please rest assured that all information provided will be kept confidential in accordance with the research ethics and Durham University standards.

Thank you for your time!

Kind regards, Shaher Abbas

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PART 1: GENERAL INFORMATION

1) Name of Respondent	
2) Position of Respondent	
3) Name of the Institution	
4) Location of the Institution	
5) Year of Establishment	
6) Number of Employees in the Institution	
7) Most Recent Balance Sheet Figures in \$	
Year of Balance Sheet	
Total Financial Assets	
Total Financial Liabilities	
Equity (Capital)	
8) Nature of Activities	
Islamic Commercial Banking	
Jelemie Investment Penking	

Islamic Investment Banking	
Islamic Window (in a Conventional Bank)	
Islamic Retail Bank	
Islamic Fund	
Takaful Operator	
Other (please specify)	

9) Does the institution have a Shari'ah Supervisory Board/Committee?	
No	
If Yes, how many members are there in the <i>Shari'ah</i> Supervisory Board/Committee?	

10) Does the institution have an internal Shari'ah Advisor? If Yes, please go to question 12		
Yes		
No		

	2 6	
\geq	305	
11) If you answered No to the previous question, who advises the institution on the day-to-day <i>Shari'ah</i> related issues? (Please choose the appropriate answer)		
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This function is covered by a member of the <i>Shari'ah</i> Supervisory Board/Committee		
This function is outsourced to an external Shari'ah Advisory Firm		
Other, (Please Specify):		

PART 2: STRATEGY, PLANS, RESOURCES & STRUCTURE

12) 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

13) To define the importance of Product Development within your institution; (Please answer the	
following questions)	

	Yes	No
a. Does the institution's mission or vision statement include 'innovation'?		
b. Is developing new and innovative products part of the institution's overall strategy?		
c. Does the institution have a formal approach/process for innovation?		
d. Is there an annual plan for the number of new products to be developed?		
e. Is there a medium term plan for new product development with a 3 or 5 year perspective?		
f. Is there an annual budget set aside for developing new products?		

14) Who, in your institution, can be best described as the main driver for Product Development? (Please tick all appropriate boxes)

Board of Directors	
CEO/President	
Head of Relevant Business Dept	
Marketing Dept	
Internal / External Shari'ah Advisor	
Strategy / Planning Dept	
Research & Development Dept	
Product Development Dept	
Other (Please Specify):	



15) 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)				

16) Does a central specialised Product Development unit/department exist in your institution? If Yes, please go to question 18

Yes

No

17) If you answered No to the previous question, please specify which department is responsible for Product Development?

Marketing Dept

Internal Shari'ah Advisor

Strategy/Planning Dept

Research & Development Dept

Other, (please specify below)

18) How many staff members are involved in Product Development related activities on a full time basis?

19) Is there a particular individual in your institution who is responsible to authorise the new products?

No

If Yes, please state the position or title of this individual below.

20) Is there a committee responsible for overseeing the development of new products? If No, please go to question 22

Yes

No



21) If you answered Yes to the previous question, is the main responsibility of the committee to oversee the Product Development process?

Yes

No! The committee has other responsibilities

22) Would the in-house / external *Shari'ah* Advisor be involved in the Product Development process? If No, please go to question 24

Yes

No

23) If you answered Yes to the previous question, please identify the involvement of the *Shari'ah* Advisor in the following (Please tick all appropriate choices from below)

Conception stage	
Design stage	
Pricing stage	
Reviewing legal documentation from Shari'ah point of view	
Submitting product documentation for approval by the <i>Shari'ah</i> Supervisory Board/Committee	
Implementation stage	
Marketing stage	
Testing stage	
Shari'ah audit stage (after product is launched)	
Other, (please specify below)	
Other:	

PART 3: THE DESIGN, THE DETALIED PROCESS & THE DIFFICULTIES

 24) Does your institution have a formal documented Product Development process? (if No, please go to question 28)

 Yes

 No

 25) Has the Product Development process document been approved by the Shari'ah Supervisory Board/Committee?

Yes

No



26) Is the product development process document regularly updated?		
No		
Yes, how often (please specify below)		

27) How strictly is the product development process used? (Using a scale from 1 -5, where 5 is 'very strictly' and 1 is 'used as a guideline only):

1

Please tick the appropriate box

2 3

4

5

Rank

28) What are the key sources of ideas for new products? (Please rank the options 1,2.3.... according to importance)

Products of conventional financial institutions

Products of other Islamic financial institutions

External agencies (e.g. consultants)

Customers

Market research

In-house R&D

29) What are the steps used for developing new products in your institution and how often does the Product Development team follow them? (Please choose the applicable answers)

	Never	Seldom	Occasionally	Often	Always
a. Market research					
b. Brain storming exercise to generate new product ideas					
c. Formal ideas screening process					
d. Preparing a Concept Paper for the new product					
e. Approval of Concept Paper by the <i>Shari'ah</i> Board/Committee					
f. Preparing a detailed Product Definition Paper (business case/financial modelling)					
g. Sign-off for the Product Definition Paper from all relevant departments					
h. Review of the product documentation to ensure compliance with AAOIFI <i>Shari'ah</i> standards?					
i. Obtaining <i>Shari'ah</i> Board/Committee approval (for all documents and process flow)					
j. Development of the IT system and operational processes/procedures					
k. In-house testing					



1. Training of personnel			
m. Post launch review			
n. Shari'ah audit of the product			

30) In identifying products for development, which of the following factors are given higher importance? (Please rank the options 1,2,3,... according to importance)

	Rank
Financial consideration (potential turnover, profit, revenue, etc.)	
Market consideration (customer needs, match competition etc.)	
Fit with corporate strategy and plan	
Fit with the objectives of Shari'ah (maqasid al- Shari'ah)	
Resource availability (human capital, system capability, etc.)	

31) What are the main components of the New Product Concept Paper? (Please tick all appropriate boxes)

Market research

Explanatory notes on how the new product will fulfil customers' needs and demands

Documentation describing product nature, benefits & features

Identifying the main objectives of the product

Identifying the appropriate Shari'ah structure, (e.g. murabahah, musharakah, etc.)

Explaining the potential contribution of the new product in achieving the business objectives

Explaining how the new product will contribute to achieve maqasid al- Shari'ah

Other, (please Specify)

32) On what basis does your institution decide on the most appropriate *Shari'ah* structure for a new product? (Please tick the most appropriate option)

a- The structure that provides 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 best fit from Shari'ah point of view

e- The structure that brings in the highest yield compared to its cost

f- A combination of the above, or other, (please specify below)



33) What are the main components of the Product Definition Paper? (Please tick all appropriate boxes)		
Product Definition & Description		
Description of Target Market & Customers		
Financial Model (or business case)		
Credit Risk Analysis (including risk mitigation tools)		
Customer Risk Analysis		
Operational Impact Analysis		
Legal & Regulatory Analysis		
Required System Changes		
Other, (please specify below)		
Other:		

34) Which of the following sources of information are used in creating the financial model for the new product? (Please rank the options 1,2,3.... according to importance)

	Rank
Institution's own market research	
Institution's own customers data	
Specialised market data reports	
Competitor's information	

35) Pricing: what is the most important factor that will be considered when your institution prices the new product? (Please choose the most appropriate factor)

a- Achieving the required Internal Rate of Return

b- Competitors' pricing

c- Achieving other business objectives (like attracting new customers)

d- A combination of the above, or other, (please specify below)

36) Which of the following national bodies do you have to apply to in order to get any new products authorised? (Please tick all appropriate boxes)

Regulators/ Supervisors

Central National Shari'ah Authority/Board/Council

No approval is required



37) Post launch review: What types of review does your institution usually carry out 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 Shari'ah compliance

38) How long after the launch date will these reviews start?					
After 3 months					
After 6 months					
After 12 months					
As and when required					
Other, (please specify)					

39) How does the institution utilise the information gathered in the reviews? (Please choose all applicable options)

Information will be passed to the product development team to revise the identified aspects of the new product

Information will be passed to the Asset and Liability Committee to review the pricing of the new product.

Information will be passed to Operations department to review any operational or service issues related to the new product.

40) What are the key barriers to developing new products? (Please rank the options 1,2,3....in order of severity where 1 is the least severe and 5 is the most severe)

Shari'ah Scholars' lack of knowledge about financial products	
Resistance of Shari'ah Scholars to new contemporary application of Islamic finance	
Credit Risk specialists' lack of understanding of the risks associated with Islamic products	
Lack of research in the area of Islamic product development	
The costs associated with developing new innovative products	



41) Please identify, from your point of view, the risks involved in developing new products and indicate how these risks are managed? (Please identify at least one risk)					
Risk					
Management Techniques					
Risk					
Management Techniques					
Risk					
Management Techniques					

42) Please identify the organisational attitude towards innovation in developing new products?				
Supportive of new ideas				
Resistant to new ideas				
Reluctant to new ideas				

Thank you for your help and cooperation, I really appreciate the time you spent to complete this questionnaire

Wa Assalam Alikom,

Shaher Abbas

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APPENDIX 2 – INTERVIEW PARTICIPANTS

No.	Name	Position	Organization	Date of	Country
				interview	
1	Dr Abdul Sattar Abu Ghuddah	Shari'ah scholar	AAOIFI and many other Islamic financial institutions	2012	Syria
2	Walid Ben Hadi	Shari'ah scholar	AAOIFI and many other Islamic financial institutions	2012	Qatar
3	Habib Ahmed	Professor	Durham University	2012	UK
4	Asyraf Wajdi Dusuki	President	Islamic Da'wah Foundation Malaysia (YADIM)	2012	Malaysia
5	Osaid Kilani	Shari'ah scholar / Head of Shari'ah	Abu Dhabi Islamic Bank	2013	UAE
6	Akram Laldin	<i>Shari'ah</i> scholar / Executive Director	International Shari'ah Research Academy for Islamic Finance (ISRA)	2013	Malaysia
7	Allun Williams	Assistance Director, Marketing and communicating	National Savings and Investments	2013	UK
8	Sami Al- Suwailem	Head of the financial product development centre	Islamic Development Bank	2013	KSA
9	Mohammad Farrukh Raza	Managing Director	IFAAS UK Ltd (Islamic Finance Advisory & Assurance Services)	2014	UK
10	Ahmed Siddiqi	Head of Product Development	Meezan Bank	2015	Pakistan
11	Sultan Choudhry	CEO	Al Rayan Bank UK	2015	UK
12	Tariq Hameed	Lawyer	Simmons & Simmons	2015	UAE



APPENDIX 3 – *MUDARABAH*-BASED OVERDRAFT SOLUTION: PRODUCT STRUCTURE, DESIGN AND DETAILED PROCESS

1. Introduction

Islamic financial institutions (IFIs) aim at fulfilling the financial needs of their business customers in a *Shari'ah* compliant manner. To this end, this product is proposed to facilitate offering a short term overdraft facility to assist the IFIs' customers in managing their day-to-day cash flow as it allows the customers to withdraw and deposit funds on daily basis, hence providing them with the much needed flexibility option.

This product will offer a *Shari'ah*-based solution to business customers. The product is based on the Islamic financial principle of *Mudarabah*, which allows the customer to utilise the funds made available thereto as and when required, within the agreed limits, whilst the IFI shares the profit generated by the customers from investing the *Mudarabah* capital in its business in accordance with a pre-agreed profit sharing ratio. The customer makes monthly advance profit payments during the finance term, which at the end of the *Mudarabah* term are offset against the actual profit generated.

This product will be distinctively different in its nature from any similar conventional or Islamic products currently available in the market, thus, it will provide market differentiation for the Islamic Financial Institutions.

2. Shari'ah Compliance

2.1. Underlying *Shari'ah* principle:

Mudarabah is a partnership contract where *Rab al Mal* (the "Islamic Financial Institution") provides *Ras al Mal* ("*Mudarabah* Capital") to the *Mudarib* (the "Customer") who provides the work and skills required to manage *Ras al Mal*.

The basic features of *Mudarabah* include:

- *Rab al Mal* does not have the right to be involved in the management of the business;
- Both parties have to agree on a profit sharing ratio before they start the Mudarabah;
- *Rab al Mal* cannot ask for a guarantee for *Ras al Mal* (except in the case of fraud or negligence by the *Mudarib*);
- At the end of the *Mudarabah* Term, *Mudarabah* can be liquidated and the actual gross profit generated from investing *Ras al Mal* is shared according to the preagreed profit sharing ratio;



- Advance profit payments may be made by the *Mudarib* on account during the *Mudarabah* Term but shall be adjusted against the actual outcome of the *Mudarabah* at the end of the *Mudarabah* Term;
- In case of loss that is not due to the *Mudarib's* negligence or default, *Rab al Mal* bears the losses attributable to *Ras al Mal* while the *Mudarib's* efforts and work will not be rewarded.

2.2. Product contribution to maqasid al-Shari'ah

This product is based on *Mudarabah* concept; the most preferred principle in Islamic finance. It will contribute to the objective of 'preservation of wealth' by assisting both the IFI and the customer in achieving their objectives in terms of profitability in a just and fair manner based on profit and loss sharing. This means that if the customer's business achieves profit, it will be shared with the bank according to the pre-agreed profit sharing ratio. In case of loss that is not due to the customer's fault, the IFI will bear such loss while the customer's effort will go in vain.

In addition, this product will contribute to the objective of 'preservation of religion' by offering the customer a real alternative to the conventional interest-based overdraft solutions, providing the customer with a solution to facilitate the conduct of his business activities in line with the *Shari'ah* requirements.

Furthermore, this product will contribute to the well-being of the people through socioeconomic development of the society through various means including, among others, fostering growth of local businesses, enhancing employment opportunities, encouraging market productivity, boosting economy and benefiting the community and the nation at large.

3. Product Features and Detailed Criteria

3.1. Customer Types

This new product will be offered to all businesses that meet the following criteria:

- Incorporated and duly registered as a company under the laws of its jurisdiction with a valid registration number;
- Conducts Shari 'ah-compliant business activities;
- > Has a healthy profitable business sufficient to meet the expected profit rate.
- Has a low debt/capital ratio.
- ▶ Has proper accounting system with ability to record all business activities.

Note: The IFI shall ensure that extending this product does not over-burden the customer with debt, thus contradicting the objectives of Shari'ah stipulating the prevention of harm.



3.2. Facility Limit

Facility Limit will depend on the customer's needs and requirements and should take into account the risk profile of the customer.

When determining the Facility Limit, the IFI should take into account the customer's Current Assets (consisting of cash, debtors and stock) and the facility amount should not exceed the total amount of the customer's trading debtors. Exceptions can be made if the customer shows a healthy gross profit and will be subject to the management approval.

3.3. Facility Term

The *Mudarabah* Term can be made from 1 month up to 1 year. The facility can be renewed for similar or different periods according to agreement with the Customer and at the discretion of IFI's management.

3.4. Expected Profit Rate

The profit payable by the customer shall be capped at the Expected Profit Rate. The Expected Profit Rate shall be in line with the market but will also take into account competitors' pricing and the risk profile of the customer.

The Expected Profit Rate will be reviewed on an annual basis to ensure its competitiveness, but it can also be changed during the *Mudarabah* Term by mutual agreement with the Customer.

4. Detailed Process

Under this structure, the following process should be followed:

- a. The customer applies for the overdraft facility, submitting his financial statements (including cash flow statements, balance sheet, profit & loss accounts...etc) and business projections for the intended business/project.
- b. The IFI evaluates the customer's financial position and the proposed business plan. If the customer is approved, the IFI agrees with the customer on the terms of the overdraft facility including Facility Limit, *Mudarabah* Term, Profit Sharing Ratio, Expected Profit Rate...etc).
- c. *Ras al Mal* (or "*Mudarabah* Capital") is made available to the customer where he can withdraw the required amount through his current account with the IFI.

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- The Customer utilises/draws the amounts (within the agreed Facility Limit) as and when required for the duration he needs. The customer should ensure that the *Shari'ah*-specific ratios stipulated by AAOIFI accounting standards are observed at all times during the *Mudarabah* Term;
 - d. Based on the customer's utilisation of the funds (calculated daily using the scoring method) and the Expected Profit Rate, the IFI calculates the monthly Advance Profit Payment payable by the Customer and sends a notice to the customer specifying the amount and informing the customer that Advance Profit Payment shall be deducted from his current account.
 - e. As a control mechanism to monitor the performance of the customer, the IFI will request the customer to submit the main figures from the business's management accounts (including gross profit /loss, main items of the balance sheet) to the IFI on quarterly basis, where the IFI shall review the customer's business performance and discuss any issues that are affecting the achievement of the Expected Profit (if any) with the customer and try to help the customer to find solutions for such issues.
 - f. At the end of the *Mudarabah* Term,
 - i. The customer returns any outstanding *Ras al Mal* and submits his final management accounts;
 - ii. The IFI calculates the actual profit based on the performance of the business during the entire *Mudarabah* Term, and the profit is shared between the IFI and the customer based on the pre-agreed profit Sharing Ratio.
 - iii. The IFI's profit from the *Mudarabah* will be capped at the Expected Profit Rate already agreed with the customer. The Advance Profit Payments made by the customer during the *Mudarabah* Term shall be adjusted against the actual outcome of the *Mudarabah*. *Note:* In case of loss or if the actual IFI's Profit was less than the Expected Profit (where such loss or profit reduction was not caused by the customer's negligence, default or misconduct), the IFI may have to return back some, or all, of the Advance Profit Payments made by the customer
 - iv. The remaining part of the IFI's Profit, over and above the Expected Profit Rate (if any), will be held by the customer for the benefit of the IFI (subject to a cap – example 2% of *Mudarabah* Capital) as a Profit Reserve Amount. The customer will be allowed to use the Profit Reserve Amount but he shall return it immediately upon the IFI's demand (such as in case of loss or if the IFI's profit was less than the Expected Profit).

in line with the final results of the Mudarabah.

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g. The parties may agree to renew the *Mudarabah* for another term, where the balance in the Profit Reserve Amount will be rolled over to the following *Mudarabah* Term. Otherwise, the parties may agree not to renew the agreement where in such case, the IFI shall give the balance in Profit Reserve Amount to the customer as a reward for his good performance.

5. Profit Calculation

The profit will be calculated at the end of the *Mudarabah* ("Maturity Date") according to the following stages

- a. *Stage 1*: Since the Gross Profit is generated as a result of investing both of the IFI's *Ras al Mal* and the Customer's Capital (his own funds), the Gross Profit will be shared according to the capital participation of each party.
 - The Customer's Capital will be his Current Assets. The Customer's Current Assets include only (cash, debtors and stock). The Customer's Current Assets shall be calculated using the average of all quarter-end figures submitted by the customer.
 - *Ras al Mal* will be calculated based on the actual amount of funds utilised by the customer throughout the *Mudarabah* Term. A scoring method will be used to quantify the share of *Ras al Mal*.

Note: In case of loss, the losses will be shared according to the capital participation ratio where the IFI will bear all the losses attributable to Ras al Mal and might have to refund all advance profit payments received from the customer during the Mudarabah Term.

- b. *Stage 2*: The profit allocated for *Ras al Mal* will be shared according to the preagreed profit sharing ratio.
- c. *Stage 3*: The IFI's profit will be capped at the Expected Profit Rate already agreed with the customer.
- d. *Stage 4*: The remaining part of the IFI's profit (if any) will be held by the customer for the benefit of the IFI subject to the applicable cap. The customer will be allowed to use the Profit Reserve Amount but he shall return it immediately upon the IFI's demand (such as in case of loss or if the IFI's profit was less than the Expected Profit).

6. Early Settlement

The customer may request early termination of the facility by sending a notice to IFI. In such case the IFI will request the customer to provide final management accounts up to the date of termination and accordingly accept or reject the customer's request at IFI's sole discretion. In case of acceptance, IFI will calculate the profit and request the payment of any outstanding *Ras al Mal* from the customer. Otherwise, the customer will fulfil his legal obligations till the end of the *Mudarabah* period.



IFI will have the right to terminate the facility and may do so by sending a notice to the customer upon the occurrence of any of the following scenarios:

- > A change in the eligibility criteria, including *Shari'ah* eligibility requirements;
- ➢ If the actual gross profit margin goes below 10%;
- If the actual gross profit declines during the *Mudarabah* Term to reach 50% of the projected gross profit indicated by the customer at the time of setting up the account; or
- The customer returns losses for 6 consecutive months (this should not apply to seasonal businesses).

Note: The above ratios can be changed depending on the IFI's requirements and the customer's risk profile.

7. Security

Security can be obtained from the customer according to IFI's credit risk policy. It is important to note here that any security obtained for this product can be enforced against the customer only in the cases of fraud, gross misconduct or negligence of the customer.

8. Payments

The customer will make monthly payments of advance profit.

At the end of the *Mudarabah* Term and after calculating the actual gross profit, the customer will pay any outstanding *Ras al Mal* plus the IFI's share of the profit (after deducting all advance profit payments made during the *Mudarabah* Term).

In the event of the customer's business returning a loss that is proven by the final management accounts and without any fault of the customer, the IFI will have to return all of the Advance Profit Payments received and bear its share of the losses.

It will be the responsibility of the customer to prove that the losses were not the result of his negligence, fraud or breach of contract.

In case of dispute, the IFI will have the right to appoint an independent external auditor to verify the management accounts of the customer.



9. Risks and Mitigation Tools

9.1. Risks for the Islamic Financial Institutions

The distinct risk profile of *Mudarabah* may expose the IFI to various types of risks. The following table lists the most common risks for such product and IFI's approach to mitigate these risks:

Risk levels:

- ► Low <10%
- ➢ Medium 10% to 40%
- ➢ High > 40%

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No.	Risk	Probability	Impact	Mitigations		
1	Counterparty risk					• Implementing strict eligibility criteria to ensure having low risk profile of customers as detailed above.
	 Selection criteria 			• Carrying out a due diligence process in evaluating customers including KYC, AML, business purpose, operational capability and forecasts of future cash flows.		
	> Agency			• Monitoring the customer's performance and profitability by checking his quarterly management accounts.		
	problems	Medium	High	• The <i>Mudarabah</i> profit will be calculated from the gross profit and not from the net profit (i.e. before deducting any financing costs, costs attributable to fixed assets, payroll, administration costs, depreciation and profit tax) to minimise potential misconduct or fraud issues.		
	 hazards Profit calculation 			• The customer will hold, for the benefit of the IFI, the profit reserve amount that represents the remaining part of the IFI's profit share that has not been paid to the IFI due to the cap applied using the expected profit rate. The profit reserve amount will be used to top up any future reduction in the expected profit or any <i>Ras al Mal</i> losses.		
2	Credit risk			• Maintaining a pro-active follow up and frequent contact with the customer.		
				• Total credit exposures to customers will be reviewed regularly in line with the credit risk policy of the IFI.		
	Late payment of due profit	Late payment of due profit Medium High		• Adding a clause to legal agreement stating that: "The customer confirms that he has the accountancy system and means to monitor the profit constantly and to keep IFI fully informed. At any point, if the customer believes that the expected profit will not be achieved, he must immediately report to IFI. Otherwise, it will be considered as negligence".		
				• Customer should pay advance profit payments to be adjusted against the actual gross profit generated at the end of the <i>Mudarabah</i> Term.		
				• Imposing late payment charges to be donated to charity in accordance with the <i>Shari'ah</i> guidelines.		
				• Enforcing the security documents.		
3	Expected profit rate risk	Low Medium		• The expected profit rate should be reviewed annually at the point of renewal of the contract with the customer to ensure that the rate remains competitive and achievable.		
				• The expected profit rate can also be amended during the <i>Mudarabah</i> Term by mutual agreement between the IFI and the customer.		



No.	Risk	Probability	Impact	Mitigations
4	Operational risk	Low	Medium	 Operational risks to be managed through comprehensive, on-going risk management practices which will include, but not be limited to,: Formal internal control procedures. Staff training. Segregation of duties. Quarterly monitoring of customer's business performance. Sample checking of operations (by internal auditors & <i>Shari'ah</i> auditors). Regular monitoring will be undertaken by operations staff and compliance department with reports being submitted to the management.
5	Legal risk	Low	Low	 Legal review of all documentation to ensure all legal aspects and any new regulatory changes are included in the product's legal agreements so that they remain compliant at all times. The final set of the agreements can be vetted using external legal
				advisor experienced with Islamic finance.Any future update of the documentation should obtain all required approvals including <i>Shari'ah</i> approval.
6	Regulatory changes risk	Low	Low	 IFI's regulatory compliance officer will carry out regular review of new regulations. Any new regulatory requirements will be adhered to and the product's relevant documents including contracts, leaflets, processes and proceeding by the undeted according by
7	Market risk	Low	Medium	 Policy to be in place governing the level of IFI's exposure against various sectors in the market to avoid concentration risk. Regular revaluation is required to evaluate the total exposure of this product in terms of customers' types, segments and industries.
8	<i>Shari'ah</i> non- compliance risk	Low	High	 All the policies and procedures of the product will be reviewed from <i>Shari'ah</i> point of view to add the needed control functions. IFI's <i>Shari'ah</i> advisor will be responsible for conducting a regular review of existing policies, procedures, practices, advertisement, marketing material etc to ensure that all <i>Shari'ah</i> requirements have been fully satisfied. Adding a clause stating that: "the customer confirms that he will be actively monitoring Shariah quantitative requirements (financial ratios) and will endeavour to ensure that the ratios are kept below the prescribed limits in all times on a best-effort basis".

9.2. Risks for the Customer

Under *Mudarabah*, the profit payable by the customer to the IFI is based on the actual profit generated by the customer's business. Furthermore, the customer does not guarantee *Ras al Mal* in case of loss that is not due to the customer's negligence, default or fraud. Nevertheless, these conditions do not mean that this product is risk free for the customer.



The following table lists the risks pertaining to the customer under this structure and the risk mitigation tools to be adopted. These risks will be explained fully to the customer at the outset and before signing the legal agreements. Full technical assistance will be provided to the customer to support him in implementing all required mitigation tools.

No.	Risk	Probability	Impact	Mitigations
1	Business performance risk > Market conditions > Service quality	Medium	High	 The customer should at all times: Ensure good practices and quality products and services are offered to his customers. Comply with the business requirements as agreed with the IFI and avoid divergence from the stipulated terms to safeguard the customer in case of loss due to the customer's negligence, misconduct or fraud. Keep track of the profitability of the business using enhanced systems and technologies and keeping the IFI informed at all times of any changes to the expected profit as stipulated in the business's projected financials.
2	Liquidity risk Liquidity manageme nt Suppliers' issues 	Medium	High	 Ensuring the <i>Mudarabah</i> capital is used for business activities only and not for acquiring fixed assets (like buildings, officesetc) Maintaining a pro-active follow up with suppliers and customer to ensure timely collection and payment of amounts due and enhance the smooth running of the business.
3	Expected profit rate risk	Low	Medium	• The IFI may request amending/reviewing the expected profit rate during the <i>Mudarabah</i> Term, however, the customer has the right to accept or refuse such amendment.
5	Legal risk > Vague clauses > IFI-bias conditions > Unclear obligations	Low	Low	 Ensure full understanding of the legal agreements' terms and conditions to avoid any misunderstanding or ambiguity and to ensure the proper performance of the obligations set out in the agreements. Inform the IFI of any clauses in the agreement that seem to be unfair or contain ambiguity to ensure fairness to all parties. Reviewing the legal agreements by a legal advisor experienced with Islamic finance (if possible).
6	Legal status changes risk	Low	Low	• Ensure compliance with all applicable laws, regulations and legal requirements pertaining to the customer business to avoid any consequences that may affect the validity and/or profitability of the business.
7	<i>Shari'ah</i> non- compliance risk	Low	High	 Actively monitoring <i>Shari'ah</i> quantitative requirements (financial ratios stipulated by AAOIFI) detailed in the legal agreement. Ensure that the financial ratios are kept below the prescribed limits at all times.



10. Documentation

This product requires the following documents:

- i. Facility Letter.
- ii. Mudarabah Agreement.
- iii. Security Documents.

These documents shall be in addition to other credit approval & KYC documents required in line with the IFI's finance product programs and the standard policies and procedures.

<u>11.</u> Product review triggers

The product should be launched with a comprehensive review plan designed as follows:

11.1. Periodic review triggers

- ➢ First review: after 6 months from launch.
- ➢ Onwards: every 1 year.

11.2. Occasional triggers that may require immediate review

- Regulatory changes.
- Operational changes.
- System changes.
- Customers' demand changes.
- Customer complaints.
- Recommendation by the Shari'ah Supervisory Board, Shari'ah Advisor, Internal or External Shari'ah Auditors, Internal Auditor, or the Central Bank's Examiners.

Feedback received from the reviews will be evaluated by the head of the product development department and the required changes will be implemented upon obtaining required internal approvals.

END.



APPENDIX 4 – KOLMOGOROV-SMIRNOV AND SHAPIRO-WILK

NORMALITY TEST

OUESTION	Kolmogorov-Smirnov ^a		Shapiro-Wilk			
QUESTION	Statistic	df	Sig.	Statistic	df	Sig.
Q12 - How would you best explain the market position of your institution in relation to developing new products?	0.300	11.000	0.007	0.793	11.000	0.008
Q13 - To define the importance of Product Developm	nent within y	our institut	tion			
Q13.1 - To define the importance of Product Development within your institution, does the institution's vision or mission statement include 'innovation'?	0.401	11.000	0.000	0.625	11.000	0.000
Q13.2 - Is developing new and innovative products part of your institution's overall strategy?	0.528	11.000	0.000	0.345	11.000	0.000
Q13.3 - Does your institution have a formal approach/process for innovation?	0.401	11.000	0.000	0.625	11.000	0.000
Q13.4 - Is there an annual plan for the number of new products to be developed?	0.353	11.000	0.000	0.649	11.000	0.000
Q13.5 - Is there a medium term plan for new product development with a 3 or 5 year perspective?	0.353	11.000	0.000	0.649	11.000	0.000
Q13.6 - Is there an annual budget set aside for developing new products?	0.353	11.000	0.000	0.649	11.000	0.000
Q14 - Who, in your institution, can be best described as the main driver for Product Development?	0.158	11.000	.200*	0.938	11.000	0.503
Q15 - How would you rank the availability of resource your institution?	ces for Produ	ct Develop	pment in t	he following	, categories	within
Financial (budget)	0.300	11.000	0.007	0.793	11.000	0.008
People (knowledge, skills, etc)	0.346	11.000	0.001	0.774	11.000	0.004
Technology (appropriate hardware and software)	0.227	11.000	0.120	0.819	11.000	0.017
Q17 - If you answered No to the previous question (Q16)(Does a central specialised Product Development unit/department exist in your institution?), please specify which department is responsible for Product Development?	0.328	11.000	0.002	0.711	11.000	0.001
Q18 - How many staff members are involved in Product Development related activities on a full time basis?	0.321	11.000	0.002	0.778	11.000	0.005
Q19 - Is there a particular individual in your institution who is responsible to authorise the new products?	0.343	11.000	0.001	0.627	11.000	0.000
Q21 - If you answered Yes to the previous question (Q20)(Is there a committee responsible for overseeing the development of new products?), is the main responsibility of the committee to oversee the Product Development process?	0.401	11.000	0.000	0.625	11.000	0.000
Q23 - If you answered Yes to the previous question (Q22), please identify the involvement of the <i>Shari'ah</i> Advisor in the following						
Conception stage	0.492	11.000	0.000	0.486	11.000	0.000
Design stage	0.448	11.000	0.000	0.572	11.000	0.000
Pricing stage	0.401	11.000	0.000	0.625	11.000	0.000
Submitting documentation for approval by the SSB	0.528	11.000	0.000	0.345	11.000	0.000
Implementation stage	0.353	11.000	0.000	0.649	11.000	0.000
Marketing stage	0.492	11.000	0.000	0.486	11.000	0.000
Testing stage	0.492	11.000	0.000	0.486	11.000	0.000



OUESTION	Kolmogorov-Smirnov ^a		Shapiro-Wilk			
QUESTION	Statistic	df	Sig.	Statistic	df	Sig.
Shari'ah audit stage (after product is launched)	0.492	11.000	0.000	0.486	11.000	0.000
Q25 - Has the Product Development process document been approved by the <i>Shari'ah</i> Supervisory Board/Committee?	0.353	11.000	0.000	0.649	11.000	0.000
Q27 - How strictly is the product development process used?	0.264	11.000	0.031	0.878	11.000	0.099
Q28 - What are the key sources of ideas for new proc	lucts?					
Products of conventional financial institutions	0.259	11.000	0.038	0.879	11.000	0.100
Products of other Islamic financial institutions	0.245	11.000	0.064	0.817	11.000	0.016
External agencies (e.g. consultants)	0.283	11.000	0.014	0.857	11.000	0.053
Customers	0.333	11.000	0.001	0.825	11.000	0.020
Market research	0.165	11.000	.200*	0.870	11.000	0.078
In-house R&D	0.173	11.000	.200*	0.889	11.000	0.135
Q29 - What are the steps used for developing new probevelopment team follows them?	oducts in you	ır institutio	n and hov	w often the P	roduct	
Market research	0.217	11.000	0.155	0.887	11.000	0.128
Brainstorming exercise to generate new products ideas	0.282	11.000	0.014	0.882	11.000	0.110
Formal ideas screening process	0.286	11.000	0.012	0.804	11.000	0.011
Preparing a Concept Paper for the new product	0.312	11.000	0.004	0.840	11.000	0.031
Approval of Concept Paper by the SSB	0.255	11.000	0.044	0.832	11.000	0.025
Preparing a detailed Product Definition Paper (business case/financial modelling)	0.300	11.000	0.007	0.703	11.000	0.001
Sign-off for the Product Definition Paper from all relevant departments	0.321	11.000	0.002	0.778	11.000	0.005
Review of the product documentation to ensure compliance with AAOIFI rules	0.318	11.000	0.003	0.793	11.000	0.008
Obtaining SSB approval (for all documents and process flow)	0.401	11.000	0.000	0.625	11.000	0.000
Development of the IT system and operational processes/procedures	0.294	11.000	0.009	0.840	11.000	0.032
In-house testing	0.219	11.000	0.146	0.889	11.000	0.134
Training of personnel	0.255	11.000	0.044	0.899	11.000	0.181
Post launch review	0.275	11.000	0.020	0.879	11.000	0.100
Shari'ah audit of the product	0.448	11.000	0.000	0.572	11.000	0.000
Q30 - In identifying products for development, which of the following factors are given higher importance?						
Financial consideration (potential turnover, profit, revenue, etc)	0.229	11.000	0.110	0.872	11.000	0.081
Market consideration (customer needs, match competition etc.)	0.287	11.000	0.012	0.754	11.000	0.002
Fit with corporate strategy and plan	0.337	11.000	0.001	0.841	11.000	0.033
Fit with the objectives of <i>Shari'ah</i> (maqasid al- Shari'ah)	0.250	11.000	0.053	0.830	11.000	0.023
capability, etc.)	0.172	11.000	.200	0.866	11.000	0.068
Q31 - What are the main components of the New Product Concept Paper?						
Market research	0.401	11.000	0.000	0.625	11.000	0.000
How the new product will fulfil customers' needs	0.492	11.000	0.000	0.486	11.000	0.000
Identifying the main objectives of the product	0.448	11.000	0.000	0.572	11.000	0.000
Identifying the appropriate <i>Shari</i> ah structure	0.492	11.000	0.000	0.486	11.000	0.000
How the new product will achieve the business objectives	0.492	11.000	0.000	0.486	11.000	0.000

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OUESTION	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
QUESTION	Statistic	df	Sig.	Statistic	df	Sig.
How the new product will contribute to achieve maqasid al- Shari'ah	0.401	11.000	0.000	0.625	11.000	0.000
Q32 - On what basis does the institution decide on the most appropriate <i>Shari'ah</i> structure for the new product?	0.245	11.000	0.065	0.775	11.000	0.004
Q33 - What are the main components of the Product	Definition Pa	aper?				
Product Definition & Description	0.528	11.000	0.000	0.345	11.000	0.000
Description of Target Market & Customers	0.401	11.000	0.000	0.625	11.000	0.000
Financial Model (or business case)	0.401	11.000	0.000	0.625	11.000	0.000
Credit Risk Analysis (including risk mitigation tools)	0.401	11.000	0.000	0.625	11.000	0.000
Customer Risk Analysis	0.353	11.000	0.000	0.649	11.000	0.000
Operational Impact Analysis	0.401	11.000	0.000	0.625	11.000	0.000
Legal & Regulatory Analysis	0.448	11.000	0.000	0.572	11.000	0.000
Required System Changes	0.401	11.000	0.000	0.625	11.000	0.000
Q34 - Which of the following sources of information	are used in c	creating the	financial	l model for th	he new pro	duct?
Institution's own market research	0.191	11.000	.200*	0.863	11.000	0.064
Institution's own customers data	0.280	11.000	0.016	0.826	11.000	0.021
Specialised market data reports	0.210	11.000	0.191	0.896	11.000	0.165
Competitor information	0.221	11.000	0.139	0.818	11.000	0.016
Q35 - Pricing: what is the most important factor that is considered when the institution prices the new product?	0.233	11.000	0.096	0.822	11.000	0.019
Q36 - Which of the following national bodies do you	have to appl	ly to in ord	er to get a	iny new prod	lucts cleare	d?
Regulators/Supervisors	0.401	11.000	0.000	0.625	11.000	0.000
National Shari'ah Board	0.448	11.000	0.000	0.572	11.000	0.000
No approval is required	0.492	11.000	0.000	0.486	11.000	0.000
Both (regulators and National Shari 'ah Board)	0.528	11.000	0.000	0.345	11.000	0.000
Q37 - Post launch review: What types of review does product?	the institutio	on usually	carry out	after the laur	ich of the r	iew
Review of product profitability	0.492	11.000	0.000	0.486	11.000	0.000
Review of sales target	0.353	11.000	0.000	0.649	11.000	0.000
Review of pricing	0.448	11.000	0.000	0.572	11.000	0.000
Review of policies and procedures	0.401	11.000	0.000	0.625	11.000	0.000
Review of Shari'ah compliance	0.528	11.000	0.000	0.345	11.000	0.000
Q38 - How long after the launch date these reviews start?	0.208	11.000	.200*	0.854	11.000	0.049
Q39 - How does the institution utilise the information	n gathered in	the review	's?			
Information is passed to the product development team	0.353	11.000	0.000	0.649	11.000	0.000
Information is passed to ALCO	0.448	11.000	0.000	0.572	11.000	0.000
Information is passed to operations department	0.448	11.000	0.000	0.572	11.000	0.000
Q40 - What are the key barriers to developing new products?						
<i>Shari 'ah</i> Scholars' lack of knowledge about banking products	0.350	11.000	0.000	0.758	11.000	0.003
Resistance of <i>Shari'ah</i> Scholars to new contemporary application of Islamic finance	0.277	11.000	0.018	0.799	11.000	0.009
Credit Risk specialists' lack of understanding of the risks associated with Islamic products	0.226	11.000	0.121	0.924	11.000	0.353
Lack of research in the area of Islamic product development	0.248	11.000	0.058	0.887	11.000	0.126

OUESTION	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
QUESTION	Statistic	df	Sig.	Statistic	df	Sig.
The costs associated with developing new innovative products	0.343	11.000	0.001	0.697	11.000	0.000
Q42 - Please identify the organisational attitude towards innovation in developing new products?	0.482	11.000	0.000	0.504	11.000	0.000
 a. Lilliefors Significance Correction *. This is a lower bound of the true significance. b. Q16, Q20 Q22, Q23(4), Q24, Q26 Q31(3) and (Q41) are constants. They have been omitted. 						

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