

The copyright © of this thesis belongs to its rightful author and/or other copyright owner. Copies can be accessed and downloaded for non-commercial or learning purposes without any charge and permission. The thesis cannot be reproduced or quoted as a whole without the permission from its rightful owner. No alteration or changes in format is allowed without permission from its rightful owner.



**THE MEDITING EFFECT OF IT CAPABILITY
ON THE RELATIONSHIP BETWEEN TQM AND MO
WITH MICROFINANCE INSTITUTIONS
PERFORMANCE**



ABDO ALI ABDULLAH HOMAID

UUM
Universiti Utara Malaysia

**DOCTOR OF PHILOSOPHY
UNIVERSITI UTARA MALAYSIA
January 2016**

**THE MEDITINHG EFFECT OF IT CAPABILITY ON
THE RELATIONSHIP BETWEEN TQM AND MO
WITH MICROFINANCE INSTITUTIONS
PERFORMANCE**



UUM

By

ABDO ALI ABDULLAH HOMAID

Universiti Utara Malaysia

**Thesis Submitted to
School of Business Management,
Universiti Utara Malaysia,
In Fulfillment of the Requirement for the Degree of Doctor of Philosophy**

PERMISSION TO USE

In presenting this thesis in fulfilment of the requirements for a Post Graduate degree from the Universiti Utara Malaysia (UUM), I agree that the Library of this university may make it freely available for inspection. I further agree that permission for copying this thesis in any manner, in whole or in part, for scholarly purpose may be granted by my supervisor(s) or, in their absence, by the Dean of School of Business Management where I did my thesis. It is also understood that any copying or publication or use of this thesis or parts of it for due recognition shall be given to me and to the UUM in any scholarly use which may be made of any material in my thesis.

Requests for permission to copy or to make other use of materials in this thesis, in whole or in part should be addressed to:

Dean of School of Business Management
Universiti Utara Malaysia
06010 UUM Sintok
Kedah Darul Aman



UUM
Universiti Utara Malaysia

ABSTRACT

Microfinance, an effective tool to fight poverty and economic development, has attracted the attention of governments, international organizations, and academicians across the globe. Although the literature confirms on the significant effect of Total Quality Management (TQM), Market Orientation (MO), and Information Technology (IT) on MFIs performance, research done on the relationships between these factors is still insufficient. This study aims to examine the interaction effects of TQM, MO, and IT capability on MFIs performance and thus, provide additional insights into the literature. It also examines the mediating effect of IT capability on the relationship between TQM and MO with the MFIs performance. The study employs Resource-Based View as the guiding theory with two supporting theories, namely, Dynamic Capability Theory and Complementarity Theory. Cross-sectional survey was employed, and questionnaires were administered to collect data from the branch managers in Yemen. Out of 166 questionnaires distributed through a self-administered approach, 125 usable responses were used for the analysis. Partial Least Square-Structural Equation Modeling was advocated and the result provides an empirical evidence of the significant effect of TQM, MO and IT capability on the MFIs performance. More important, this study reveals that IT capability is a significant mediator on the relationship between TQM, MO and MFIs performance, and hence supporting the theoretical premises. The study concludes with the theoretical contributions, managerial implications on MFIs, limitations of the study and suggestions for future research.

Keywords: Total Quality Management, market orientation, information technology capability, microfinance institutions performance, Yemen

ABSTRAK

Pembiayaan mikro, suatu kaedah yang berkesan untuk memerangi kemiskinan dan pembangunan ekonomi, telah menarik perhatian kerajaan, organisasi antarabangsa, dan ahli akademik di seluruh dunia. Walau bagaimanapun, pengetahuan tentang pemacu atau faktor yang mempengaruhi Institusi Pembiayaan Mikro (MFI) masih berkurangan. Walaupun literatur lalu mengesahkan kesan yang besar Pengurusan Kualiti Menyeluruh (TQM), Orientasi Pasaran (MO), dan Teknologi Maklumat (IT), penyelidikan yang menyiasat hubungan antara faktor-faktor ini dan prestasi MFI masih sukar didapati. Kajian ini mengkaji kesan interaksi TQM, MO, dan keupayaan IT terhadap prestasi MFI dan memberikan maklumat tambahan dalam literatur lalu. Di samping itu, kajian ini juga menyelidik tentang kesan pengantara keupayaan IT terhadap hubungan di antara TQM dan MO dengan prestasi MFI. Kajian ini menggunakan Pandangan Berasaskan Sumber (*Resource-Based View*) sebagai teori pembimbing dan dua teori sokongan lain, iaitu Teori Keupayaan Dinamik (*Dynamic Capability Theory*) dan Teori Saling Melengkapi (*Complementarity Theory*). Kaedah tinjauan soal selidik keratan rentas telah digunakan, dan data dikumpul daripada pengurus-pengurus cawangan di Yaman. Daripada 166 soal selidik yang diedarkan melalui pendekatan tadbir sendiri, hanya 125 borang soal selidik digunakan untuk dianalisis. Dengan menggunakan permodelan persamaan separa kuasa dua terkecil (*partial least square-structural equation*), hasil kajian ini memberikan bukti empirikal kesan signifikan TQM, MO, dan keupayaan IT terhadap prestasi MFI. Lebih penting lagi, kajian ini mendedahkan bahawa keupayaan IT merupakan pengantara yang signifikan dalam hubungan antara TQM, MO, dan prestasi MFI, dan seterusnya menyokong premis teori. Tesis ini diakhiri dengan sumbangan secara teori, implikasi pengurusan untuk MFI, batasan kajian, dan cadangan untuk kajian akan datang.

Kata kunci: Pengurusan Kualiti Menyeluruh, orientasi pasaran, keupayaan teknologi maklumat, prestasi institusi pembiayaan mikro, Yaman

ACKNOWLEDGEMENTS

In the name of Allah, the most Gracious, the most Merciful. Alhamdulillah praises and thanks for His blessing that I am able to complete my PhD study. Peace and prayers be upon our beloved Prophet Muhammad, his families, companions and followers.

My foremost and gratitude thanks go to my supervisors, Prof. Dr. Mohd Sobri and Dr. Mohd Amy Azhar for their professional guidance, continuous support, encouragement and kindness during my study journey. They have devoted their expertise and precious times in guiding me to reach up to this level. Thank you very much, all your endeavours and efforts are appreciated forever.

I also would like to thanks those who have assisted me during proposal defence, data analysis and final thesis write up. My thanks also go to everybody in UUM, including OYA, COB and SBM staff for their cooperation and supports. Additionally, I would like to express my sincere thanks Mohammed Ali Homaid, Dr. Fahmi Fararah, Dr. Abdullah Al-swidi, Dr. Majid Goail and Dr. Maha Yusr, Gamal Al-Douis for their supportive endeavours and help.

Undoubtedly, it is difficult to complete this research without the assistance of the microfinance institutions management. Majority of them have provided assistance far beyond my expectations. I would like to express sincere thanks and gratitude to Mr Mohammed Saleh Al-lai, who is the CEO of Al-Amal Microfinance Bank, for his great support and encouragement. Thanks also to the department managers of Al-Amal Microfinance Bank, Mohanad Ali Al-Maktary, Ghamdan Abdu Awn, Ali Jubran and Mohammed Attya for their great support. The efforts of Yemen Microfinance Network (YMN) management are highly appreciated.

My deep appreciation and love go to all my family members who have shared with me the joy and frustration during my study. My love to my parents for their motivation, dedication and prayers. My respect to my brothers, Ameen and Nabeel, and my sisters, Nabila, Nadia and Hana'a. My endless love to my wife for her long endurance, spiritual supports and true love and also to my children Tareq, Shuhd and Waleed. May Allah bless us all the time.

TABLE OF CONTENTS

Content	Page
CERTIFICATION OF THESIS WORK	i
PERMISSION TO USE	iii
ABSTRACT	iv
ABSTRAK	v
ACKNOWLEDGEMENTS	vi
TABLE OF CONTENTS	vii
LISTS OF TABLES	xi
LIST OF FIGURES	xii
LIST OF ABBREVIATIONS	xiii
LIST OF APPENDIXES	xiv
CHAPTER ONE: INTRODUCTION	
1.0 Introduction	1
1.2 Background of the Study	3
1.3 Problem Statement	10
1.4 Research Questions	17
1.5 Research Objectives	18
1.6 Significance of the Study	19
1.7 Scope of the Study	21
1.8 Organization of the Thesis	22
CHAPTER TWO: LITERATURE REVIEW	
2.1 Introduction	24
2.2 Microfinance in Yemen	24
2.2.1 Overview of Yemeni Economy	25
2.2.2 The Directions of Microfinance in Yemen	26
2.2.3 Current State of MFIs in Yemen	28
2.2.4 The Importance of MFIs Performance Improvement in Yemen	30
2.3 The Theoretical Review on MFIs Performance	33
2.3.1 The Concept of Microfinance	33
2.3.2 Organization Performance	35
2.3.3 Microfinance Institutions (MFIs) Performance	41

2.3.4	The Performance Measurement Used in the Study	44
2.4	Review on the Relationship with MFIs Performance	46
2.4.1	Total Quality Management (TQM) and MFIs Performance	46
2.4.1.1	Quality Definition	46
2.4.1.2	Total Quality Management Definition	49
2.4.1.3	Total Quality Management Critical Success Factors	52
2.4.1.4	Total Quality Management and Organization Performance	67
2.4.2	Market Orientation (MO) and MFIs Performance	71
2.4.2.1	Marketing and MO Concept	71
2.4.2.2	Market Orientation Dimensions	78
2.4.2.3	MO and Organization Performance	81
2.4.3	Information Technology (IT) Capability and MFIs Performance	84
2.4.3.1	IT Capability Definition and Concept	84
2.4.3.2	IT Capability Dimensions	87
2.4.3.3	IT Capability and Organization Performance	91
2.5	Review on the Relationship among the Variables	96
2.5.1	TQM and IT capability	96
2.5.2	MO and IT Capability	98
2.5.3	The Potential Mediating Effect of IT Capability on both TQM, MO and MFIs Performance	99
2.6	Underpinning Theories	105
2.6.1	Resource-Based View (RBV) Theory	106
2.6.2	Dynamic Capabilities Theory	110
2.6.3	Complementarity Theory	113
2.7	Summary of the Chapte	115
 CHAPTER THREE: RESEARCH METHODOLOGY		
3.1	Introduction	117
3.2	Research Design	117
3.3	Hypotheses Development	121
3.3.1	Hypotheses Confirming the Effect of TQM on MFIs Performance	121
3.3.2	Hypotheses Confirming the Effect MO on MFIs Performance	126
3.3.3	Hypotheses Regarding IT Capability as a Mediator	128
3.4	Population and Sampling	134
3.5	Unit of Analysis	137
3.6	Questionnaire Design and Measurements	138
3.6.1	Microfinance Institutions Performance Scale	140
3.6.2	Total Quality Management (TQM) Scale	141
3.6.3	Market Orientation (MO) Scale	143
3.6.4	Information Technology (IT) Capability Scale	144
3.7	Pilot Study	146
3.7.1	Pilot Study Analysis and Result	146
3.8	Data Analysis Techniques	150
3.9	Summary of the Chapter	155

CHAPTER FOUR: DATA ANALYSIS AND FINDINGS

4.1	Introduction	156
4.2	Survey Response Analysis	156
4.2.1	Response Rates	156
4.2.2	Respondents Profile	158
4.3	Data Screening and Preliminary Analysis	161
4.3.1	Missing Data Treatment	161
4.3.2	Non-Response Bias Test	162
4.3.3	Descriptive Statistics	164
4.3.4	Outliers	168
4.3.5	Normality Test	169
4.3.6	Linearity Test	171
4.3.7	Multicollinearity	172
4.4	Quality Model Evaluation	174
4.4.1	Measurement Model Evaluation	175
4.4.1.1	Indicator Reliability	177
4.4.1.2	Internal Consistency Reliability	179
4.4.1.3	Convergent Validity	181
4.4.1.4	Discriminant Validity	182
4.4.2	First-order and Second-order constructs	186
4.4.2.1	The Second –order Constructs Establishment	188
4.4.3	Structural Model Evaluation	190
4.4.3.1	R-square (R^2)	191
4.4.3.2	Effect Size (F^2)	194
4.4.3.3	Predictive Relevance of the Model (Q^2)	195
4.4.3.4	Goodness of Fit (GoF) of the Model	197
4.4.3.5	Path Coefficients Testing	198
4.4.3.6	The Mediating Relationships Testing	202
4.4.3.7	Additional Analysis of the Mediating Effect Moon the Link between TQM and MFIs Performance	210
4.5	Summary of the Findings	212
4.6	Summary	213

CHAPTER FIVE DISCUSSION AND CONCLUSION

5.1	Introduction	215
5.2	Discussions	217
5.2.1	Total Quality Management and Microfinance Institutions Performance	217
5.2.1.1	Leadership Management and MFIs Performance	218
5.2.1.2	Customer Focus and MFIs Performance	220
5.2.1.3	Strategic Planning and MFIs Performance	221
5.2.1.4	Training and MFIs Performance	222
5.2.1.5	Continuous Improvement and MFIs Performance	223
5.2.1.6	Benchmarking and MFIs Performance	225
5.2.1.7	Quality Culture and MFIs Performance	226
5.2.2	Market Orientation (MO) and MFIs Performance	228
5.2.2.1	Intelligence Generation and MFIs Performance	229

5.2.2.2 Intelligence Dissemination and MFIs Performance	231
5.2.2.3 Responsiveness and MFIs Performance	232
5.2.3 IT Capability and MFIs Performance	232
5.2.4 TQM and IT Capability	234
5.2.5 MO and IT Capability	235
5.2.6 The Mediating Effect of IT Capability on the Relationship between TQM and MFIs Performance	235
5.2.7 The Mediating Effect of IT Capability on the Relationship between MO and MFIs Performance	238
5.3 Contributions of the Study	240
5.3.1 Theoretical Contribution of the Study	240
5.3.2 Practical Contribution of the Study	243
5.4 Limitations and Recommendations for Future Research	245
5.5 Conclusion	248
REFERENCES	249
APPENDIXES	307



UUM
Universiti Utara Malaysia

LISTS OF TABLES

Table		Page
Table 2.1	Selected of some Major Yemeni Economic Indicators	26
Table 2.2	Yemeni Microfinance Institutions (as in December 2012)	30
Table 3.1	Hypotheses List	133
Table 3.2	Microfinance Institutions Performance Scale	140
Table 3.3	Total Quality Management Success Factors Scale	141
Table 3.4	Market Orientation Scale	144
Table 3.5	IT Capability Scale	145
Table 3.6	Summary Statistics of Reliability Analysis	147
Table 3.7	Factor Analysis of the Final Measurement	149
Table 3.8	The Criteria of the Measurement Model Evaluation	153
Table 3.9	The Criteria of Structural Model Evaluation	154
Table 4.1	Number of Respondents and Response Rate	158
Table 4.2	The Responding MFIs Profile (N=125)	161
Table 4.3	Non-Response Bias Test	164
Table 4.4	Descriptive Statistics of the Constructs (N=125)	168
Table 4.5	Normality Test	171
Table 4.6	Multicollinearity Test	173
Table 4.7	Pearson Correlations of the Study Variables	174
Table 4.8	The Significance of the Factor Loadings	177
Table 4.9	Internal Consistency Analysis	180
Table 4.10	Factor Analysis and Item Loadings	183
Table 4.11	Correlation and Discriminant Validity	185
Table 4.12	T-value and Significance of the Second-order	189
Table 4.13	The Effect Size of the MFIs Performance and the Interaction Term	195
Table 4.14	The Effect Size of the IT Capability and the Interaction Term	195
Table 4.15	The Predictive Relevance of the Endogenous Construct	197
Table 4.16	The Results of Hypotheses Testing	199
Table 4.17	The Results of the Mediating Role of IT Capability between TQM and Performance	206
Table 4.18	The Results of the Mediating Role of IT Capability between MO and Performance	208
Table 4.19	The Results of the Mediating Role of MO between TQM and Performance	211
Table 4.20	Summary of the Results	213

LIST OF FIGURES

Figure		Page
Figure 3.1	Theoretical Framework of the Study	120
Figure 3.2	A Priori Power Analysis Result	135
Figure 4.1	A Two-step Process of PLS-SEM Evaluation	175
Figure 4.2	The Original Research Model	176
Figure 4.3	First-order Measurement of Intelligence Generation (IG)	186
Figure 4.4	Second-order Measurement of Market Orientation (MO)	187
Figure 4.5	Items Loading, Path Coefficient and R^2 Value	193
Figure 4.6	PLS Bootstrapping Results of the Model	200
Figure 4.7	Simple Mediation Model	203
Figure 4.8	Criteria of Identifying Mediation Type	205



UUM
Universiti Utara Malaysia

LIST OF ABBREVIATIONS

CSFs	Critical Success Factors
BSC	Balanced Score Card
BEMs	Business Excellence Models
CGAP	Consultative Group to Assist the Poor
CSFs	Critical Success Factors
EFQM	European Foundation for Quality Management
GDP	Gross Domestic Products
IT	Information Technology
IFC	International Finance Corporation
IQAs	International Quality Awards
MBNQA	Malcolm Baldrige National Quality Award
MO	Market Orientation
MIX	Microfinance Information Exchange
MFI	Microfinance Institution
MFI	Microfinance Institutions
MENA	Middle East and North Africa
PLS	Partial Least Squares
PLS-SEM	Partial Least Squares-Structural Equation Modeling
SMEs	Small and Medium Enterprises
SPSS	Statistical Package for Social Science
SEM	Structural Equation Modeling
TQM	Total Quality Management
YMN	Yemen Microfinance Network



Universiti Utara Malaysia

LIST OF APPENDIXES

Appendix		Page
Appendix 1	Questionnaire- English Version	308
Appendix 2	Questionnaire- Arabic Version	315
Appendix 3	Total Quality Management Critical Success Factors	322
Appendix 4	List of MFIs Branches in Yemen	325
Appendix 5	Non-Response Bias Test	328
Appendix 6	Outliers Result	331
Appendix 7	Skewness and Kurtosis Results for Normality Test	332
Appendix 8	Linearity Test	333
Appendix 9	Multicollinearity Test	335



UUM
Universiti Utara Malaysia

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Over the last few decades, the microfinance institutions (MFIs), as the development institutions, had drastically emerged as a powerful and effective tool for fighting poverty with the objectives to serve the low income people who lack access to commercial banking system (Ben Abdelkader, Hathroubi, Jemaa, & Mekki, 2012; Ledgerwood, Earne, & Nelson, 2013; Mersland & Strøm, 2014; Boateng, Boateng, & Bampoe, 2015). As means of meeting national and economic development goals, the MFIs had created new job opportunities, helping existing businesses to grow and diversify their core activities, empowered women and other minor communities and support start-up businesses (Pakdel & Monroy, 2010). In fact, the MFIs had played important roles in reducing poverty and regarded as the crucial economic and national development agenda (Ali & Alam, 2010).

The microfinance, as an area, had widely attracted the attention of policy makers, governments, donors and academicians across the world (Mersland & Strøm, 2014). This is not a new fact as Robinson (1995) long ago criticized for the lack of financial services, such as saving and credit, arguing that the establishment of the MFIs are crucial for combating poverty, which is a global issue (Roy & Goswami, 2013). Elijah (2007) cites that poor people, with lack of capital, find it difficult to invest in productive activities, expand the existing business and to get needed capital. All these had significantly minimized their chances of getting out of poverty. It is not

surprising that Ledgerwood *et al.* (2013) mentioned “*Today there is broad recognition that access to capital is only one of the inputs required for economic development and poverty alleviation*”. They highlighted the importance of having the MFIs to assist the low income people and the government to combat against the poverty issue. Khan and Noreen (2012) claimed that this should not be limited only to financing, but also providing a variety of financial and nonfinancial services that meet their needs.

According to the Asian Development Bank (2012), as of the year 2011 there are almost 2.2 billion people who are currently suffering from poverty, living on less than USD2 a day worldwide. Data for Asia Pacific region, as in 2008, showed that there were 1.73 billion poor people who fell into this category. This number is significantly larger than the combined population of North America and Western Europe. This probably explains why the Asian Development Bank was actively involved in the microfinance industry to support the poor people and to combat poverty. This is supported by the high numbers of MFIs establishment in the region.

For the governments, the main concern of all governments in ensuring the stability of a country in terms of the economy and political stability is by addressing the issue regarding the wellbeing of their citizenship and combating poverty (Durrani, Usman, Malik, & Ahmad, 2011). Poverty has many negative social impacts, such as high crime rates, high illiteracy rates and poor health (Maddocks, 2011) and this justifies why poverty is strongly believed to be the root of terrorism (Nanayakkara & Iselin, 2012; New Economy Magazine, 2013). The MFIs can be viewed as the “bank for the poor” that solves most of the social problem, thus it is not difficult to understand

why it was recognized as a powerful instrument to contribute to the society development as a whole.

The World Bank (2015) suggested that microfinance must be considered as one of the national agenda to address the issue of poverty. It is a global needs and an agenda being prioritized by many countries. The figures involved are huge, for example, the World Bank has an active lending portfolio for financial inclusion of USD4.3 billion (World Bank, 2015) and the International Finance Corporation (IFC), a member of the World Bank Group, has reached 41 million micro loans through its financial institutions and over 1 million SMEs in 2013 (World Bank, 2015d). This indicates that microfinance has become the channel for the World Bank to address the issue of poverty.

Although the microfinance industry had received huge attention, the performance of the MFIs was less being documented (Mersland & Strøm, 2014; Boateng, Boateng, & Bampoe, 2015). Such fact had become the motivator for this study. The performance of the MFIs ensures the sustainability of the microfinance industry and the continuation of the activities of combatting poverty, especially in the developing countries where the availability of funds becomes a major issue (World Bank, 2015b).

1.2 Background of the Study

In the first essence, it was deemed necessary to provide a brief definition of microfinance. Tracing back in 1999, the concept of microfinance was viewed as the

provision of financial services, covering loans, savings, insurance and money transfer to the poor who are out of their financial services to improve their standard of living (Ledgerwood, 1999). Several reasons for the inability to access finance are cited such as (i) the very poor condition of the people, (ii) the illiteracy and (iii) the remoteness of their living places (Ledgerwood *et al.*, 2013). Hartarska (2005) suggests a similar concept when he proposes microfinance as a provision for small loans and other financial services to the poor people. Kyereboah-Coleman and Osei (2008) offer a broader understanding of microfinance mentioning that microfinance also provides other services such as insurance and payment services, in addition to the provision of financial services to low income customers.

The services of MFIs should not only be limited to the financial services. According to the Consultative Group to Assist the Poor (CGAP) (2013), besides the financial service, the MFIs also provide non-financial services such as education, health services, vocational training and technical assistance. Šafránková and Srnec (2010) and Boateng *et al.* (2015) assert that the MFIs have to adopt the non-financial interventions such as supporting the local groups and enterprises, providing various types of training in business and financial skills, and focussing on the business development services, which are very important for utilizing finance. Lanao-Flores and Serres (2009) emphasize that implementing both financial and non-financial services are advantageous and can lead to the sustainability and good portfolio quality, besides achieving the primary goal of fighting poverty and unemployment. This insight pinpoints that providing both financial and non-financial by MFIs are crucial for achieving the microfinance mission.

According to Khavul (2010), the modern microfinance concept is introduced by Professor Mohammed Yunus, the Nobel Peace Prize recipient in 2006 for his contribution to the establishment of the Grameen Bank, a bank with the objective of fighting poverty through micro loans. His revolutionary achievement was quite amazing as he tried out his belief that “*the main important cause of poverty is the inability of the poor to have access to financial institutions*” by using his pocket money of USD27 to lend it to 42 poor village women without collateral. The success of this financial assistance scheme has led to the birth of the Grameen Bank, where as in 2011, the loan portfolio of the bank has increased from USD27 to USD11.35 billion. It has a client base of 8.35 million poor people with 2,565 branches covering up to 81,379 villages and employs 22,124 workers (Grameen Bank, 2011).

The success of Grameen Bank, as a microfinance institution, had triggered for the new establishment of MFIs around the globe. According to Lützenkirchen, Weistroffer and Speyer (2012), it is estimated that there are more than 10,000 MFIs worldwide. 3,652 of the MFIs provide reports to the Microcredit Summit Campaign claiming that they serve 205 million clients. They also mentioned that 2,000 MFIs report to the Microfinance Information Exchange (MIX) Market serving 100 million clients. It is argued here that the actual number for today was much more as the MFIs was seen as a very effective approach in fighting poverty and meeting the huge demand for micro financial services.

From the above discussions, it is clear that the microfinance system is proven as the most promising and effective instrument to handle poverty. Many researches have supported this fact, for example, Ghalib, Malki and Imai (2011) also emphasized that

the MFIs through its financial and non-financial activities had improved the life quality of the poor significantly, be it in income, health care, clothing, water and sewage. A more recent study by Boateng *et al.* (2015) revealed the same findings, claiming that the effect of microfinance is significant on specific social and economic dimensions such as income levels, education, family growth as well as participation in social and religious activities among the MFIs clients. This shows that microfinance activities can increase the income and help low income people to get out of poverty. Thus, it is evident that microfinance is a very essential tool in fighting poverty and unemployment.

With regard to women empowerment, Kato and Kratzer (2013) revealed that there was a significant improvement in the economic performance and the role of women as the clients to the MFIs. They have more control over savings and income generated from the business, greater role in decision-making, greater self-efficacy and self-esteem, and greater freedom of mobility and increased activities outside the home (Jegade, Kehinde, & Akinlabi, 2011). They found that there was a significant difference in terms of income between MFIs members and non-members of MFIs. They suggested that the income of MFIs clients has significantly increased and changed their economic status. They also suggested that the microfinance is a very effective strategy to combat poverty and a viable tool for providing financial services to the poor.

Although microfinance had been proven to be an effective poverty alleviation tool in the form of improving the life quality of the customers and generating income, the MFIs performance was weak and underperformed in terms of financial sustainability

and meeting the demands of clients (Roy & Goswami, 2013). According to D'Espallier, Hudon, & Szafarz (2013), only 23% of the MFIs worldwide have survived without subsidies. This is a critical situation as argued that the majority of MFIs cannot survive unless they received subsidies and grants from governments and donors to cover operating and financing expenses (Hermes, Lensink, & Meesters, 2011; Assefa, Hermes, & Meesters, 2013). This is a critical situation that threatens the sustainability of MFIs and a continuous support in providing their services to the poor.

More importantly, the demand for financial services is huge which maximizes the important role of MFIs as the micro financial providers to the poor. According to the 2011 World Bank statistics, there are 2.5 billion poor people who are out of any types of financial services (Ledgerwood *et al.*, 2013). It was also stated that only 3% to 5% of the credit demand is being fulfilled (Oehri, Fausch, & Liechtenstein, 2008). In short, it seems that the MFIs experienced poor performance to be commercially viable or donor dependent and to meet the huge demand for financial services in the global context.

In Yemen, there is a remarkable increase in microfinance commercialization markets and its related activities. Abdel Baki, Zain, and Cordier (2010) suggested that this trend has made the MFIs become more competitive in the Yemeni financial industry. However, the MFIs were also observed to be very weak and underperforming in terms of financial sustainability and outreach (Al-Shami, Majid, Rashid, & Hamid, 2013). According to Yemen Microfinance Network report (YMN) (2012b), only two out of eleven microfinance providers are financially sustainable. It was also reported

that the financial self-sufficiency is about 97%, operational self-sufficiency is 98% and return on assets (ROA) is 0.3%. These scores were low compared to the Arabic benchmark of 119%, 107% and 2.4%, respectively (Cordier, Abdel Baki, & Khaled, 2010). The Economist Intelligence Unit (2013) had also reported that only 7% of Yemenis have bank accounts and there is a huge demand for financial services that make microfinance intervention needed. Alshebami and Khandare (2014) mentioned that more than 2 million potential clients are in need of microfinance services in Yemeni market and only 3% of this market is covered. This indicates that the Yemeni MFIs share the same issues with the other MFIs in the globe failing to achieve sustainability and providing financial services such as loans and savings.

It was argued that the failure of the Yemeni MFIs can be attributed to the lack of market-oriented products and improper strategies (Alshebami & Khandare, 2014). The service quality introduced by MFIs was not good enough to meet the clients' demands because they adopt the concept of "one size fits all", in the matter of services rather than providing a wide range of services (Burjorjee & Jennings, 2008). The interest rate is also the highest in the Arab region, for example, for 2008; it was 11% compared to 1.90% in Palestine, 3.70 % in Morocco, 6.70 % in Sudan and 7.60 % in Jordan (Cordier *et al.*, 2010). According to IFC report (2007), the lack of sufficient information technology (IT) systems, lack of qualified and well-trained staff and the absence of professionalism and appropriate strategies were amongst the obstacles faced by the MFIs to reach target clients. Mansour (2011) also mentioned several issues facing Yemeni MFIs such as weak institutional capabilities, weak information system and lack of strategic outlook. This indicates that the lack of

customer-focused strategies and sufficient IT system are among the reasons behind the poor performance of MFIs in Yemen.

Among the most well-known organization strategies, total quality management (TQM) and market orientation (MO) had been confirmed to provide a basis of competitive advantage for firms (Irfan & Kee, 2013; Rojas-Méndez & Rod, 2013; Kaur & Sharma, 2014; Julian, Mohamad, Ahmed, & Sefnedi, 2014). It was also argued that there is a mutual need for these two constructs to be employed together as they complement each other because they focus on the customers' demands and satisfaction (Demirbag *et al.*, 2006; Wang & Chen, 2011, Wang, Chen, & Chen, 2012). Therefore, organizations including MFIs need to adopt customer-oriented and innovative strategies such as TQM and MO in order to satisfy quality demanding customers and face the challenges of the fierce competition.

According to Ghobakhloo, Hong, Sabouri, and Zulkifli (2012), IT is a pivotal factor to be utilized by a firm in its operations and strategies. More specifically, combining IT capability with other organization strategies is a prerequisite for better performance and sustainable competitive advantage (Liang, You, & Liu, 2010; Homaid, Minai, & Rahman, 2015). Some scholars such as Khanam, Siddiqui and Talib (2013) stated that the application of both IT and TQM strategy by organization help in providing better products and services and achieving the quality outcomes. Moreover, Brah and Lim (2006) pointed out that IT and TQM complement each other to improve organization performance.

With regard to modelling IT with MO, Zhu and Nakata (2007) highlighted that IT capability should be a mediator in the link between MO and organization performance. They stated that IT capability is an important facilitator of MO tasks including generating information about customer, sharing customer information and analyzing customer information. Borges, Hoppen and Luce (2009) also point out that IT capability facilitates the MO tasks including generating, disseminating information and responding to the customers' demands which results in effective MO behaviours and superior performance. In other words, market-oriented organization cannot employ MO tasks and ensure the success unless they establish sophisticated IT capabilities. Therefore, the relationship of TQM, MO and IT capability with the MFIs performance were of the concern within the context of this study.

The prior discussion highlights the significant role of microfinance in fighting poverty and the efforts of international organization and governments to address poverty issues. It also presents the MFIs performance issues in the global and Yemeni context and the factors associated with the MFIs performance. The problem statement and the gaps in the literature are discussed in the following section.

1.3 Problem Statement

The issues of performance and sustainability are crucial for firms, organizations and institutions. The sustainability of the MFIs is a prerequisite for a continued support in providing the poor people to generate income. Thus, there is a need to examine the factors contributing to the performance of the MFIs to ensure its sustainability.

According to Pakdel and Monroy (2010), the study of the MFIs performance is of great importance as early insights show that there is a scarcity of studies being carried out on them, particularly in the Arab region (Ben Abdelkader *et al.*, 2012).

Central to the performance of an institution are the factors contributing to it (Al-Dhaafri, Yusoff, & Al-Swidi, 2013). In the context of microfinance, there is a lack of knowledge regarding the factors influencing the performance of the MFIs (Nanayakkara & Iselin, 2012; Homaid *et al.*, 2015). Many scholars have tried to examine factors contributing to organizational performance in business field, such as TQM (Jiménez-Jiménez, Martínez-Costa, Martínez-Lorente, & Rabeh, 2015), MO (Boso, Story, & Cadogan, 2013) and IT capability (Ong & Chen, 2013). For the MFIs, there is no exclusion and the associated factors need to be revealed within the context of microfinance.

Microfinance agenda is quite different from the other organizations as it is concerned with financial and social objectives, which involve different kinds of performance measures. This fact is fully supported and highlighted by other researchers such as Armendariz, D'Espallier, Hudon, and Szafarz (2013), Kipesha (2013), Nanayakkara and Iselin (2012), and Roy and Goswami (2013). This shows that the study on the performance of the MFIs is much needed.

Within the context of how TQM affects the performance of an organization, the finding related to TQM and organizational performance had turned out to be inconsistent (Kaynak, 2003; Nair, 2006). The studies that adopted TQM as a single construct confirm on the existence of significant direct relationship with organization

performance (Lam, Lee, Ooi, & Lin, 2011; Iqbal, Khan, Nadeem Talib, & Khan, 2012; Wang *et al.*, 2012; Munizu, 2013; Ul Hassan *et al.*, 2013; Jiménez-Jiménez *et al.*, 2015; Homaid *et al.*, 2015; Al-Dhaafri, Al-Swidi, & Yusoff, 2016). However, there are studies that have revealed the insignificant direct effect (Kober, Subraamanniam, & Watson, 2012; Akgün, Ince, Imamoglu, Keskin, & Kocoglu 2014). The different findings regarding the relationship indicate the need for more research works to be conducted in this area (Nair, 2006; Meftah Abusa & Gibson, 2013). The current literature also shows that the majority of studies concerning TQM and organization performance linkage in the context of microfinance is too limited (Homaid *et al.*, 2015) though it was argued that performance of MFIs could also be improved if they implement TQM (Khaled, 2011). Therefore, this study responds to these calls to bridge this gap in the literature.

According to Salaheldin (2009), identifying TQM practices and ranking them is a prerequisite of the TQM implementation and success, particularly for each industry as each industry has its own unique characteristics (Talib & Rahman, 2010). Moreover, empirical studies reported the significant link between TQM practices and organizational performance (for examples, Idris, 2011; Alnasser, Yusoff, & Islam, 2013; Irfan & Kee, 2013), whilst others reported only some practices significantly influence organization performance (for examples, Fotopoulos & Psomas, 2010; Valmohammadi, 2011; Jaafreh & Al-abadallat, 2012; Zehir, Ertosun, Zehir, & Müceldilli, 2012; Talib, Rahman, & Qureshi, 2013; Mehmood, Qadeer, & Ahmed, 2014). This indicates that there are still many questions regarding TQM to be answered, particularly the practices of TQM and their relationship with organization performance (Mehra & Ranganathan, 2008; Valmohammadi, 2011). However,

examining this relationship was too limited, if any, in the context of microfinance. Therefore, the significance of identifying TQM practices in microfinance industry, inconsistent findings regarding this relationship and the lack of studies in this industry make the empirical evidence needed to fill this gap for deeper understanding and more generalization of the research findings.

With respect to the effect of market orientation (MO) on the organization performance, MO literature review also reports the conflicting findings regarding this relationship. Most of the empirical studies reported that MO, as a single construct, has been claimed to be significantly related to organizational performance and was presumed to contribute to organizational long-term success (for examples, Kai & Xiaofan, 2010; Wang *et al.*, 2012; AL-Dmour, Basheer & Amin, 2012; Zebal & Goodwin, 2012; Altuntaş Semerciöz, & Eregez, 2013; Boso *et al.*, 2013; Taleghani, Gilaninia, & Talab, 2013; Protcko & Dornberger, 2014; Al-Ansaari, Bederr, & Chen, 2015). However, there were studies that reported this relationship is not straightforward (for examples, Ghani & Mahmood, 2011; Qu, 2013). The inconsistent results concerning MO-organization performance link combined with the scarcity of studies in microfinance sector indicates the existence of a gap in the literature. Therefore, empirical evidence is necessary to fill this gap.

In regard to study MO as a multi-dimensional variable, Shin (2012) suggests that for better understanding of the MO and performance link, studies should focus on the impact of each distinctive dimension of MO as a separate construct rather than studying MO as a whole. Following this stream of research, the studies of Hamadu, Obaji and Oghojafor (2011), and Julian, Wangbenmad, Mohamad, and Ahmed

(2013) have shown a significant effect of MO dimensions on organization performance. However, Untachai (2008), Chao and Spillan (2010), Al-Dmour *et al.* (2012) and Keelson (2014) found only certain dimensions of MO are associated with organizational performance. Moreover, it was argued that examining the link between MO and organization performance was a well-studied topic while studying such relationship at the disaggregated level is missing (Chao & Spillan, 2010). Therefore, the call for further research works, the conflicting results concerning this relationship and the lack of research in the context of microfinance show the urgent need to fill this gap.

For the inclusion of IT capability, it is suggested that IT capability was considered as a key element in an organization to foster performance (Liu, Zhao, Wang, & Xiao, 2013) and a source of competitive advantage (Bhatt & Grover, 2005). Although many studies in the field of IT have proved that IT capability has a direct impact on organizational performance (for examples, Bi & Zhang, 2008; Yu & Xin-quan, 2011; Ong & Chen, 2013, Karimi Mazidi, Amini, & Latifi, 2014), there are some researchers in the field of management claimed that IT capability does not have a direct influence on the firm performance (for examples, Tippins & Sohi, 2003; Zhu & Nakata, 2007; Pérez-López & Alegre, 2012). According to Kmiecziak, Michna and Meczynska (2012), the results indicating the relationship between IT capability and organization performance is confusing. Thus, the conflicting findings and the limited research work regarding the performance in the microfinance sector indicate the need to include IT capability in the study as a variable directly affecting the MFIs performance.

In furthering the discussion to highlight more about the problem statement of this research, the perspective of organizational capability was covered. Prajogo and Hong (2008), Yusr, Othman and Mokhtar (2012), and Jones and Grimshaw (2012) argued that the TQM practices are effective for quality implementation success and they can build a wide range of organizational capabilities. Specifically, the TQM has been found to affect significantly the organization capabilities, such as technological innovation capability, marketing capability, learning capability and both exploitation and exploration capabilities (Yusr, Mokhtar, & Othman, 2014; Yusr *et al.*, 2012; Akgün *et al.*, 2014; Jiménez-Jiménez *et al.*, 2015). Given this importance and the suggestion by Yusr *et al.* (2012) who call for further research works to study the effect of TQM on organizational capabilities as such studies to examine the impact of TQM on organization capabilities are crucial. Therefore, this study attempts to examine the impact of TQM on IT capability as studies on these two constructs are too limited, if any, in the literature and in the context of microfinance are even more limited.

Similarly, the market orientation (MO) should be modelled with the capabilities approach in order to identify the key capabilities the organization should develop to be market-oriented (Foley & Fahy, 2009), for example, the IT capability. Whilst the MO had been found to affect positively and significantly a number of organization capabilities such as management capability and customer-linking capability (Hooley, Greenley, Cadogan, & Fahy, 2005), marketing capabilities (Murray, Gao, & Kotabe, 2011; Ngo & O'Cass, 2012), dynamic marketing capability (Wang, Hu, & Hu, 2013) and external capabilities including market-sensing capability and customer-linking capability (Fang, Chang, Ou, & Chou, 2014), there is no previous management

research that includes the effect of MO on IT capability in discussions particularly in the context of microfinance sector. This shows the existence of a gap in the literature for the present study to fill up.

Theoretically, it was assumed that the organization capabilities acquire, integrate and deploy resources in a specific way that better fits the market environmental opportunities and consequently obtaining a competitive advantage (Eisenhardt & Martin, 2000; Morgan, Vorhies, & Mason, 2009). Moreover, the literature indicates that the relationship among organization capabilities, resources and performance is complex and capabilities can be used as mediators in the relationship between organization resources and performance (Lu, Zhou, Bruton, & Li 2010). Empirically, organization capabilities such as learning capability and exploration capability have been proven to be full mediators on the link between TQM and organization performance (Akgün *et al.*, 2014; Jiménez-Jiménez *et al.*, 2015) and marketing capability and innovation capability are full mediators on the relationship between MO and organization performance (Murray *et al.*, 2011; Huhtala, Sihvonen, Frösén, Jaakkola, & Tikkanen, 2014). This indicates that the estimation of organization capabilities (IT capability) as mediators on the relationship between organization resources (TQM and MO) and organization performance is theoretically and empirically established.

According to Pebrianto (2013), IT capability is an essential organization capability by which information can be managed and organization resources are incorporated resulting in superior performance. Moreover, Homaid *et al.* (2015) proposed that IT capability should be combined with other organization strategies such as TQM and

MO to enhance the performance of MFIs and obtain sustainable competitive advantage. Despite the crucial role of IT capability to acquire, integrate and deploy organization resources in gaining a competitive advantage, it has been widely ignored especially in TQM and MO literature. Therefore, this study attempts to fill this gap by examining the mediating effect of IT capability on the relationship between TQM and MO and the MFIs performance. The emphasis on the model is in line with the premises of resource-based view (RBV) theory as the guiding theory and supported by the dynamic capability theory and the complementarity theory. This shall provide more evidences in understanding the contributing factors to the Yemeni MFIs performance in the context of least developed countries.

1.4 Research Questions

Furthering the background of the study and the problem discussed in the previous sections, this study was mainly designed to address the issue of the factors influencing the MFIs performance within the context of total quality management (TQM) and marketing orientation (MO) and the role of information technology (IT) capability as a mediator on the relationship between both TQM and MO and MFIs performance. The details of the research questions are stated as follows:

1. What is the effect of TQM on the MFIs performance?
2. What is the effect of MO on the MFIs performance?
3. What is the effect of IT capability on the MFIs performance?
4. What is the effect of TQM on IT capability?
5. What is the effect of MO on IT capability?

6. Does IT capability mediate the relationship between TQM and the MFIs performance?
7. Does IT capability mediate the relationship between MO and the MFIs performance?

1.5 Research Objectives

Based on the mentioned research questions, the objective of this study is set to reveal the factors influencing the performance of MFIs within the context of total quality management (TQM), marketing orientation (MO) and information technology (IT) capability. It further tests the mediating role of IT capability on the relationship between TQM and MO towards the performance of MFIs. In this view, it is presumed that conducting these tests is the first attempt to investigate such situations in the MFIs. The objectives of this study are detailed as follows:

1. To examine the effect of TQM on the MFIs performance.
2. To examine the effect of MO on the MFIs performance.
3. To examine the effect of IT capability on the MFIs performance.
4. To examine the effect of TQM on IT capability.
5. To examine the effect of MO on IT capability.
6. To examine the mediating effect of IT capability on the relationship between TQM and the MFIs performance.
7. To examine the mediating effect of IT capability on the relationship between TQM and the MFIs performance.

1.6 Significance of the Study

The study addresses different related issues on the influencing factors to the MFIs performance. Generally, this study contributes to all stakeholders including researchers, practitioners and policymakers. The originality, theoretical and practical implications of the study are presented as followed.

This study contributes significantly to the body of knowledge when examining the interaction of TQM, MO and IT capability on the MFIs performance in one model. Most studies regarding the variables of the study have been carried out independently, as a separate identity and individually so the attempt to examine these variables together in one model is a fresh attempt to provide new insights. Moreover, there is a scarcity of studies regarding such relationships in the context of microfinance as it focuses on both business and social objectives.

This study also responds to the call for further examining the effect of TQM and MO as multidimensional constructs on the MFIs performance. It is to obtain a deeper understanding and to minimise the gaps in the literature. This study responds to the urgent need to link the organization resources and capabilities by examining the effect of TQM and MO on IT capability. Literature review reveals that the link among organization resources, capabilities and performance is still unclear and the capabilities can be used as mediators in the mentioned relationships (Lu *et al.* 2010). Therefore, this study makes an endeavour to shed light on this issue by investigating the mediating role of IT capability on the relationship between TQM and MO with MFIs performance.

This study attempts to test on the theoretical framework of the study in the context of service organizations (microfinance), where limited research works are carried out (Brau & Woller, 2004). Literature review reveals that the majority of studies on microfinance have been carried out in the Eastern and Southern Asia and Latin America whereas there are some paucity of studies in the Middle East and North African region (MENA). Thus, it demands more investigations (Pakdel *et al.*, 2010; Ben Abdelkader *et al.*, 2012).

Moreover, it had been confirmed that the majority of empirical studies related to TQM, MO and IT capability were conducted in the developed countries such as USA and UK. However, there was a scarcity of studies in developing countries and specifically in MENA countries. Among the researchers and writers confirming this are Najeh and Kara-Zaitri, (2007), Al-Amri and Bon (2012), Al-Swidi and Mahmood (2012), Shin and Aiken (2012) and Fening, Amaria and Frempong (2013). This study provides the potential researchers of the basic knowledge on how TQM and MO are supported by IT capability to reinforce the MFIs performance in the context of the least developed countries, opening the door for further investigation in this area. Moreover, it validates the measurement of the study variables in a different context utilizing the PLS-SEM software with SPSS software to validate the measurement and structural model with a graphical representation of the results.

This study contributes significantly to the practitioners as the findings of this study provide them a clear understanding on the factors affecting the MFIs performance in Yemen, which was in line with the country's vision 2025. With certain evidence on the factors influencing the MFIs performance, the practitioners realize the

importance of the drivers for better performances. The MFIs managers have better perspective and views on the organization resources such as TQM and MO and their impact to develop and enhance organization capabilities such as IT capability.

By exploring the important role of IT capability, this study convinces the MFIs managers to the fact that adopting organizational strategies such as TQM and MO are more effective and sufficient when they are combined with IT capability. This study scientifically provides the MFIs the trust to take into consideration the role of IT capability to support TQM and MO for better performance. Furthermore, this study is useful for policy makers, providing a roadmap to make necessary interventions for the development of MFIs such as tax exemption payment on IT systems, offering special training including quality principles and marketing skills and IT concepts in the curricula. This goes in line with the Yemeni government initiatives and strategies that aim to fight poverty and improve the economy of the nation.

1.7 Scope of the Study

This study addresses the MFIs performance and the focus is in the least developed (developing) countries where the MFIs are commonly found. Yemen is selected as the country where the data collection takes place as the microfinance agenda in this country is still fresh and relevant. As the microfinance agenda is still new in this country, the number of establishments is accurate and data is made available.

The research framework of this study was tested based on the data collected from the Yemeni microfinance sector utilizing a quantitative cross-sectional approach. In

general, there are 16 MFIs, which are members of the Yemen Microfinance Network (YMN), operating in 166 branches in Yemeni governorates. The current study distributed the questionnaire to the entire population (i.e. 166 branch managers) as they have been recognized to be in the executive positions and the best respondents to describe organization strategies (Al-Swidi & Al-Hosam, 2012).

The focus is on the overall performance of the MFIs. The contributing factors are the TQM practices and the MO variables. Both contributing factors are examined together to determine the effect on the MFIs performance. The other variable taken into consideration, which is the IT capability, is positioned as the mediating variable to the relationship between both the TQM practices and the MO variables with the MFIs performance.

1.8 Organization of the Thesis

The current thesis comprises five chapters. Chapter one presents the introduction chapter, consisting the background of the study, problem statement, research questions, the objectives of the research, the significance of the study, the scope of the study and the organization of the thesis.

Chapter two reviews the microfinance sector in Yemen and related topics such as an overview of economy, the directions of microfinance, current state of microfinance sector and the importance of MFIs improvement in Yemen. It also explains the theoretical review on the MFIs performance specifically on the concept of microfinance, organizational performance, the MFIs performance and performance

measurement used in the study. It then presents a review on the relationship of the main variables with MFIs performance, relationships among the variables and underpinning theories.

Chapter three describes the methodology of the study, including research design, research framework, hypotheses development, population and sampling, unit of analysis and measurement, questionnaire design, pilot study and data analysis techniques. Chapter four presents the data analysis and the key findings of the study. Finally, chapter five highlights the implication of the findings, recommendations and suggestions for future research works.



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides an extensive review on the literature related to microfinance in Yemen, microfinance institutions (MFIs) performance and the key constructs of the study. The first section provides an overview about microfinance in Yemen and the related topics such as economy of Yemen and the strategic directions of microfinance in Yemen. It also highlights the current state of microfinance industry and the importance of MFIs performance improvement in Yemen. The second section deals with the theoretical review on MFIs performance by discussing the concept of microfinance, providing outlines of the organizational performance, reviews on prior studies of the MFIs performance and proposes a measurement performance used in this study. The third section presents the review on previous studies regarding TQM and MO, IT capability and the relationship with MFIs performance. Then, review on the relationship of the study variables and highlighting the rationality of the mediating effect of IT capability. The last section discusses the theories that cover the variables of this study.

2.2 Microfinance in Yemen

In general, the microfinance sector has proven to be the most important tool to fight poverty through providing different services to low income people so that the MFIs performance is crucial to continue serving the poor people. The Yemeni

microfinance industry has provided financial services to the poor who are active micro entrepreneurs so that they can raise their economic status and their standard of living (Mansour, 2011). The significant role of microfinance in Yemen is inevitable towards the economy and nation development due to high rate of poverty and unemployment. Moreover, the formal banking system seems unable to provide financial services for the poor people (Al-Swidi & Mahmood, 2011). This makes the microfinance sector become the leading financial provider in Yemen.

2.2.1 Overview of Yemeni Economy

Yemen was considered as one of the poorest and least developing countries in the Arab region (Al-Batuly, Al-Hawri, Cicowicz, Lofgren, & Pournik, 2012). The people in Yemen live under the poverty line which rose to 54.5% in 2012 from 42% at the end of 2011 (Engelke, 2012). The population is about 22 million with annual population growth rate of 3.6% and this was considered as one of the highest population growth in the world (Bennett, Duncan, Rothmann, Zeitlyn, & Hill, 2010). The unemployment reached 14.6% in 2009 (World Bank, 2015a), and it was expected to worsen as the political situation has not been stable since the 2011 crisis until now in 2016.

According to the World Factbook (2012), Yemeni economy was mainly dependent on the oil sector, which was estimated to cover almost 25% of the GDP and 70% of government revenue. The agriculture sector was estimated to constitute almost 7.9% of GDP and the industry covers 40.6% of GDP. According to Al-Batuly *et al.* (2012), oil reserves were expected to be depleted after one decade. Thus, the Yemeni

government had tried to adopt some policies and procedures to diversify economy by fostering other sectors and foreign direct investment. Table 2.1 summarizes some of the major economic indicators of Yemen from 2006-2011 as follows.

Table 2.1
Selected of some Major Yemeni Economic Indicators

Indicator /Year	2006	2007	2008	2009	2010	2011
Growth of GDP %	3.2	3.3	3.6	3.9	7.7	-10.5
Inflation(% Change)	10.8	7.9	19.0	5.4	11.2	16.4
Exports of goods and services (Growth %)	15.0	-2.0	29.0	-7.0	36.0	...
Imports of goods and services (Growth %)	9.0	11.0	58.0	0.0	6.0	...
Lending spread	5.0	5.0	5.0	7.3	5.0	...
Unemployment (% labour force)	15.7	15.4	14.0	14.6

Source: World Bank, 2015a

To this end, the Yemeni people were considered to be the poorest compared to the other Arab countries in the region (Yemen Country Profile, 2008). Yemeni economy had confronted several problems not only the declining in oil resources, but also political instability, corruption, and some related problems to business start-ups that make it difficult to revive it in the short term.

2.2.2 The Directions of Microfinance in Yemen

As a result of the poor economy of Yemen, strategic vision 2025 had been introduced by the Yemeni government aiming at reducing the food poverty percentage to 50% by 2015 and further eliminating it perfectly and reducing the poverty percentage to 10% by 2025. To achieve this goal, many initiatives and strategic plans have been introduced to create new job opportunities and in

developing different parts of the country. Among these strategies and initiatives, the Economic and Social Development Plan (ESDP) and poverty reduction strategy, launched in 2002, had focused on the microfinance sector as the main strategy to fight poverty. These two initiatives aimed at realizing the economic growth of 5.5% annually, reducing poverty rates, creating new jobs, and ensuring social welfare and economic stability (Strategic Vision 2025).

Since 1995, the Yemeni government with the cooperation of donors who were interested in Yemen development, had established funds such as the Social Welfare Fund and the Social Fund for Development and a number of other government and non-government programs and projects. The objectives of these funds and programs are to create job opportunities by means of adopting numerous approaches including deprived groups. For example, the strategy of SEDF concentrates on the development and implementation of new products (Islamic banking product, leasing, indirect consumer loans, including housing and loan products for start-ups) and increasing its outreach through setting up new branches and improving its overall lending procedures (IFC, 2007).

Furthermore, Social Fund for Development (SFD) is involved mainly with women's rights, women's empowerment and gender equality in all its programs in cooperation with the German Development Bank, Kreditanstalt für Wiederaufbau (KfW). The main objective of these strategies is to make the SFD more effective in activities related to gender equality promotion and women empowerment. Here, again the Microfinance becomes the main tool for achieving the strategies by targeting poor women as the microfinance clients; SFD can develop their skills in improving

relationships within the families and children's education besides generating income for the family (Burjorjee & Jennings, 2008).

To conclude this section, it was evident that the government of Yemen has taken many initiatives to reduce poverty rate, create new job opportunities and improve food security levels through adopting several development policies and programs. One of the most important mechanisms to achieve these objectives is to support microfinance projects and programs in order to provide credit and thus enable the poor particularly the rural women to have their own projects. The microfinance projects are viewed as an important mechanism to develop the economy and the nation.

2.2.3 Current State of MFIs in Yemen

Microfinance industry was a recent phenomenon in Yemen and it was considered at its infancy stage providing financial services to the poor people so as to raise their economic status and standard of living (Alshebami & Khandare, 2014). The legal status of these institutions was classified into four legal entities, namely programs, foundations, banks and companies (YMN, 2012a). The programs are small, consists not more than 2 or 3 branches and supervised by the NGOs. They were licensed under the Ministry of Social Affairs. The foundations were characterized as quite large, consist of several branches across several cities and have the Board of Members or Trustees. They were licensed under the Ministry of Labour and Social Affairs. The banks refer to the SME banks, the specialized banks that provide a wide range of financial services compared to the limited services offered by programs and

foundations. For example, they offer voluntary savings, money transfers, and currency exchange. They are supervised directly by the Central Bank of Yemen. The last one, the companies provide the same financial services offered by programs and foundations, however, they were not allowed to provide some of those distinctive services offered by banks such as voluntary savings. All these four legal entities fall under the responsibilities of the Ministry of Industry and Trade (Mansour, 2011).

Currently, the microfinance industry had witnessed a major and crucial evolution in Yemen, representing the emergence of new and large MFIs players in the microfinance MF industry in Yemen (Mansour, 2011). These institutions provide more inclusive financial services rather than the traditional loans with limited savings and small size programs. These MFIs have started to provide loans, not only to individuals who are poor, but to the small firms' owners who need financing.

In October 2008, the establishment of Al-Amal Microfinance Bank, the first bank specialized in small and micro financial services, proved that the MFIs have expanded their services though remains actively serving the micro loans to the poor people. AlKuraimi Exchange Company had also been involved in the small and microfinance industry, registered with the Central Bank of Yemen on June 2nd 2010 as AlKuraimi Islamic Microfinance Bank. In fact, it is the first microfinance bank licensed under the new Microfinance Law No. 15 issued in 2009 (YMN, 2012a; Mansour 2011).

As of December, 2013, there were 16 members under the Yemen Microfinance Network (YMN) (The details are provided in appendix 4). There were 11 MFIs

members reporting to YMN and representing more than 90% of the microfinance industry in Yemen (YMN, 2012a). These institutions are serving more than 70,000 borrowers and 80,000 savers in total. The total outstanding loan portfolio is about 4,074 million YR equivalent to USD19 million and the total number of loans dispersed is 71,277. The detailed information about the performance of the 11 MFIs institutions as reported in December 2012 is given in table 2.2 below.

Table 2.2
Yemeni Microfinance Institutions (as in December 2012)

No	MFIs	No. of active borrowers	Female active clients as a % of total active clients	No. of voluntary depositors	No. of loans disbursed	Value of loans disbursed (Million YR)
1	Al-Amal Microfinance Bank	26,151	54%	44,336	58,070	3,172
2	National Microfinance Foundation	12,791	94%	N.A	101,466	4,363
3	Nama MF Development Program	7,160	40%	1,682	54,869	3,146
4	Self-Help Group Program–Abyan	-	-	-	-	-
5	Aden Microfinance Foundation	6,666	96%	N.A	45,262	1,927
6	Tadhamon Microfinance	5,437	44%	N.A	21,831	4,295
7	Al-Awa'el Microfinance Company	3,224	85%	NA	51,615	1,725
8	Sana'a Microfinance (Azal) Social Institution for	4,927	55%	N.A	36,121	1,223
9	Sustainable Development	1,472	87%	N.A	16,490	1,582
10	Wadi Hadhramaut Credit & Savings	1,618	13%	3,118	11,771	800
11	Al-Kuraimi Islamic Microfinance Bank	1,829	2%	24,270	3,769	1592
	Total	71,275	52%	73,406	401,264	23,825

Source: Yemen Microfinance Network, 2012b

2.2.4 The Importance of MFIs Performance Improvement in Yemen

Beyond its main role of providing loans to the poor people, the MFIs also play a major role in supporting SMEs development through providing loans to

entrepreneurs. This role is possible as the SMEs are also having difficulties in accessing financing in Yemen (Mansour, 2011) as an important player for economic growth and development (Beck & Demirguc-Kunt, 2006). The SMEs can create new employment at a low capital cost where the poor people can work.

The SMEs are generating a high rate of employment growth since the labour intensity working in SMEs accounted for more than 90% of the total companies in most of the economies around the globe (Christopher, 2010). Furthermore, empirical studies have stated that SMEs contribute to over 55% of GDP and over 65% of total employment in high income nations. SMEs also account for over 60% of GDP and over 70% of total employment in low income countries, while they contribute about 70% of GDP and 95% of total employment in middle income countries (Abdul Subhan, Mehmood, & Abdul Satar, 2013). In Yemen, SMEs constitute about 99.6 % of total enterprises, more than 7.2% of the GDP of the country, creating more than 485,000 employments (MOPIC, 2004). According to SFD (2010), the MFIs could increase the income and economic activity of the beneficiaries by 50%. Thus, helping the SMEs can be viewed as helping the poor people. This is indirect access to loan for the poor people.

Notwithstanding the significant role of SMEs in Yemeni economy as a whole, the formal banking system has not played the assigned role to meet their financial needs (Al-Swidi & Mahmood, 2011). The information from the Yemen Country Profile (2009) suggests that the Yemeni regular banks are underperforming and underdeveloped to contribute significantly to economic growth. It is reported that only 7% of Yemeni people have a bank account and this is a small percentage

indicating that there is a huge demand for microfinance financial services (Economist Intelligence Unit, 2013). Moreover, the formal banking system in Yemen is not designed to meet the micro financial requirements rather they serve only large enterprises and well-known people in the country (Al-Swidi & Mahmood, 2011). As the main finance player, its performance is highly important to be improved, especially in the absence of formal banking system role in this field.

The increasing number of MFIs operating in the same area, focusing to serve the same market segments has made the business environment in the microfinance industry competitive. The competition has become tougher since all the institutions are operating in the same environment and introducing almost the same financial products and services. Thus, the MFIs are concerned about their performance. Moreover, the borrowers, as clients or customers, can choose the services that offer better deals. The nature of microfinance in financing poor people can be considered more challenging where the errors are very costly (Hermes *et al.*, 2011) and the products and services should be adapted to the environment rather than copying the same models (Alshebami & Khandare, 2014). As what is successful in one environment cannot be successful in another. With the growth of the industry, it is challenging to increase the capacity of these institutions and mitigate the risks. These are the challenges with regard to the performance improvement of the MFIs in Yemen.

Consequently, to achieve their development goals, the MFIs have to adopt quality, enhance internal resources and capabilities in order to be sustainable and to reach the target clients by being customer-centric. They need to raise their capabilities to be

able to face effectively the current major changing environment. In other words, MFIs have to adopt the innovative management interventions such as TQM, MO and IT capabilities to differentiate themselves from others and to create their own sustainable competitive advantage and enhance performance. The theoretical review on MFIs performance is discussed in the following section.

2.3 The Theoretical Review on MFIs Performance

2.3.1 The Concept of Microfinance

Microfinance refers to the provision of small-scale finance to low income or unbanked people (Ledgerwood, 1999; Hartarska, 2005; Lafourcade, Isern, Mwangi, & Brown, 2005; Kyereboah-Coleman, & Osei, 2008). It is viewed as a form of banking service that provides both financial and non-financial services to low income or unemployed people (Khan & Noreen, 2012). Moreover, currently it is seen as a variety of services providing financial inclusion to poor and low-income people engaged in livelihood and microenterprise activities (Tavanti, 2013).

Based on the above definitions, microfinance was not limited to the provision of small loans, which was known as microcredit. It was, rather, about the provision of a variety of financial and non-financial services. Thus, this study views microfinance as a provision of the financial services such as loans, savings, money transfer, insurance and it also includes non-financial services such as consultation and training to the low income people. Institutions that provide these services were referred as microfinance institutions and microfinance organizations. This was quite

similar to the definition provided by Ben Abdelkader *et al.* (2012) and Mersland and Strøm (2014).

According to Basu, Blavy, and Yulek (2004), the role of MFIs complements successfully the role of the formal financial system in providing a variety of financial services to the low income people. It was assumed that access to financial services enables the poor to be empowered by generating income that enables them to get out of poverty and reduce the exposure to any expected events (Logotri, 2006). These institutions were regarded as a crucial tool to combat and alleviate poverty through enhancing access to financial services (Kinde, 2012). In short, MFIs help in mobilizing financial resources through providing financial services such as finance, savings and non-financial services.

MFIs had played an important role in helping the poor people to invest in their capabilities (Hiatt & Woodworth, 2006), to overcome the drawback of micro businesses financing (Hartarska & Nadolnyak, 2008), to improve their standard living level and to provide them with a sense of social security (Ayuub, 2013). According to Cull, Davis, Lamoreaux and Rosenthal (2006), the MFIs facilitate to mobilize the abundant resources needed for economic development. In addition, the majority of long established MFIs have offered different financial services including housing loans, pension plan, social and business development services such as vocational training (Šafránková & Srnec, 2010).

It must be emphasized here that there is no general agreement on whether the MFIs have focused on the profitability or otherwise as some of them operate as non-profit

organizations. This is contrary to the normal belief as organizations see profit as a source of income to assist more poor people and attain sustainability. Ahlin and Jiang (2008) suggest that the effect of microfinance cannot be clearly realized unless the poor continue to be served by MFIs (Ahlin & Jiang, 2008). Thus, the MFIs are supposed to be seen as pure non-profit organizations but with different levels of emphasis on profitability, taking into consideration the whole benefits of stakeholders. In other words, MFIs should achieve better overall performance, taking into account the stated objectives and stakeholders benefits, which enable them to be an effective body or strategy in fighting poverty and unemployment.

2.3.2 Organization Performance

Basically, when looking at the management literature, it has been found that the performance of an organization was regarded as one of the major constructs in strategic management area (Combs, Crook, & Shook, 2005; Richard, Devinney, Yip, & Johnson, 2009). Both academicians and practitioners have carried out extensive research work on organizational performance exploring the antecedents, processes and other variables that can improve the organizational outcomes (Jing & Avery, 2008). In addition to that, what makes many researchers focus so much on this area is the practical importance of organization performance concept, which is always given attention by top management as it is related to the long term success of the organizations (Finkelstein & Hambrick, 1996).

There had been an extensive research conducted on organization performance, but there was no broad consensus among scholars on the specific definition for this

construct (Kirby, 2005). Consequently, the debate among scholars and practitioners about the most appropriate organizational performance measurement system has grown to become a key issue of discussion (Jusoh, Ibrahim, & Zainuddin, 2008). In addition to that, it becomes more difficult because the measurement of organization is changing over time (Hubbard, 2006). For example, Murphy, Trailer and Hill (1996) state that there are 71 different measures related to organizational performance, classified into eight (8) dimensions by taking into account both financial and non-financial measures. Therefore, there are many ways to look at the firm performance and each one has its own implications to measure organization performance (Hubbard, 2006). Shareholder theory and stakeholder theory are the most important and key references to be used as the bases for different measurement frameworks and models (Owen, 2006; Brown & Fraser, 2006).

During the 1980s era, the organization had been viewed to be owned by the shareholders so that the shareholder return was used to measure the overall organization performance (Hubbard, 2006). In fact, it was a predominant organization performance measurement system. It shows that the traditional performance models focus on financial measures which are widespread among the organizations (Demirbag *et al.*, 2006). They are easy to quantify the organizational performance and facilitate the comparison (Johannessen, Olaisen, & Olsen, 1999). They help managers to enhance performance by evaluating managerial performance, developing action plans and identifying problems and improvement opportunities (Zuriekat, Salameh, & Alrawashdeh, 2011). During this period, several financial measures have been used to measure the organizational performance such as return

on assets (ROA), Return on Investment (ROI) Return on Equity (ROE) and Earnings per Share (EPS) (Richard *et al.*, 2009).

However, certain financial measures had been criticized by scholars for their efficiency to measure organizational performance where many limitations have been identified. According to Tangen (2004), financial measures are not directly concerned with the organization's strategy and this may conflict with the strategic objectives. This leads to more pressures on managers for short-term results as they do not control the whole processes and they do not determine the quality cost (Ghosh & Wu, 2012). Not only these, they are easy to be manipulated and they were not considered as the representative of the actual organizational performance (Johannessen *et al.*, 1999). Thus, many scholars argued that financial measures can reflect only the effect of past activities on the organizational performance so using it to predict the future performance might be misleading (Kaplan & Norton, 1996; Jusoh *et al.*, 2008).

To conclude, the financial measures lack the strategic focus and rather emphasizes on short-term financial measures resulting in a wider and bigger gap between developed strategies and their implementation (Neely, 1999; Kaplan, 2008). Thus, many organizations have adopted multidimensional and balanced models by including non-financial measures in which these organizations can be developed and managed effectively (Sinclair & Zairi 2000; Garengo, 2005).

In the context of the above discussion, the organization is seen as belonging to stakeholders rather than simply shareholders (Freeman, 1984; Brown & Fraser,

2006; Steurer, 2006). This means that the organizations should take into considerations different stakeholders when selecting an organizational performance measurement system. These stakeholders include shareholders, employees, suppliers, customers, governments and local communities (Hubbard, 2006). To say the same in a different way, the Freeman's stakeholder theory evaluates organization performance, paying attention to a diversity of stakeholder groups that have particular interests in the effects of the organization's activities. The basic argument of Freeman's theory is that it does not ignore shareholders value, but it considers them as only one group of stakeholders, particularly in organizations that issue shares. The quotation from Ardalan, Vafai and Pairo (2013) explains better the stakeholder group *"building better relations with primary stakeholders like employees, customers, suppliers, and communities could lead to increased shareholder wealth by helping firms develop intangible, valuable assets which can be sources of competitive advantage"*.

The key driver for an organization's long-term success was the value created for the stakeholders (Minoja, 2012; Coombs & Gilley, 2005). Berman, Wicks, Kotha and Jones (1999) also conclude that enhancing positive relationships with major stakeholders, namely customers and employees can affect the profitability of the organization.

There were many models and frameworks related to organization performance measurement system that involve different stakeholder's perspectives (Tangen, 2004). For example, Heskett, Jones, Sasser and EarlSchlesinger (1994) designed a model in a service industry that is called Service Profit Chain, which links both

financial and non-financial performance measures of the organization. Based on this model, it was claimed that the non-financial measures such as employees' satisfaction, loyalty, productivity, internal quality and organizational values can lead to growth and profitability of an organization.

Another important model was introduced by Neely, Adams and Kennerley (2002), which was called the Performance Prism. This model considers stakeholder as a very important aspect, however, it assumes that much attention should be given to the other important stakeholder groups of customers, employee, suppliers, regulators and legislators. This model highlights the difference between stakeholder satisfaction and stakeholder contribution, an important criterion that has not been considered in other performance measurement approaches. This framework includes five performance dimensions, namely (i) stakeholder satisfaction, (ii) stakeholders contribution, (iii) strategy, (iv) processes and (v) capabilities.

Another interesting model was introduced by Weerakoon (1996). This model is called as the multi-model performance framework (MMPF). It is based on four dimensions embracing (i) the employee motivation, (ii) market performance, (iii) productivity performance and (iv) societal impact. It also covers various stakeholders' satisfaction such as customers, investors, employees, suppliers and society.

The balanced scorecard (BSC) has been acknowledged as the most popular model in measuring organizational performance (Kaplan & Norton, 2008). It was designed as the strategic model that balances all aspects of organizational performance. The

organizations can suit their strategies to achieve their overall goals and objectives. The BSC is a model in which performance was seen from four different perspectives, namely, (i) financial perspective, (ii) internal business perspective, (iii) customer perspective and (iv) innovation and learning perspectives.

In conclusion, it is very important for an organization to develop appropriate performance measurement system in which human-based activities and processes' effectiveness can be assessed so as to achieve business excellence. It is clear that all stakeholders should be considered when evaluating the performance of modern organizations. Financial measures should not be used solely when measuring organization performance (Ringim, Razalli, & Hasnan, 2012). Chenhall (2005) points out that in the performance measurement literature, there have been many attempts to develop strategic performance measurement systems that consider both financial and non-financial indicators. It is also crucial to take into account qualitative indicators, such as customer satisfaction, customer service, quality of products and learning and innovation as they have a long-term focus through value-creation activities (Kaplan & Norton, 1996). In general, an organization performance measurement system should be designed and implemented in accordance with the company's business strategy in order to link the strategy and the objectives (Kaplan & Norton 1996; Schneiderman 1999) and the operational aspects (Neely *et al.*, 2002).

2.3.3 Microfinance Institutions (MFIs) Performance

The concept of microfinance performance is a crucial issue as it determines the MFIs efficiency in utilizing the funds injected by donors and assists the regulators in controlling and monitoring the MFIs (Mustafa & Saat, 2013). The MFIs were established with the aim of poverty alleviation, so the management and the governments should make sure that these institutions perform well. The MFIs should ensure their sustainability to be able to continue serving the poor people in the long term, even though the donors' funds are limited. The limited funds make MFIs less viable and it is a major obstacle for further development of the microfinance sector (CGAP, 2006). Thus, it is necessary for MFIs to be financially self-sustainable in order to be able contribute effectively in combating poverty.

It was a well-accepted fact that performance measurement was an essential mechanism for the MFIs management and a key point for sustainability. For Waweru and Spraakman (2012), the measures of performance are the very important methods for managing MFIs and the essential requirement for sustainability. The real performance can be improved when they are measured properly (Brandsma & Burjorjee, 2004). It is stated that measuring MFIs performance should focus on assessing their development in achieving strategic objectives (Mustafa & Saat, 2013). Roy and Goswami (2013) point out that performance measurement system in general plays an essential role in translating the firm's strategy into the desired outcomes. Thus, performance measurement system in microfinance communicates the objectives and achievements of MFIs to the employees, controls their progress

and provides feedback on their efforts and commitments to different stakeholders such as MFIs management, donors, governments and communities.

However, there is still no consensus about the definition of microfinance performance and there are not many instruments being developed to measure such performance (Nanayakkara & Iselin, 2012). This is because the uniqueness and the nature of MFIs being a business with profit and social objectives, to provide financial services to combat poverty and cover their cost in order to be sustainable. In other words, the MFIs performance issue is not straightforward since the MFIs are different from the other financial organizations. The MFIs are unique in its nature as they have both social and business objectives (Roy & Goswami, 2013). Moreover, the hybrid legal status in which some of them are regulated and supervised have made empirical studies of their performance difficult (Cull, Demirguc-Kunt, & Morduch, 2009). Thus, this explains why there has been no standard definition for microfinance performance and many studies have implied various aspects of MFIs whilst examining their performance.

According to, Roy and Goswami (2013), there are five categories used by most scholars to measure the overall performance of MFIs namely (i) financial performance (profitability), (ii) sustainability, (iii) outreach, (iv) efficiency and (v) social performance. However, there are scholars that suggest multidimensional performance measurement when measuring MFIs performance. In the literature of MFIs performance measurement, those attempts to develop strategic performance measurement systems that consider the multidimensional aspect of measuring the overall performance of MFIs. For example, Nanayakkara and Iselin (2012) propose 4

dimensions as a new way to measure the MFIs performance in an objective method. They are (i) sustainability, (ii) breadth of the outreach, (iii) depth of outreach, and (iv) portfolio at risk. Another performance measurement framework introduced by Mustafa and Saat (2013) that implement both institutionalist school and welfarist school views to the MFIs measurement system. They suggest using outreach and self-sustainability from one aspect and social impact, the change in the income of the client, as a direct microfinance outcome from another aspect. Roy and Goswami (2013) also propose a new conceptual framework, known as 360° approach, to assess the overall performance of the MFIs. It includes 8 dimensions which are (i) financial performance, (ii) outreach, (iii) sustainability, (iv) efficiency, (v) social performance, (vi) institutional characteristics, (vii) productivity and (viii) governance.

With regard to the performance measurement model, counting all measurements, a number of scholars propose using the most popular performance measurement model, balanced scorecard, to assess the MFIs performances which focus on using a variety of assessment measures rather than traditional financial system (Koveos & Randhawa, 2004; Waweru, 2010; Waweru & Sprakman, 2012; Kipesha, 2013).

The MFIs performance measures are different of those business organizations as they focus on both financial and social objectives (Armendariz *et al.*, 2013). Their performance measurement is different from the usual methods that are applied by other business organizations or even financial institutions like banks and non-bank financial companies (NBFCs) because of the social aspect. Moreover, one dimensional approach to assess MFIs performance is not appropriate and various dimensions are suggested to be applied. According to Koveos and Randhawa (2004),

the differences between MFIs and other financial institutions have some important implications during the evaluation of the MFIs performance. Therefore, the nature of the MFIs dictates that evaluation approaches and the results vary according to different the factors, such as MFI objectives, the person or the organization performing the evaluation, the environment in which the MFI operates, the time of assessment and other dimensions of the evaluation.

Moreover, Mustafa and Saat (2013) had developed nine key characteristics to help the MFIs choose the most appropriate performance measurement system. They suggest the measurement system should include outreach, sustainability and stakeholders' perspectives. These perspectives must have a balance between the financial and non-financial measures, the internal and external considerations, the efficient and effective measures. It should be multidimensional, comprehensive and a multifaceted system.

2.3.4 The Performance Measurement Used in the Study

As it had been discussed in the previous section, studies had used different measures to measure the MFIs performance. Scholars had proposed different frameworks that take into consideration the multidimensional aspect to measure the overall performance of MFIs. However, none of the studies provide the justifications for using specific indicators or the reasons for not using other indicators. It is obvious that there is no broad agreement on the specific definition of the performance of MFIs or even dimensions to measure the overall performance (Nanayakkara & Iselin, 2012).

This study primarily concerns the main objective of the MFIs which is “poverty reduction”. This main objective is blended with the other complementary objectives such as women empowerment, sustainability, outreach, impact and financial inclusion, and then defines microfinance performance according to such perspective. To define the MFIs performance, this study views the MFIs performance by taking into considerations the financial and nonfinancial perspectives and the balanced score card (BSC) measurement model as the base for measuring performance. The four dimensions of BSC; (i) financial, (ii) customer, (iii) internal process and (iv) learning and growth are expanded to consider the social perspective. This is an imperative because MFIs are different from other formal financial institutions with the social objectives (Ben Abdelkader *et al.*, 2012). Consequently, social perspective is included to the main components of BSC in order to measure overall performance of MFIs. This approach is viewed as being categorized as the financial and non-financial performance perspectives. Kipesha (2013), Nanayakkara and Iselin (2012), and Roy and Goswami (2013) assert that adopting BSC to investigate the MFIs performance is crucial as it ensures their survival in a competitive market while meeting their social objectives at the same time.

Financial performance is important for MFI survival and sustainability (Kinde, 2012). The MFIs should be operationally and financially sustainable because most of them rely on the funds obtained from donors. Moreover, things can get worse when the donation is terminated. Non-financial performance is also important if donors and borrowers are to be served well (Crabtree & DeBusk, 2008). Moreover, they state that the non-financial performance can predict, facilitate and drive the performance of the organization.

Using the financial and non-financial perspectives to evaluate organizational performance involve the objective and the subjective measures. While the objective measures are based on the real figures from the organization, the subjective measures use the perceptual responses of the participants to assess the performance (Johannessen *et al.*, 1999). It is best to use the perceived measures of the financial and non-financial performance as the correlation was found between subjective and objective measures of performance (Andrews, Boyne, & Walker, 2011) and the perceived or subjective measures are found to be valid and reliable as an alternative to objective measures in organization performance (Wall *et al.*, 2004). Furthermore, the subjective measurement technique is frequently used by researchers and it is preferred by them in order to increase the reply rate (Eris & Ozmen, 2012). Moreover, the subjective measures can explain organizational performance as similar to objective measures as the respondents' perceptions explain what cannot be explained by data and figures which lead to sustainable organization performance (Idris, 2011).

2.4 Review on the Relationship with MFIs Performance

2.4.1 Total Quality Management (TQM) and MFIs Performance

2.4.1.1 Quality Definition

Currently, quality is considered as one of the biggest concerns for success and survival in the global market and for competitive advantage priority (Demirbag *et al.*, 2006; Ghadiri *et al.*, 2013). Intensity of competition and increasing demand for better quality, by customers, have compelled the organizations to transform their business models to provide high quality products and services for customers (Lam *et*

al., 2011). In order to accomplish that, 'quality vision' has to be incorporated into the firm's objectives and goals (Talib, Rahman, & Qureshi, 2011). Quality should be viewed as the generating value by improving every aspect of the firm continuously (Gharakhani, Rahmati, Farrokhi, & Farahmandian, 2013), so as to satisfy both customers' and stakeholders alike (Kumar, Choisine, Grosbois, & Kumar, 2009). According to this view, the quality concept can be maximized and achieved only with the commitment and dedication of the entire organization.

The concept of quality had witnessed a significant evolution by the TQM gurus such as Crosby, Deming, Juran, Feigenbaum, Ishikawa, who are famous for their contributions and their prominent role in the prosperity of quality (Jaafreh & Al-Abedallat, 2012). The quality gurus have their ways of defining quality due to the non-existence of an agreement on the definition of quality (Munizu, 2013). For example, Deming (1986) defined quality as "*satisfying customer beyond expectations*". In Deming's approach, satisfying the customer is the main of focus quality while Juran (1988) viewed quality as "*fitness for use*". Juran signifies the tight connection between the quality and actual use of services and products.

Another definition introduced by Crosby (1979), defining quality as "*conformance to requirements and quality is free*". According to Crosby's approach, improving the attitudes and behaviours of employees is critical. He also introduced the concept of "zero defect", referring to defect prevention. Crosby suggested four main principles for quality to make it certain (i) management participation and attitude, (ii) professional quality management, (iii) original program; and (iv) recognition.

Feigenbaum (1983) defined quality as the total composite product and service characteristics of the organization to meet the customer's expectation. Based on this approach, the quality is dynamic as the needs and expectations of customers are changing. The customer's needs should be translated into the product and services specifications. The role of marketing is also emphasized and it is believed what the customer says is right. Ishikawa (1985) defined quality as "*quality does not mean the quality of the product only, but also of the quality of management or the reputation of the company*". Ishikawa's approach focuses on the quality of services, products, management and the improvement of the firm.

The quality definitions had been adjusted to the transition of time based on the modification of customer's needs and desires (In'airat & Al-Kassem, 2014). Dervitsiotis (2003) defined quality as meeting or exceeding the business stakeholders' needs and demands. According to Thomsett (2005), quality had often been viewed as the "Lean Six Sigma" process improvement management. The concept of quality can be referred as synonymous with "New Gold Standard" which had been widely used in the service and hospitality sector (Michelli, 2008).

Another specific definition of quality in service sector introduced by Gorla, Somers and Wong (2010), defining it as the degree of contradiction between the normative expectations of customers for the service and their perceptions of service performance. Sohani and Sohani (2012) defined quality as exception, perfection, fitness for purpose and value for money and transformative. The more recent definition provided by Basu (2014), defining it as the consistent conformance to the expectations of customers.

Based on the discussion and analysis of diverse definitions of quality introduced by the quality gurus and recent scholars, it seems that the stakeholders with different needs and expectations of the institutions require these institutions to respond to both current and potential customers. The customers' needs and expectations are the key factors in the quality issue. Thus, viewing quality as "the degree to which products and/or service delivered is consistently value-added and excellent that can reach customer satisfaction" is deemed appropriate.

2.4.1.2 Total Quality Management Definition

The TQM literature reveals that there are numerous interpretations and definitions of TQM (Talib & Rahman, 2010). Scholars perceive TQM from a number of perspectives which leads to the lack of agreement or consensus on the definition of TQM (Snežana, 2015). For example, Kumar *et al.* (2009) defined TQM as a holistic management approach that integrates all organizational processes and activities to meet customers' needs and expectations in order to achieve the overall organizational performance and effectiveness. This definition views TQM as a holistic approach which embraces different processes and activities to meet the customer satisfaction and achieve the ultimate goal of the organization. Similarly, Ghadiri *et al.* (2013) defined TQM as a management process which ensures the necessary coordination within organizations to meet the customer needs and beyond their expectations. This definition considers TQM as a management system that ensures customer satisfaction and the cooperation of all departments and every employee within the organization to satisfy the customer.

Boon, Arumugam and Hwa (2005) perceived TQM as a programmed system rather than viewing it as a combination of methods or processes utilized by institutions to lead them in continuous improvement. In a similar vein, Fening *et al.* (2013) defined TQM as a system of managing quality in organizations to improve products and services. This perspective view TQM as a systematic approach that gives much focus on the quality of products and services.

Viewing TQM as a culture, Kanji and Wallace (2000) define TQM as the culture of an organization committed towards customer satisfaction through continual improvement. Based on this view, TQM should be established as a culture and continuous improvement is a prerequisite for customer satisfaction due to the change in customer demands. Al-Swidi and Mahmood (2012) define TQM as a strategy that consists of integrated both soft and hard factors emphasizing on training and empowering human resource management to enhance their involvement and commitment resulting in achieving organizational performance. This definition considers TQM as a strategy that embraces a set of practices aiming at obtaining organization objective.

One of the most common and recommended approach was that TQM was considered as a philosophy that integrate all organizational functions to meet and surpass the customer's demands and organizational objectives (Talib *et al.*, 2011). According to Gharakhani *et al.* (2013), TQM can be defined as a holistic management philosophy that aims at applying continuous improvement in every function of the organization through utilizing the concept of total quality from the acquisition of resources to customer service after the sale. Recently, Pérez-Aróstegui, Bustinza-Sánchez and

Barrales-Molina (2015) viewed TQM as a management philosophy that strives for excellence through continuous improvement and customer focus.

Based on the review and analysis of TQM definitions, it has been observed that there are numerous definitions given by eminent and prominent scholars and each one defines it according to their perspective. However, it was observed that the essence of these definitions shares many common elements. First, they share the management commitment as the centre of attention and focal point in the TQM philosophy. Second, they consider customer focus as an essential component for success of TQM. Lastly, they consider constant organization changes as necessary conditions for TQM success.

In conclusion, depending on the analysis of different definitions mentioned above regarding TQM, the following definition is developed. TQM within the context of this study is defined as a philosophical strategy, including principles, methods and best practices aiming at achieving MFIs overall performance under the leadership and top management commitment to adopt the critical success factors of TQM namely leadership management, customer focus, strategic planning, training, continuous improvement, benchmarking and quality culture. A corporate TQM culture can be established by creating a suitable workplace environment to satisfy internal and external customers' requirements alike.

2.4.1.3 Total Quality Management Critical Success Factors

The extent literature review suggests that the critical success factors, also known as elements, practices and constructs of TQM, need to be identified because they constitute as the cornerstone of successful implementation of TQM (Talib & Rahman, 2010). They are the critical constructs, controlled by the management to achieve the organization's mission. They are integrated together to be an effective system providing the early notifications for management to avoid surprises or missed opportunities (Khanna, Sharma, & Laroija, 2011).

Previous studies had pointed out that TQM implementation programs had been unsuccessful because some of the success factors were not inlaid into the system (Jones & Seraphim, 2008). A thorough understanding of critical success factors (CSFs) is a major requirement for TQM implementation (Salaheldin, 2009). In addition to that, Talwar (2011) suggests that an organization can create a niche in the marketplace by focusing only on a few quality dimensions that competitors ignore. Rohaizan and Tan (2011) point out that TQM is still regarded as problematic in many organizations due to bad strategy implementation and unsystematic process, insufficient understanding about TQM and the driven factors to its success were not in place. Therefore, it is crucial for practitioners and researchers to understand the significant role of CSFs, especially a few vital CSFs.

Given its importance, numerous scholars have carried out studies identifying the CSFs using different approaches, namely contributions from quality pioneers, well-known quality models and empirical studies (Tari, 2005; Ul Hassan *et al.*, 2012).

The quality management gurus contributed significantly to the formalization of the TQM constructs as their essential frameworks have become the main bases of major studies in TQM literature (Bon & Mustafa, 2013). In particular, Deming, Juran, and Crosby have had a great effect on numerous practitioners and organizations over the world (Zairi, 2013). Specifically, Deming (1986) confirmed the use of statistical techniques for quality control, suggesting 14 principles to improve quality in organizations. While, Juran (1986) confirmed on the importance of both technical and managerial aspects, and identified the three basic functions of the quality management process: planning, organization and control, as the stages of quality improvement to minimize the total costs of quality.

Crosby (1979) identified 14 steps for quality improvement, including top and intermediate management commitment, quality measurement, evaluation of quality costs, corrective action, training, a zero-defect philosophy, objective setting and employee recognition. Feigenbaum (1991) provided the total quality, including mainly leadership, quality improvement, incorporating quality in the organizational practices, all employees' participation to reduce the total quality costs. Ishikawa (1985) emphasized the importance of the usage of cause-effect diagrams for problem solving, Pareto analysis, and quality circles as a way to achieve continuous improvement.

Using International Quality Awards (IQAs) as guidelines in TQM implementation, many organizations developed their TQM strategy relying on the key international quality awards that were used as the framework for various studies (Tari, 2005; Singla, Khanduja, & Singh, 2011). According to Singla *et al.* (2011), there are more

than hundreds of Business Excellence Awards existing in different categories. Specifically, the most well-known were the Malcolm Baldrige National Quality Award of USA (MBNQA) and the European Foundation for Quality Management of Europe (EFQM) (Bou-Llusar, Escrig-Tena, Roca-Puig, & Beltrán-Martín; 2009). Talwar (2011) extended this, pointing out that the MBNQA, EFQM and the Deming Prize of Japan are used as global reference models by many researchers. It seems that Business Excellence Models (BEMs) provide a useful assessment framework against which organizations can evaluate their quality management practices and their end business results, and constitute a common benchmark or standard criteria for firms.

Most of the BEMs/ IQAs share the same core elements and objectives, and concentrate on enhancing the global competitiveness of firms of their respective countries (Talwar, 2009). With regard to the focus of MBNQA, EFQM and The Deming Prize, Talwar (2011) mentions that MBNQA focuses on customer satisfaction, benchmarking, comparisons with the industry average, the EFQM model focuses on benchmarking the satisfaction levels of the customers, employees and the community. The Deming Prize focuses on the dissemination of company-wide quality control, continuous improvement and relations with suppliers.

The framework of MBNQA consists of seven elements: - leadership, strategic planning, customer and market focus, information and analysis, human resource management, process management and business results (Peschel, 2008). While the EFQA includes nine criteria, namely results orientation, customer focus, leadership, management by processes and facts, employee development and involvement,

learning, innovation and continuous improvement, partnership development and corporate social responsibility (Martín-Castilla & Rodríguez-Ruiz, 2008). A study conducted by Singla *et al.*, (2011), carried out to identify a set of critical success factors based on their frequency of occurrence from the top 10 well-known international quality awards, reveals that the frequent CSFs in these models are strategic quality planning, process flow management, education and training, customer orientation, employee empowerment and involvement, internal quality results, external quality results, top management support, reward and recognition, information analysis and evaluation and analysis (see Appendix 3).

The TQM success factors were also supported in the measurement studies. According to Irfan and Kee (2013), the CSFs were introduced by Saraph, Benson and Schroeder (1989) after a comprehensive review on quality leaders. The study on TQM becomes a phenomenon after this contribution that inspired both TQM practitioners and researchers to identify the CSFs of TQM (Talib *et al.*, 2011). Many scholars have adopted the same approach to identify the CSFs and their measurements such as Flynn, Schroeder and Sakakibara (1994), Ahire, Golhar and Waller (1996), Zhang, Waszink and Wijngaard (2000), Motwani (2001), Türker (2002), Bayazit (2003), Conca, Llopis and Tarí (2004), Saravanan and Rao (2006), Bayraktar, Tatoglu and Zaim (2008), Das, Paul and Swierczek (2008), Mustafa and Bon (2013) (see Appendix 3). All these studies have similarities among TQM practices and frameworks adopted by different service industries as well as by manufacturing industries.

Sila and Ebrahimpour (2002) carried out a comprehensive review of the literature analysing the frequency of occurrences of TQM practices, have used an integrated approach in which they identified 25 factors, extracted from 76 studies, as the critical factors for TQM. According to them, the most popular TQM practices are customer focus and satisfaction, employee training, leadership and top management commitment, teamwork, employee involvement, continuous improvement and innovation, and quality information and performance measurement.

Karuppusami and Gandhinathan (2006), using “Pareto analysis”, to sort and arrange the CSFs according to the order of criticality, compiled 56 CSFs. The first five CSFs and the most frequently used are leadership and quality policy, supplier quality management, process management, customer focus, training and employee relations.

In the same stream of research, Fryer, Antony and Douglas (2007), whilst examining the differences and similarities between the TQM CSFs of manufacturing; service and public sector organizations, found that management commitment and customer focus were listed as the top CSF in all the three sectors. Public sector gives much focus on the processes and employee empowerment. The service sector focuses on quality culture whereas the manufacturing sector focuses on training and learning. Najeh and Kara-Zaitri (2007) suggest that variation and focus go beyond sectors to countries resulted in an issue of consolidation of TQM practices among all culture settings.

A more recent study conducted by Talib *et al.* (2011) to identify and propose the “vital few” TQM CSFs also use the “Pareto analysis” tool. According to them, nine

CSFs are the vital few and they are top management commitment, customer focus and satisfaction, training and education, continuous improvement and innovation, quality information and performance measurement, supplier management, employee involvement, employee encouragement, and process management. They emphasized that researchers and practitioners must recognize these few vital CSFs and include them in their work, however, the other factors should not be totally ignored.

The prior discussion shows that there are many CSFs of TQM and each study use different ones based on the context of the study. It is also argued that the CSFs of TQM vary from organization to organization, from sector to sector and from country to country (Singla *et al.*, 2011; Najeh & Kara-Zaitri, 2007). It is also argued that practitioners must be able to identify the CSFs of TQM as it is the essential requirement in effective implementation of TQM in organizations (Khanna *et al.*, 2011). Therefore, the researcher identified the CSFs of TQM in the study based on the quality gurus' contributions, quality models, empirical studies and measurement studies. Given the importance of practitioners, the researcher also explored the perspectives of the experts including the senior managers and experts in microfinance sector in Yemen.

Among the existence of a large number of TQM practices in the literature, there were some factors considered important and common among these studies. For this study, seven TQM practices had been selected from the most important ones based on a thorough literature review and the opinions of the experts in microfinance sector in Yemen. It is believed that the TQM framework proposed was a generic one, contributing effectively for successful implementation of TQM in the microfinance

industry (Homaïd *et al.*, 2015). This study used only seven practices because it was argued that the researcher must understand the importance of CSFs and to include few vital CSFs in their work (Karuppusami & Gandhinathan, 2006). Specifically, the number of TQM practices to be included in studies related to service industries range from 6 to 9 as recommended by Talib *et al.*, (2011). Moreover, MBNQA, a well-known quality model, comprises only seven practices (Peschel, 2008). Therefore, the study proposed TQM practices, namely leadership management, customer focus, strategic planning, training, continuous improvement, benchmarking and quality culture considered in this study. The discussions regarding each one of the TQM practices are presented in the following section.

Leadership Management

Singh and Sushil (2013) and Topalović (2015) suggest that leadership management is regarded as the most pivotal factor for TQM implementation. According to Fening *et al.* (2013), top management's belief in TQM is primarily a prerequisite for its successful implementation. Many TQM gurus, for examples, Oakland (1993); Kanji and Baker (1990), stated that the role of top management is vital for the successful implementation of TQM in organizations. Leaders have to support employees' development, create a good environment for communication among employees, managers and customers utilize information effectively and efficiently (Sadikoglu & Olcay, 2014). Managers should show more leadership than traditional management practices in order to increase the awareness of quality activities when adopting TQM (Criado & Calvo-Mora, 2009).

Leadership significantly influences groups and teamwork, mobilizes resources and promotes the strategic direction of the organization to obtain customer satisfaction and superior performance (Jaafreh & Al-abadallat, 2012). Leadership encourages employees to be innovative, which helps in solving problems and developing new products (Zehir *et al.*, 2012). In addition to that, top management must be responsible, lead the process, and allocate needed resources and provide directions (Vouzaz & Psychogios, 2007). It is also argued that leadership is considered to be the most important practice of TQM because of its role in providing guidance and directions for the entire organization to implement TQM successfully (Idris, 2011). Many previous studies have proven the significant role of leadership management in driving organization performance (for examples, Fotopoulos & Psomas, 2010; Idris, 2011; Valmohammadi, 2011; Zehir *et al.*, 2012; Jaafreh & Al-abadallat, 2012; Fening *et al.*, 2013; Irfan & Kee, 2013; Ghadiri *et al.*, 2013; Dubey, 2015). However, there are a few studies that reported different conclusions (Talib *et al.*, 2013; Sadikoglu & Olcay, 2014; Mehmood *et al.*, 2014). In short, this study concludes leadership management as one of the TQM practices due to its important role in the TQM implementation success and providing new evidence for more generalization.

Customer Focus

Customer focus was also considered as a key element of TQM in order to obtain TQM implementation objective (Klefsjö, Bergquist, & Garvare, 2008; Idris, 2011). All organizations must identify customer needs and respond quickly to their demands and make sure that the customers were satisfied through implementing TQM (Zakuan, Yusof, Laosirihongthong, & Shaharoun, 2010). Meeting the demands

of customers is the main focus of the TQM strategy (Nitin, Dinesh, Paul & Sahib, 2010; Fening *et al.*, 2013; Yunoh & Ali, 2015). The literature reveals that one of the most common TQM practices used is gaining information about customers, which help in quality performance improvement of the organizations (Hackman & Wageman, 1995). It is also argued that understanding the customer needs was a prerequisite for TQM success (Taylor & Wright, 2003). Moreover, customer focus is one of the three core elements of TQM (Lakshman, 2006).

The main goal of TQM is to satisfy the customers, so customers play an important role in TQM implementation (Baidoun, 2003). This requires a quick response to the demands of customers through designing products or services based on the customers' needs, expectations and complaints. When the customer demands are met, their satisfaction is higher and the organization's stakes increase, which result in success (Sadikoglu & Olcay, 2014). Due to the significant role of customer focus in TQM implementation, it is included in many studies that report the significant role of this dimension to enhance organization performance (e.g. Fotopoulos & Psomas, 2010; Idris, 2011; Valmohammadi, 2011; Zehir *et al.*, 2012; Jaafreh & Al-abadallat, 2012; Ghadiri *et al.*, 2013; Irfan & Kee, 2013).

However, there are studies concluding that customer focus is not related to organization performance (Talib *et al.*, 2013; Mehmood *et al.*, 2014) or mixed results based on the performance measures of the organizations (Sadikoglu & Olcay, 2014). In brief, this study includes customer focus as one of the TQM dimensions of MFIs, as it is very necessary to identify the customer focus and to meet their needs. The customer focus is essential in the microfinance industry as there is a diversity of

customers based on their gender, educational background and type of businesses which requires understanding their demands.

Strategic Planning

Strategic planning is also regarded as one of the core elements of successful TQM implementation (Thai Hoang & Laosirihongthong, 2006). The significant role of strategic planning can be understood as one of the main criteria of IQAs in quality management implementation process. The quality gurus such as Crosby (1979), Deming (1986) and Juran (1988) also state that strategic planning is an essential element of TQM (Pryor, Toombs, Anderson, & White, 2010). Many realized the important role of strategic planning during TQM deployment and execution (Sila & Ebrahimpour, 2002). Tari (2005) mentions that determining the vision, mission and strategic objectives of the organizations are a prerequisite before implementing TQM.

Strategic planning helps organizations to identify clear priorities and allocate resources to gain the best results (Jaafreh & Al-abadallat, 2012). Through participative planning, strategic planning can integrate the development and deployment plans, improve customer relationship management, and build a good relationship with suppliers and other partners and help in attaining long-term and short-term objectives (Teh, Yong, Arumugam, & Ooi, 2009). However, studying the impact of strategic planning on organization performance is scarce (Talib *et al.*, 2013).

With regard to the impact of strategic planning on organization performance, the results show mixed results (see Idris, 2011; Jaafreh & Al-abedallat, 2012; Talib *et al.*, 2013; Alnasser *et al.*, 2013; Sadikoglu & Olcay, 2014). Nevertheless, the study opts to include strategic planning as one of the elements of TQM, in spite of the lack of studies and inconsistent findings regarding this relationship.

Training

For Sadikoglu and Olcay (2014) and Bayraktar *et al.* (2008), training is an important factor for the success of TQM implementation, as effective training can improve loyalty, skills, motivation and employees' performance. Together with education, they help organizations to manage rapid changes effectively and establish a unique behaviour that make them different from others to obtain a competitive advantage (Sadikoglu & Olcay, 2014). It is also stated that training plays a critical role in maintaining a superior quality level in the service sector (Talib & Rahman, 2010). Moreover, training is a prerequisite in continuous improvement and innovation process within organizations (Talib *et al.*, 2013). Valmohammadi (2011) suggests that when all employees receive effective training, TQM awareness, interest, desire and action will be generated among them.

In order to get full benefits, training programs should be designed based on the results of the training needs assessment (Goetsch & Davis, 2010). Training programs should include training in the basic aspects of quality, problem-solving, technical skills and teamwork (Conca *et al.*, 2004). According to quality gurus (for example, Juran, 1969; Ishikawa, 1985; Deming, 1986 as cited in Kariuki & Mburu, 2013),

organizations should conduct training continuously and employees should never stop learning things related to the work they do. Empirically, scholars such as Karia and Asaari (2006), Fening *et al.* (2013), Talib *et al.* (2013) and Ghadiri *et al.* (2013) found a significant relationship between training and organization performance while some studies such as Sadikoglu and Olcay (2014) found inconsistent findings, however, due to different measures of performance used in their studies. To this end, training is considered to be one of the most important tools to provide high quality products or services, which result in high customer satisfaction, increase sales and then obtain business success. Thus, training was included as one of the TQM practices for the MFIs in the present study.

Continuous Improvement

Continuous improvement aspect was considered as one of the major elements of the TQM implementation initiative (Talib & Rahman, 2010). Basically, TQM aims at improving the quality of products and services continuously through the involvement of all employees at all levels within the organizations to attain business success (Burli, Kotturshettar & Dalmia, 2012). Continuous improvement is a crucial element for the success of innovation because it encourages changes and innovative thinking in the organization's operations (Costa & Lorente, 2008).

According to Talib *et al.* (2013), continuous improvement and innovation is very important in the service sector. It refers to seeking for the never-ending improvements and developing processes in order to generate new or improved techniques in the process of transforming inputs into useful outputs. When

organizations improve such processes, they can create new products or services, improve current products or services, meet customers' needs, even beyond their expectations, and create value to all stakeholders.

Based on the TQM strategy, improving performance continuously is the best way to improve organization output (Corbett & Rastrick, 2000). Most studies reported that continuous improvement is significantly associated with organization performance (for example, Fotopoulos & Psomas, 2010; Mehmood *et al.*, 2014), however, there are few studies such as Zehir *et al.* (2012) and Talib *et al.* (2013) who have reported insignificant results. Still for this element, the researcher includes continuous improvement as one of the core elements of TQM for the MFIs in the current study.

Benchmarking

Benchmarking is a practice for adoption and execution of any TQM intervention within any organizations (Talib & Rahman, 2010; Singh & Sushil, 2013) and is considered as one of the elements in this study. The goal of benchmarking is to determine a target for organization performance improvement so as to obtain a superior position in the market (Yusuf, Gunasekaran, & Dan, 2007). It also aims at evaluating organization's operations and processes against the best practices players from inside or outside the industry (Sit, Ooi, Lin, & Chong, 2009). An organization cannot obtain global standards without benchmarking their critical key business processes (Motwani, 2001).

It was also argued that it can be regarded as a very effective performance improvement tool for processes, business units and for the entire organization (Baidoun, 2003). Thus, it cannot be denied that benchmarking is a powerful technique utilized by organizations to compare themselves with leading competitors in their industry in order to improve their processes, such as cost reduction and internal and external customers' satisfaction.

According to Sinclair and Zairi (2000), benchmarking was regarded as a dynamic technique in TQM implementation and development processes. The literature reveals that benchmarking is significantly related to organizational performance (see Sit *et al.*, 2009; Idris, 2011; Talib *et al.*, 2013). This justifies the significant role of benchmarking to be included as one the dimensions of TQM for the MFIs in the study.

Quality Culture

It was emphasized that the existence of sufficient and suitable quality culture is a prerequisite for introducing a base practices of TQM (Todorut, 2013). To some extent, quality culture is a key element for the success of the organization (Gore, 1999) and improving competitive advantage (Irani, Beskese, & Love, 2004). Generally, organizational culture can affect job employee motivation (Sokro, 2012), leadership behaviour and job satisfaction (Tsai, 2011), tacit knowledge sharing behaviour (Suppiah & Sandhu, 2011), performance management practices (Ehtesham, Muhammad, & Muhammad, 2011) and organization performance (Jacob *et al.*, 2013). According to Fotopoulos and Psomas (2010), the quality improvement

cannot be guaranteed unless a new quality culture is adopted by the top management. Furthermore, many scholars argued that the success of TQM implementation is essentially based on the generating of quality culture to gain competitive advantage through satisfying demanding quality customers (Kanji & Wallace, 2000). This indicates that quality culture is an important practice to be employed by organizations when implementing TQM strategy.

In Yemen, the top managers had failed to create a new quality culture in the organizations though the significance of customer satisfaction for the success of organization (Al-Zamany, Hoddell, & Savage, 2002). They also stated that the executives and top managers have not been effectively involved in quality initiatives in Yemeni organizations. This explains that the leadership system in Yemeni organizations had not supported the quality culture that results in the success of TQM implementation. A more recent study carried out by Homaid *et al.* (2015) pointed out that quality culture with the other TQM practices in the study work together to establish the corporate TQM culture that satisfy the customers and attain the sustainability of MFIs performance in Yemen.

According to Arumugam, Mojtahedzadeh, and Malarvizhi (2011), quality culture is the main factor in a successful TQM initiative and exchanging the culture of an organization is considered to be the backbone of a successful implementation of TQM. In addition to that, quality culture contributes significantly to the performance of organizations (Yusof & Ali, 2000; Talib *et al.*, 2013; Dubey, 2015). In brief, quality culture is an essential component for successful implementation of TQM

(Yusuf *et al.* 2007), and therefore, included as one of the TQM dimensions for the MFIs in this study.

2.4.1.4 Total Quality Management and Organization Performance

TQM had received more attention by many scholars and academicians over the world (Dubey, 2015). Therefore, many empirical studies had investigated the effects of TQM practices on the performance of organizations in different sectors of the economy. For example, numerous studies had been carried out in a diverse of economy sectors such as manufacturing (Ul Hassan *et al.*, 2012; Dubey, 2015), multiple service sectors (Talib *et al.*, 2013; Lam *et al.*, 2011; Singh & Sushil, 2013), Telecom sector (Iqbal *et al.*, 2012), banking (Al-Swidi & Mahmood, 2012; Jaafreh & Al-Abedallat, 2012), public sector (Chin & Sofian, 2005) and education (Sayeda, Rajendran, & Lokachari, 2010). The increase in attention towards TQM strategy is not surprising as it is considered to be the source of competitive advantage for the organizations (Irfan & Kee, 2013; Kaur & Sharma, 2014). Moreover, TQM implementation is an effective management system, triggering a fundamental change in the organization through which the organization can overcome new market environment challenges in achieving the competitive survival (Chong & Rundus, 2004; Nair, 2006).

Referring to TQM literature, it was generally concluded that TQM has a positive association with organization performance (Jiménez-Jiménez *et al.*, 2015), however, there are some who provide inconsistent relationship. The studies that conceptualized TQM as a single construct (e.g Lam *et al.*, 2011; Iqbal *et al.*, 2012;

Ul Hassan 2012; Wang *et al.*, 2012; Jaafreh & Al-Abedallat, 2012; Munizu, 2013; Jiménez-Jiménez *et al.*, 2015; Homaid *et al.*, 2015; Al-Dhaafri *et al.*, 2016) or as a multidimensional construct (for example, Idris, 2011; Irfan & Kee, 2013) had proven the significant role of TQM implementation in organization performance. However, there are studies which reveal the failure of TQM strategy to achieve the desired outcomes or only has the indirect effect on organization performance (for example, Demirbag *et al.*, 2006; Kober *et al.*, 2012; Akgün *et al.*, 2014). The studies that reported significant relationship highlight that not all the TQM practices impact organization performance positively and significantly (for example, Fotopoulos & Psomas, 2010; Jaafreh & Al-Abedallat, 2012; Valmohammadi, 2011; Zehir *et al.*, 2012; Talib *et al.*, 2013). The reasons for the conflicting findings concerning the effect of TQM are probably due to the different methods, the different TQM variables, the different performance measures and the different contexts in which they were performed.

The study by Sadikoglu and Olcay (2014) is good to prove the point of differences. Sadikoglu and Olcay (2014) carried out an empirical study aiming at investigating the impact of TQM practices on different organization performance measures in Turkey. After reviewing literature, they identified six factors related to TQM namely leadership, knowledge and process management, training, supplier quality management, customer focus, strategic quality planning. Based on 242 samples collected from the manufacturing and service sectors, the findings reveal that different TQM practices affect different organization performance measures. They suggest that the synergy among the TQM practices brings out superior improvements in the organization performance.

Alnasser *et al.* (2013) carried out an empirical study to examine the relationship between hard TQM practices (process management, information quality and analysis and strategic planning) and organizational performance. The data has been collected from the respondents in five developing countries (Egypt, Jordan, Qatar, Saudi Arabia and Turkey). Their findings prove that TQM practices positively impact the performance; however, there is a significant difference in organization performance mean among these countries.

On the other hand, it was argued that TQM strategy can be implemented and applied by any firm regardless of its size (Powell, 1995) so there are a number of TQM scholars who have carried out studies on SMEs performance (Mahmud & Hilmi, 2014). For example, Kaur and Sharma (2014) investigated the effects of the six TQM practices, including leadership, supplier relationship, people management, customer focus, process management and quality measurement planning on the performance of SMEs in India. A statistical analysis on 134 samples showed the positive link between the practices of TQM and SMEs performance.

Valmohammadi (2011) also conducted a study to investigate the relationship between the CSFs and SMEs performance in Iran. Seven CSFs have been identified which are leadership, process management, supplier, customer focus, employee management, communication and quality information system and tools and techniques. Based on 65 samples from the manufacturing sector, the results revealed that leadership and process management have significant effects on the performance of SMEs. Moreover, Salaheldin (2009) carried out a study investigating the link between TQM and the performance of SMEs. The findings revealed that there is a

significant relationship between TQM and both measures the operational and the organizational performance. This indicates that small and medium firms can benefit from TQM strategy, however, there is still a little known about the effect of TQM practices on these enterprises (Kaur & Sharma, 2014) and it is even less in microfinance sector (Homaid *et al.*, 2015).

To conclude this section, the literature reveals that there are two streams of research concerning TQM-organization performance link. The first one assumes that the synergy and complementarity among TQM practices lead to improved performance so that there is a need to examine the impact of TQM practices as a single construct. This view is supported by authors such as Karia and Asaari (2006) and Prajogo and Hong (2008). The second stream assumes that TQM practices should be examined individually in order to get a deep understanding about the significant level of each practice (Salaheldin, 2009; Talib & Rahman, 2011; Rohaizan & Tan, 2011). The literature has also confirmed the significant role of TQM practices on organization performance. Nevertheless, a few studies have reported the inconsistent findings related to this relationship, but these studies were carried out in different economic sectors and none of these studies have taken into considerations the whole picture of organization performance, not to mention, within microfinance sector. Moreover, TQM strategy had been applied to large, medium and small firms. Thus, this study considers TQM as the independent variable, either single or multidimensional construct, to affect the MFIs performance. Specifically, this study intends to examine the effect of TQM as a composite variable and each practice of TQM, namely leadership management, customer focus, strategic planning, training, continuous improvement, benchmarking and quality culture on the performance of MFIs.

2.4.2 Market Orientation (MO) and MFIs Performance

2.4.2.1 Marketing and MO Concept

The concept of marketing and its interpretation has evolved over the years of its use. For example, Felton (1959) focused more internally when he defined marketing concept as the corporate state of mind that requires the integration and coordination of all of the marketing functions in an organization that result in achieving organization's objectives and maximize profits. For McNamara (1972), the marketing concept was considered as a business management that widely accepts the need for customer orientation, profit orientation, and recognition of the significant role of marketing in communicating the needs of the market to all major corporate departments. Houston (1986) defined marketing concept as a willingness to recognize and understand the potential customer's needs and demands as well as adjusting any of the marketing mix elements to satisfy these needs and demands.

Sin, Tse, Yau, Chow, and Lee (2003) stated that the marketing concept consists of three main pillars: (i) customer philosophy (determination and satisfaction of the needs and demands of target customers), (ii) goal attainment (accomplishment of an organization's goals via satisfying customer needs and (iii) integrated marketing organization (integration of all functional areas of the organization to achieve corporate objectives by satisfying the demands and needs of customers). Osarenkhoe (2008) suggests that market-oriented organizations can apply a customer-intimacy which defines special organizational culture that takes into account the customer at the centre of the organization's thinking in strategy and operations. Thus, a study

should view the marketing concept as the business philosophy or a culture that is widely accepted and applied in every aspect of an organization's operations.

The concept of market orientation originated from the application of marketing concept, which is regarded as critical for the organization survival and success (Mahmoud, Kastner, & Akyea, 2011). Ruekert (1992) defines the level of market orientation in a business unit as the degree to which the business unit (i) generates and uses information from customers; (ii) designs a strategy that satisfies customer needs; and (iii) ultimately implements a responsive strategy to customer needs and wants. While Deshpandé, Farley and Webster (1993) view MO as the body of beliefs that puts the customer's interests first, however, the other stakeholders such as owners, managers, and employees should not be ignored totally. This, thus, builds a long term profitable business. For Day (1990), MO can be defined as something that relates to the outstanding skills used by a business to understand customers' needs and attain their satisfaction.

According to Upadhyay and Baber (2013), the two definitions provided by Kohli and Jaworski (1990) and Narver and Slater (1990) are the key definitions of MO. Kohli and Jaworski (1990) defined MO as *"the organization-wide generation of market intelligence pertaining to current and future needs of customers, dissemination of intelligence within an organization and responsiveness to it"*. With this definition, MO can be measured and operationalized through three constructs namely intelligence generation, intelligence dissemination, and respond to market intelligence. Meanwhile, another definition suggested by Narver and Slater (1990) is slightly different. They defined MO as *"the organizational culture that most*

effectively and efficiently creates the necessary behaviours for the creation of superior value for buyers and thus superior performance for business”. Based on the above definition, MO needs to be classified into three dimensions: (i) customer orientation, (ii) competitor orientation and (iii) inter-functional coordination.

From the above discussions and definitions, it is clear that all definitions indicate the customer is the centre of the focus. These definitions have clear actions towards the customers, meaning that, they are being responsive to customers’ needs and demands; however, they give different focus on different organizational elements. Ruekert (1992) emphasized more on the organizational strategy process, Deshpandé *et al.* (1993) focused the business culture which emphasizes competitiveness and market superiority, and Day (1994) emphasized on organizational skills. Kohli and Jaworski (1990) emphasized on the information processing actions and Narver and Slater (1990) concentrated on cultural-behavioural components.

According to AL-Dmour *et al.* (2012), Upadhyay and Baber (2013) and Altuntaş *et al.* (2013), the two definitions proposed by Kohli and Jaworski (1990) and Narver and Slater (1990) are the most predominant ones in the MO literature. Sin, Tse, Heung and Yim (2005) mentioned that the two conducted a lot of researches to generate a valid measurement scale and empirical testing of MO construct. Their contributions have become a turning point of focus from describing and conceptualizing the marketing concept as a business philosophy to a theory testing focus where empirical evidence is gathered and analyzed (Goldman & Grinstein, 2010). Liao, Chang, Wu and Katrichis (2011) suggest that a number of research works have been dramatically and extensively carried out, and published in MO

literature, are a result of these contributions that provided operational definitions, measurement scales and a purposed theory of MO. Thus, the majority of studies carried out regarding the MO have used either a cultural perspective provided by Narver and Slater (1990) or a behavioural perspective provided by Kohli and Jaworski (1990) (Theodosiou, Kehagias, & Katsikea, 2012).

The cultural perspective, formulated by Narver and Slater (1990), conceptualizes MO as a part of organizational culture that generates the necessary behaviours for the creation of superior value for customers, which result in permanent outstanding performance (Rojas-Méndez & Rod, 2013). Narver and Slater (1993) also propose the MO model MKTOR, which consists the three behavioural dimensions of the MO; (a) customer orientation which enables the firm to obtain sufficient knowledge and understand the needs of the target market in order to create superior value for both current and potential customers, taking into account their present and future needs; (b) competitor orientation which enables the firm to regularly monitor competitors activity related to their strengths and weaknesses, and the long-term capacity and strategies. This enables the firm to assess the rivals' capacity to achieve better customer satisfaction; (c) inter-functional coordination which relates to sharing and dissemination of market information throughout the firm operations and functions, where all the resources of the firm should be utilized in an integrated system and geared towards generating superior value for the customer.

The behavioural perspective, formulated by Kohli and Jaworski (1990), conceptualizes MO as a set of organizational behaviours which are necessary for creating superior value for customers and continuous superior organization

performance. Kohli, Jaworski and Kumar (1993) propose the MO MARKOR model which includes the three specific activities to operationalize MO namely, (i) intelligence generation, which refers to collecting information about the market; (ii) intelligence dissemination, which refers to how and to what extent the generated market intelligence is communicated across the organization so as to create a common understanding and unifying focus within the organization and (iii) responsiveness, which refers to the actions made by the firm to respond to the market conditions in terms of selecting target markets, developing products and services.

The concept of MO proposed by both Narver and Slater (1990) and Kohli and Jaworski (1990) provide the operational definition of MO according to their perspectives which are similar in many ways. For example, both perspectives view MO as a continuous variable which concentrates on generating information and emphasizing the significance of collective efforts in creating value for customers and then achieve competitive advantage (Julian *et al.*, 2014). They also view MO as a three dimensional variable.

However, important differences between the two perspectives exist. First, the cultural perspective views MO as an organizational culture, which encourages norms, values behaviours towards customers and competitors with the objective of gaining profit, whereas the behavioural perspective view MO as a set of behaviours, which implements the marketing concept, specifically generating of market intelligence related to current and future customer needs, dissemination of the intelligence in all different departments, and organization-wide responsiveness to market intelligence (Kirca, Jayachandran, & Bearden, 2005). Second, the cultural

approach considers the crucial role of the sale forces whereas the behavioural perspective considers the whole organization to be involved and progressed step by step (Hajipour, Rahimi, & Hooshmand, 2012).

As mentioned earlier, the “MARKOR” scale and the “MKTOR” scale are the most widely used by researchers in the MO literature which were developed by Kohli, Jaworski, and Kumar (1993) and Narver and Slater (1990) respectively (Shoham, Ruvio, Vigoda-Gadot, & Schwabsky, 2006). However, the MARKOR scale seems to outperform the MKTOR providing greater explanatory power for explaining business performance variance (Cano, Carrillat, & Jaramillo, 2004). Moreover, Matsuno, Mentzner and Rentz (2005) had found that the MARKOR scale is superior to both the “MKTOR” scale and the new extended MO scale. Based on 56 MO studies originated from 28 countries, Ellis (2006) had found that the impact of MO on organizational performance is stronger when using the MARKOR scale than the MKTOR. In the same year, Shoham *et al.* (2006), who conducted a meta-analysis to assess the MO in non-profit organization sector analysing 15 prior studies, found that using MARKOR scale among other scales lead to a stronger relationship with performance comparing to other ones.

In the same direction, Vieira (2010) analysed 27 studies reporting that MO-performance link is stronger when measuring the MARKOR scale. A more recent study conducted by Rojas-Méndez and Rod (2013) reports that both MKTOR and MARKOR scales have similar level of predictive power when performance measured with subjective or perceptual measures. However, the MARKOR scale is stronger in explaining changes in performance when using objective measures. On

the other hand, Kirca *et al.* (2005) do not support the MARKOR scales suggesting that the link between MO and performance is stronger when measured by MKTOR scale than the MARKOR scale. Ironically, Shoham, Rose and Kropp (2005) report that there are no variances or significant differences between the three types of MO scales namely MAKTOR, MKOR and other scales.

This study adopts Kohli and Jaworski (1990) concept of MO and MARKOR scale for at least four primary reasons. First, Kohli and Jaworski (1990) concept emphasizes the entire organization should be involved in the processes and activities (Hajipour *et al.*, 2012). Second, this concept explains the MO construct briefly with clear and explicit activities (Upadhyay & Baber, 2013). Third, it is argued that generating information, disseminating it and responding to the customers, competitors and market condition is faster and cheaper than trying to establish or change organization culture (Ogunnaike, Akinbode, & Onochie, 2014). As such, the behavioural perspective enables the organization to gain a greater immediate return with less effort which could be the base for organizational culture or cultural change. Fourth, MKTOR scale seems to outperform the MARKOR scale in terms of variance explained and more generalized (Cano *et al.*, 2004; Matsuno *et al.*, 2005; Ellis; 2006; Shoham *et al.*, 2006; Vieira, 2010; Rojas-Méndez & Rod, 2013).

To this end, MO can be viewed as a collection of behaviours or activities practiced by an organization specifically generating of market intelligence related to current and future customer needs as well as donors, dissemination of the intelligence across all departments, taking quick and wide actions towards responsiveness to market intelligence.

2.4.2.2 Market Orientation Dimensions

The MO concept as proposed by Kohli and Jaworski (1990) involves three main dimensions of intelligence generation, intelligence dissemination and responsiveness. They are discussed as follows:

Intelligence Generation

Intelligence generation towards the market is the starting point of the MO (Hajipour *et al.*, 2012). It involves collecting information about current and potential customers and other influential factors such as competition, regulation, technology and business environment which enables the organization to anticipate customers' needs and preferences (Boso *et al.*, 2013). For the MFIs, understanding the current and future demands of the customers, building customers' loyalty and attracting new customers is critical for the MFIs financial and social performance (Savescu, 2011).

According to Julian *et al.* (2013), generating information can be carried by formal and informal channels such as customer survey and build a good relationship with suppliers and government officials. Generating information is not the exclusive responsibility of the marketing department, but all the departments of the organization should be involved in this activity (AL-Dmour *et al.*, 2012). The permanent tracing of competitors, understanding the way they affect the customers and investigating the business environment are successful actions of market intelligence (Hajipour *et al.*, 2012).

Literature review on MO shows that intelligence generation is significantly related to organization performance (see Untachai, 2008; Hamadu *et al.*, 2011; Julian *et al.*, 2013). However, other studies did not support the significant effect of intelligence generation on organization performance such as Chao and Spillan (2010) and AL-Dmour *et al.* (2012) or mixed results based on the measurements of performance (Keelson, 2014). To conclude, the conflicting findings concerning this relationship in business organizations lead to the urgent need for examining such relationship in microfinance.

Intelligence Dissemination

The second dimension of MO is intelligence dissemination, which is very important because it provides common foundations to focus on different segments' activities in the organization (Hajipour *et al.*, 2012). It involves spreading and communicating information throughout the different departments of the organization (Julian *et al.*, 2013). Market, customer and competitor information can be disseminated via formal and informal communication mechanisms (Chao & Spillan, 2010). Moreover, it is crucial to disseminate that intelligence to the different departments and individuals in the organization periodically and in a timely manner (AL-Dmour *et al.*, 2012).

Empirically, intelligence dissemination was found to be significantly associated with organization performance (Hamadu *et al.*, 2011; AL-Dmour *et al.*, 2012; Julian *et al.*, 2013). However, other studies such as Untachai (2008) and Chao and Spillan (2010) found an insignificant connection between the two in business organizations. The inconsistent results regarding this relationship in business organizations indicate

the need to test this relationship in the microfinance sector. This study suggests that disseminating information creates synergies and deep understanding within the MFIs which enable them to respond effectively and accomplish the desired financial and social objectives.

Responsiveness

The third dimension of MO is responsiveness towards market intelligence, which includes proper actions by an organization to the market conditions by developing products and even designing and producing new products (Ogunnaike *et al.*, 2014). According to Hamadu *et al.* (2012), responsiveness consists of two activities: (i) response design, which requires developing the organizational plan and (ii) response implementation, which requires implementing the plan. It is a set of behaviours and actions made by the organizations as a reaction to generated and disseminated intelligence in which the whole organization responds to the current and future needs of the customers (AL-Dmour *et al.*, 2012). For the market-oriented MFIs, it is also crucial to respond to market intelligence by meeting the clients' needs and preferences and even making in their policies, rules and regulations (Agyapong, 2014).

Empirically, the studies of Untachai (2008), Chao and Spillan, (2010), Hamadu *et al.* (2011), AL-Dmour *et al.* (2012) and Julian *et al.* (2013) reported the significant effect of responsiveness on organization performance. This indicates that responsiveness is a significant variable in fostering performance in business organization; however, this relationship in microfinance has been ignored. Thus, this

study attempts to test this relationship for validating and generalizing the previous results.

2.4.2.3 MO and Organization Performance

For the unstable environment, adaptability and competitiveness are critical for the organization survival and success (Altuntaş *et al.*, 2013). Market Orientation (MO) has become one of the cornerstones of marketing literature and can be seen as the culture or activities of the firm that effectively create the behaviours needed for superior performance (AL-Dmour *et al.*, 2012). When an organization is market-oriented, provide rare value for customers and difficult to be imitated, it can be a sustainable source of competitive advantage, allowing the organization to outperform their less market-oriented competitors (Liao, *et al.*, 2011). MO facilitates an organization's ability to anticipate customer needs, react quickly to satisfy customers and adapt to environmental changes, herewith, leading to superior performance (Mahmoud & Yusif, 2012).

Although the vast majority studies show that MO is a critical organizational resource of competitive advantage of high performance, there exist different conclusions. For example, the bulk of studies confirmed the significant positive relationship between MO and various dimensions of performance (Kai & Xiaofan, 2010; Wang *et al.*, 2012; AL-Dmour *et al.*, 2012; Zebal & Goodwin, 2012; Altuntaş *et al.*, 2013; Boso *et al.*, 2013; Taleghani *et al.*, 2013; Protcko & Dornberger, 2014; Al-Ansaari *et al.*, 2015). However, there are studies reporting no significant link between MO and performance (Ghani & Mahmood, 2011; Qu, 2013). Moreover, while some studies

such as Hamadu *et al.* (2011) and Julian *et al.* (2013) confirmed the significant association between all the MO dimensions, other studies found only some dimensions of MO related to organizational performance (Untachai, 2008; Chao & Spillan, 2010; Al-Dmour *et al.*, 2012; Keelson 2014). Thus, there are many researchers who carry out studies to reinvestigate this relationship, in different contexts as well as using different contextual variables.

In the other stream of research, the meta-analysis studies have been conducted examining the relationship between MO and organization performance. For instance, Cano *et al.* (2004) conducted an analysis based on 53 empirical research works carried out in 23 countries across five continents. They revealed that there exists a significant positive relationship between MO and organization performance across countries. Interestingly, they cited that the result has not been affected by socioeconomic factors or national cultures. It is reported that the association between MO and organization performance is stronger in the case of adopting subjective performance measures comparing to objective measures. It is also true for the services firms comparing to manufacturing and between profit and non-profit organizations.

In the same vein of research, Shoham *et al.* (2005) identified 28 empirical studies published over the past 15 years in their analysis. The focus was given on the relationship between MO and the three constructs, the performance, loyalty and commitment of the firm. They found that the link between MO and these constructs to be positively significant. The link between MO and performance had been found to be strong, especially when using subjective measures. They suggest that the

geographical location has a significant impact on the explained variance in such relationship. From this finding, it can be assumed that the strength of this relationship depends on the context and country, expecting that this relationship is stronger in least developed countries. Ellis (2006) also conducted a met-analysis based on 56 studies originated from 28 countries. This study reported that a thorough link between MO and organization performance and it is moderated by measurement scales and contextual factors such as cultural and economic characteristics of the host country.

According to Raju, Lonial, and Crum (2011), although SMEs have many obstacles such as having limited resources and market access, they may have some unique advantages in facing the market threats in terms of their closer contact with customers and innovativeness. They also stated that SMEs can be highly market-oriented to compete with the large firms, making it valuable to obtain better understanding of MO in the market of SMEs. This argument is supported by Protcko and Dornberger (2014) who found that MO has a significant effect on both financial and non-financial performance of SMEs in Rusia. Al-Ansaari *et al.* (2015) also found that MO is significantly associated with the performance of SMEs in the market of Dubai. The finding of this study is based on 200 samples used for the analysis. However, Ghani and Mahmood (2011) carried a study investigating the link between MO and MFIs performance in Pakistan. The result of the study concluded that MO is not significantly related to MFIs performance. They also argued that MO is a context specific and, thus, its effect cannot be equally ensured in all settings.

In conclusion, adopting and implementing MO effectively can assist SMEs to gain success and better performance and this may apply to MFIs performance. Therefore, examining the impact of MO, as a composite and multidimensional construct, on the performance of MFIs is needed which provides new insight to the literature due to the following aspects: (i) the MO is a significant indicator for organizational performance whether they are large, medium or small (ii) the relationship between MO and organizational performance is questionable because of the inconsistent findings of studies related to this relationship (iii) the scarcity of studies in Middle East and North African region (MENA) particularly in Yemen and microfinance sector, as being discussed earlier, that MO is a context specific and it may be significant in a country and may not be significant in other countries.

2.4.3 Information Technology (IT) Capability and MFIs Performance

2.4.3.1 IT Capability Definition and Concept

The literature review reveals that the view of IT resources has received much support by IT scholars and proven to be an essential paradigm in IT area (Karimi Mazidi *et al.*, 2014). From this perspective, Fuerst and Barney (1995) proposed five IT resources, which are capital access, switch to customer cost, proprietary technology, technical and managerial IT skills to analyze competitive advantage. The scholars conclude that only IT managerial skills aspect is likely to be a source of sustainable competitive advantages.

Along these lines, Chi and Sun (2015) stated that the concept of IT capability was first introduced by Ross, Beath and Goodhue (1996) who defined it as the firm's

ability to control IT-related costs and deliver the IT systems when necessary to achieve the firm goals through IT implementations. They assumed that IT itself is not the only thing or requirement for the success of the firm but the capability to use IT in the ever-changing business opportunities. Ross *et al.* (1996) suggested that, in order to enhance this capability, a firm must consistently develop three IT-related assets, which are human assets, technology assets and the relationship assets. For Bharadwaj (2000), IT capability is viewed as the firm's ability to mobilize and deploy IT related resources together with other organizational resources and capabilities. This definition categorized firm IT resources into IT infrastructure (tangible resources), IT human resources (IT staff) and IT intangible resources.

Based on Bharadwaj's definition, Tippins and Sohi (2003) viewed IT capabilities as the extent to which a firm is equipped with IT objects, IT knowledge and IT operations. Ray, Muhanna, and Barney (2005) view IT capability as being consisted of two types of resources: (i) technological resources (raw IT investment, IT skills, and generic information technologies within the organization and (ii) Managerial resources that influence the way technological resources usage.

According to Bhatt and Grover (2005), IT capability can be formed of the technological capabilities (such as IT infrastructure), and more managerial capabilities such as competitive capabilities (such as IT business experience and relationship infrastructure) and the dynamic capabilities (such as intensity of organizational learning). They suggest that a high level of IT knowledge enhances the firm's ability to implement its strategy smoothly, develops dependable and cost effective systems and predicts the needs of clients.

In the light of the foregoing discussions about the IT capability definitions, this study adopts Tippins and Sohi (2003) definition, who suggest that IT capability to be seen as a set of IT resources comprising IT knowledge, IT objects and the effective IT operations, which can be employed by the organization to maximize the utilization of organizational resources and strategies in obtaining sustainability and competitive advantage so as to gain superior performance. The reasons are as the following;

1. This definition and classification goes in line with that of Bharadwaj (2000), which is the most acceptable definition among the IT scholars (Bi & Zhang, 2008; Liu, Lu, & Hu 2008; Chen & Tsou, 2012; Liu *et al.*, 2013).
2. The advantage of this scale is that it is well aligned with the RBV theory that helps in examining other organizational resources and capabilities (Gibb & Haar, 2007).
3. This kind of measurement has been proven to have a more significant effect on organizational performance compared to other measurements that can be categorized from integrated aspects (Liu *et al.*, 2013).
4. This classification and measurement has been used by many studies such as Li, Chen and Huang (2006), Pérez-López and Alegre (2012), Ringim *et al.* (2012) and Pebrianto (2013).

2.4.3.2 IT Capability Dimensions

The IT capability construct embraces three dimensions IT knowledge, IT objects (Infrastructure) and IT in operations (Tippins & Sohi, 2003). These dimensions are discussed as follows:

IT Knowledge

In general, knowledge was regarded as the most valuable asset because it helps in producing information from data or more valuable information from less valuable information (Makambe, 2015). Knowledge is a mix of framed experience, values and contextual information insight that provides a framework for evaluating and incorporating the unqualified new experiences and information (Davenport & Prusak, 2000). IT knowledge is a specific knowledge owned by the organization's members that can be reflected in the extent to which they understand fundamental IT concepts and informed about IT in their firms (Bassellier, Benbasat, & Reich, 2003). IT knowledge includes professional competency, experiences and technical skills such as programming, systems analysis, databases, network security and designing in the current emerging technologies (Ringim *et al.*, 2012). For this study, the general IT knowledge as the extent to which institutions or organizations obtain the technical knowledge framework related to IT objects like a computer-based system is considered suitable.

IT knowledge, one of the most important components of IT capability, plays a crucial role in organizations. Bhatt and Grover (2005) point out that IT knowledge is

needed for organizations as (i) it enhances a holistic understanding of knowledge needed within the business units (ii) it acts as a facilitator to identify knowledge resources that are applicable across multiple units and (iii) it motivates business units to invest not only in their own IT objects but also in boundary-spanning IT initiatives that are essential for acquiring and sharing knowledge processes. According to Pérez-López and Alegre (2012), IT knowledge determines the ability to assimilate knowledge from outside and create new knowledge from a reinterpretation and reformulation of existing and newly acquired information. Therefore, when the organizations' members are encouraged to adapt innovations such as IT, assimilate IT knowledge and use IT in their daily routine works, the outcomes will improve profit and thus the organization performance (Shao, Feng, Hu, & Liu, 2009).

IT Objects

A firm's IT objects, also known as infrastructure, is the key dimension of IT which improves basically the strategic flexibility of the organization and long-term competitive advantage (Lim & Trimi, 2014). According to Kim, Kim and Lee (2011), IT infrastructure is the backbone of business operation through which the businesses can meet the emerging challenges. IT objects enable the organization to deliver business applications and services, share information across different functions and respond to changes in business strategy (Chen & Tsou, 2012). They were regarded as tools and resources include hardware, software and support personnel that contribute to the acquisition, processing, storage, dissemination and use of information (Hasan, 2010; Pérez-López & Alegre, 2012). According to

Tippins and Sohli (2003), IT objects can be defined as the computer-based hardware, software and human support which are used in this study.

In today's business environment, the existence of a highly integrated IT infrastructure is of great value, as it assists the organizational employees to access to the right people and the vast information quickly and effectively in facilitating the process of transferring knowledge (Pérez-López & Alegre, 2012). According to Ivatury and Pasricha (2005), there is a wide range of technologies used by MFIs which can be classified into two categories (i) information system (IS) technology, which assist MFIs to track, analyze and report on their operations (ii) delivery technologies which help MFIs in facilitating electronic payments and transactions. These technologies include automated teller machines (ATMs), point-of-sale (POS) networks that facilitate electronic transactions by customers (payments, transfers, cash withdrawals and cash deposits from outside the branch offices) (Rai, 2012).

According to Visconti and Quirici (2014), management information system (MIS) is considered as a fundamental information technology innovation for the MFI to monitor the quality, sustainability and efficiency of its loan portfolio, to monitor the development impact, and to manage general administrative tasks. Rao (2005) refers that information communication technologies (ICTs) have a great effect on the MFIs in terms of efficiency (making specific MFIs tasks faster, cheaper, at lower cost, less workforce), effectiveness (MFIs services become more interactive, with fewer errors, customized, researchable, achievable and transparent) and in innovation aspect (MFIs to provide new products, new services, new customer bases and new valuable propositions). To this end, IT infrastructure is a crucial factor since it helps in

capturing information, creating new information, storing information and transferring data (Rai, 2012).

IT Operations

IT operations, as one of the IT capability dimensions, are fundamental as they enable organizations to manage their customer bases effectively, keep information about customers in a more organized manner and share knowledge efficiently across the organization units (Pérez-López & Alegre, 2012). IT operations require IT application in business processes that include IT functions, coordination and interaction with the user community (Ringim *et al.*, 2012). IT operations can be thought as the methods, skills, and process required for achieving the organizational goals (Hasan, 2010). Within the context of this study, IT operations are viewed as the extent to which an institution or organization employs IT to manage both market and customer information.

According to Bharadwaj (2000) and Zhang, Sarker and McCullough (2008), effective IT operations involve skills mainly core technical skills, managerial skills and problem-solving skills. IT involves IT objects such as hardware, software and support personnel which without these objects the IT operations are impossible to achieve the stated tasks (Tippins & Sohli, 2003). The ability to utilize IT competencies requires IT knowledge and skills that facilitate more strategic initiatives and meeting the marketplace demands and (Chakravarty, Grewal, & Sambamurthy, 2013).

2.4.3.3 IT Capability and Organization Performance

The role of IT is undeniably important and its capability was considered as a key element in an organization to foster performance (Pebrianto, 2013; Liu *et al.*, 2013). Furthermore, it had been recognized to provide a basis of obtaining a competitive advantage (Bhatt & Grover, 2005; Chi & Sun, 2015). A large body of IT capability literature concurs that IT capabilities are the most valuable resources to facilitate an effective collection and utilization of information (Bharadwaj, 2000). Moreover, IT capability construct was related to the firm performance through increasing efficiency, decreasing long term cost, evolving service reliability and decreasing transaction errors (Tippins & Sohi, 2003). According to Lin (2007), IT capability increases the firm's ability to monitor the environment, improves information quality for decision making and creates the superior path to earn profit. In addition, IT capability plays a pivotal role in almost all aspects of the firm's operations and corporate strategies, and for many organizations, IT capability was regarded a primary asset if not the most significant strategic one.

Despite the widely held belief that IT is crucial to a firm's survival and growth, some studies reported contradictory findings regarding the direct link between IT investment and firm performance (Liu *et al.*, 2013). For example, Thouin, Hoffman and Ford (2008) found that IT budgetary expenditures as well as IT services outsourced are significantly related to firm financial performance. These results are based on analysis of archival survey data for 914 Integrated Healthcare Delivery Systems in USA. More recently, a study conducted by Al-Saraireh (2013) to investigate the impact of IT investment on the performance of Jordanian industrial

companies, in terms of administrative decision-making, financial and operational processes and competitive advantage, shows that IT investment is positively associated with both administrative decision-making, financial and operational processes. The study reports the findings from 138 sample data collected from 20 industrial companies listed on the Amman Stock Exchange. However, it reports that IT investment is not a significant predictor to create the competitive advantage for the organizations.

On the contrary, there are some empirical studies reporting that spending on IT does not add any value to the business. For example, Ray *et al.* (2005) reported that the direct impacts of three different IT resources (technical skills of IT unit, managers' technology knowledge, and IT spending) were not confirmed on the customer service process performance of the life insurance companies in North America. In the same stream of research, Huang (2007) found that IT investment was not positively and significantly associated with the performance of the Small and Medium Enterprises (SMEs) in the rubber industry. These conflicting findings lead to much debate on IT-performance relationship, which is known among IT scholars as IT investment blank hole or IT investment paradox (Liu *et al.*, 2013). According to Budzier and Flyvbjerg (2011), the inconsistent findings suggest that the relationship between IT investment and firm performance is much more complicated than previously thought; as such the issue argued remains debatable for years to come.

Many IT experts have shifted their focus on resource-based view (RBV) to be one of the key theoretical perspectives to answer the inquiry related to how and why IT

affects firm performance (Liu *et al.*, 2008, Pérez-López & Alegre, 2012; Liu *et al.*, 2013; Karimi Mazidi *et al.*, 2014). According to this perspective, resources that are valuable, rare, perfectly inimitable, and non-substitutable can only enable firms to sustain their competitive advantage and superior performance constantly constant over time (Liang *et al.*, 2010). It was argued that using resources to implement strategies, the capabilities can be leveraged to achieve competitive advantage (Barney & Clark, 2007). Based on this perspective, Bharadwaj (2000) viewed IT capability as the competence owned by a firm to mobilize and deploy IT-related resources in combination with the other organizational resources and capabilities. This definition has been argued to become the most widely used among IT scholars in recent years (Liu *et al.* 2013).

In line with the above discussion, the dynamic capability perspective, which is originally based on the RBV theory, further emphasizes on the significance of resource and competence configuration, coordination, integration and transformation in creating value to the business particularly when the path of success is vague (Liu *et al.*, 2008). The firms that integrate IT resources to create discrete capabilities contribute to sustainable competitive advantage. According to Chi and Sun (2015), IT resources cannot provide organizations sustainable competitive advantage by itself, and IT capability (the ability to integrate and deploy IT resources) is one of the crucial factors to help organizations obtain a long-term competitive advantage. Since a firm's capabilities are not easy to be replicated or imitated compared to firm's resources, so it is suggested the "IT capability" term or concept to explain the value of IT as part of the capabilities of the firm.

Based on this concept, there are extensive research works on the role of IT capability in the firm performance, Liu *et al.* (2013) mentioned that there were only few quantitative studies that provide accepted results on the co-relationship between these two varieties, the relative degree or the path. Some quantitative studies have reported that firms with superior IT capability are associated with significantly higher and superior performance (Bi & Zhang, 2008; Yu & Xin-quan, 2011; Ong & Chen, 2013; Karimi Mazidi *et al.*, 2014). Lin (2007) elaborated further when he carried out a cross-sectional study examining the impact of both IT capability and human capital investment on overall value-creation performance of banking firms in the U.S. When analyzing a sample of 155 banking firms, both IT capability and human capital investment are significantly and directly associated with the overall banking firms' performance with all five measures namely ROE, MVA, EVA, Tobin's Q, and market-to-book ratio.

A more recent quantitative study conducted by Ong and Chen (2013) discussed about the influence of IT capability on three constructs of firm performance, namely firm performance, future firm performance, and firm value. Their study that covers 480 matched-firms and secondary data from Information Week (provides the IT capabilities ranking) and Compustat database (provides financial data), reveals that IT capability significantly influences all the three constructs. They suggest that the significant level of firm value is higher than that of both firm performance and future firm performance, indicating that IT capability was more related to firm value (growth opportunities, intangible assets and innovation) than performance.

On the contrary, some studies argued that IT capability can only influence the firm performance indirectly through some mediating variables. For example, a study conducted by Tippins and Sohi (2003) (data from managers in 271 manufacturing firms in U.S) shows that the link between IT capability (called as IT competency in this study) and firm performance is mediated significantly by organizational learning.

Pérez-López and Alegre (2012) concluded that direct relationship does not exist between IT capability and firm performance; however, IT capability influences the market performance indirectly through knowledge management processes. Zhu and Nakata (2007) suggested that IT capability is not associated directly with market performance in industries classified under 510 SIC codes (food manufacturing, financial services, advanced electronics, and heavy machinery) in the U.S.

Based on the discussion above, it is clear that the role of IT capability towards the firm performance is complex and with diverse findings. It can be argued that the effect of the IT capability on the organization performance is not consistent. Therefore, attempts to investigate the effect of IT capability on the performance of organizations such as MFIs could provide the foundation to explain how IT capability affects organizational performance and add to the literature. The mediating effect can also be examined by linking the test on the independent variables under investigation.

2.5 Review on the Relationship among the Variables

2.5.1 TQM and IT capability

TQM practices had been recognized to be crucial not only for quality implementation, but for building a large variety of organizational capabilities (Prajogo & Hong, 2008; Yusr *et al.*, 2012). For example, Perdomo-Ortiz, Gonzalez-Benito and Galende (2006) carried out a study in Spain that reported the significant role of TQM in the industrial sector on innovation capability. It also provided evidence on the effect of innovation capability as a mediator rather than a moderator on the relationship between TQM and technological innovation. Another study conducted by Yusr *et al.* (2012) investigating the impact of TQM on marketing capability, which such relationship was confirmed to be significant. It also reported that the mediating effect of marketing capability on the link between TQM and innovation performance was supported. The data collected for their study were from the Malaysian manufacturing companies.

In examining the mediating effect of learning capability on the link between TQM and business innovativeness, a more recent study by Akgün *et al.* (2014) conducted in Turkey shows that TQM has a significant impact on learning capability in the context of multi-sectors. A study of Yusr *et al.* (2014) also proved that the link between TQM and technological innovation capabilities was established when they conducted research on manufacturing companies in Malaysia. Another more recent study by Jiménez-Jiménez *et al.* (2015) also found that TQM has a significant effect on exploitation and exploration capabilities, learning capability. To conclude, it was supported that TQM can affect different organization capabilities such as innovation

capability, marketing capability, learning capability and technological innovation capabilities.

Within the context of this study, it was argued that TQM practices such as management leadership, customer focus, strategic planning, education and training, continuous improvement, benchmarking and quality culture, play a leveraging effect on IT capability including IT knowledge, IT objects and IT operation. For instance, the role of top management leadership is essential to improve organization capabilities as top management should be committed to provide the needed requirements in order to achieve better quality performance (Ahire & O'Shaughnessy, 1998; Ab Wahid, Corner, & Tan, 2011). This orientation, in turn, inspires the interest of top management to improve employees' IT knowledge and update the organization with new technologies which support the different operational processes within the organization. Jaafreh and Al-abadallat (2012) suggest that strategic planning allows organizations to identify the priorities and allocate resources, which IT-related resources are among them, for obtaining the objective of the organization.

Furthermore, TQM principles help organizations to develop the employee's skills, capacities and knowledge through undertaking different types of training programs (Jones & Grimshaw, 2012). It was also stated that training was one of the core TQM elements to spread knowledge and help in the continuous improvement, enhancement and innovation within the organization (Talib *et al.*, 2013). Specifically, all employees are in need for training programs in IT, which increase their work quality and job satisfaction (Brah & Lim, 2006). This is because of the

training role in improving the skills of employees to use IT effectively, which will be reflected in the service quality.

To this end, the relationship between TQM and organization capabilities was said to be established. It was supported strongly by RBV and dynamic capability theories. Although the literature examining the impact of TQM on organization capabilities is limited (Yusr *et al.*, 2012), and testing the effect of TQM on IT capability is generally scarce, the condition in the microfinance sector is expected to be even worse. Thus, this study suggests that TQM, include different practices, should be examined to improve organization capabilities with emphasis to the IT capability.

2.5.2 MO and IT Capability

Generally, marketing has been recognized as a critical area in which organizations must develop dynamic capability (Wang *et al.*, 2013). It is suggested that dynamic capability perspective should be employed with Market Orientation (MO) in order to identify key capabilities for organizations to be market-oriented (Foley & Fahy, 2009). Previous studies reported that MO has a positive and significant association with a number of organization capabilities, for example, Hooley *et al.* (2005) suggest that MO is a significant predictor of both management capability and customer-linking capability. Ngo and O'Cass (2012) found that MO was a significant influential construct on marketing capabilities. A more recent study carried out by Fang *et al.* (2014) also reported that MO was a crucial antecedent of external capabilities, including market-sensing capability and customer-linking capability.

It was argued that MO effect was not limited only to customers, but it was also a facilitator for technology-based innovations. It had been empirically found that MO has a significant facilitator to innovations that use sophisticated technology and provide better benefits to the customers (Zhou, Yim, & Tse, 2005). It is also stated that market-oriented organizations adapt to changes in the environment and occupy a prominent position through leveraging the technology, resources and customer relationship management (Morgan & Berthon, 2008). A study done in Taiwan by Wang *et al.* (2013) showed that MO has a positive and significant relationship with IT support for customer relationship management.

Based on the discussion above, it can be said that MO can build and improve organization capabilities such as management capability, customer-linking capability, marketing capabilities, market-sensing capability and customer-linking capability. In addition to that, MO can be an enabler for innovations that use technology, leverage technology within the organization and affect IT that support customer relationship management. However, it is found that prior research has ignored the effect of MO on IT capability, although there are theoretical and empirical supports reporting on the significant effect of MO. This indicates the existence of knowledge gap in the literature, particularly in microfinance discipline.

2.5.3 The Potential Mediating Effect of IT Capability on both TQM, MO and MFIs Performance

Hemmatfar, Salehi and Bayat (2010) and Ghobakhloo et al. (2012) had confirmed that IT is a pivotal factor that can be utilized by a firm in most of its operations and corporate strategies. It is regarded as the major strategic asset, if not the most

significant one in the majority of industries (Lin, 2007). Moreover, IT capability in combination with other organization resources and capabilities can create a positive synergistic impact on firm performance, which is not easy for competitors to imitate or find substitutes for (Liang et al., 2010; Homaid et al., 2015). The question arises here is that how IT capability contributes to the firm performance and in which condition. Thus, this study attempts to answer this question by positioning IT capability as a mediator of the relationship between both TQM and MO, and MFIs performance. This claim is based on the fact that IT is capable to be a key enabler of such resources and strategies.

As highlighted earlier, IT capability has been argued to be associated significantly with superior performance within organizations (Bi & Zhang, 2008; Yu & Xin-quan, 2011; Ong & Chen, 2013; Karimi Mazidi et al., 2014). The firms with superior IT capability can facilitate an effective collection and utilization of information (Bharadwaj, 2000). According to Lin (2007), IT capability can increase a firm's ability to monitor the environment, improve information quality for decision making, and create the superior path to earn profit. Ong and Chen (2013) suggest that IT capability is a significant indicator of different firm performance measures, including firm performance, future firm performance and firm value. IT capability has an influential role on service process innovation, employees' satisfaction and firm performance (Karimi Mazidi *et al.*, 2014).

In addition to IT capability, TQM has also been recognized as a critical strategy for the survival, growth of the organization and a source of competitive advantage (Nair, 2006; El Shenawy, Baker & Lemak, 2007; Irfan & Kee, 2013; Kaur & Sharma,

2014). This is because the TQM strategy has been confirmed to improve effectiveness, flexibility and competitiveness of a firm that meets customers' needs (Chandra, 2013). According to Kaynak (2003), Kumar et al. (2009) and Zu (2009), TQM also can generate improved products and services, lead to more customer and employee satisfaction, reduce costs, improve financial performance and enhance competitive position and increase productivity, improve financial performance and enhance competitive position and increase productivity.

Although the majority of research works proved the significant and robust link between these two constructs, there has still been an unresolved debate related to this relationship, with mixed and inconsistent results (Nair, 2006; Zehir et al., 2012; Ahmad, Zakuan, Jusoh, Tasir, & Takala, 2013). Therefore, researchers are recommended to pay more attention to some organization factors which can enhance and explain better the relationship between TQM and organization performance (Douglas & Judge, 2001; Ehigie & McAndrew, 2005), and in line with this, scholars carried out studies to investigate the direct relationship in new contexts for more generalization or for a moderated link and a mediated direct relationship in new contexts for more generalization or for a moderated link and a mediated relationship.

TQM practices have also been proven to be an effective for not only quality implementation and enhancement, but for building a wide range of organizational capabilities (Prajogo & Hong, 2008). For instance, studies have concluded that TQM has a significant impact on the innovation capability (Perdomo-Ortiz et al., 2006), marketing capability (Yusr et al., 2012), learning capability (Akgün et al., 2014), technological innovation capabilities (Yusr et al., 2014) and on exploitation and

exploration capabilities (Jiménez-Jiménez et al., 2015). TQM practices and implementations in the organizations help in providing environment to create distinctive capabilities (Perdomo-Ortiz et al., 2006). Organizations help in providing environment to create distinctive capabilities (Perdomo-Ortiz *et al.*, 2006).

Moreover, tracing back to an earlier claim made by Weston (1993), who stated that TQM depends heavily on IT that acts as a feedback mechanism and facilitates communication and implementation of advanced tools, systems and techniques. It shows that both IT and TQM are complementary resources as IT allows organizations to adopt TQM to manage “quality related knowledge” effectively and efficiently, which in turn improve quality performance (Sánchez-Rodríguez & Martínez-Lorente, 2011). This is because IT plays an important role in knowledge creation process as a key facilitator of organizational memory and the ability to capture and integrate explicit knowledge by making it easy to codify, communicate, assimilate, store, and retrieve. Moreover, Brah and Lim (2006) point out that IT also serves as an enabler to quality performance, as it helps to improve customer relationship management. It is expected that application of IT in quality management will improve the operational tasks of quality management and, hence, increase quality outcomes. Thus, the role of IT in quality improvement is crucial as it increases the quality outcomes, awareness, provides online information about the quality level and reduces quality costs (Khanam *et al.*, 2013).

Based on the discussion above, this study suggests that TQM practices create a conducive environment for enriching employee knowledge, allocating necessary resources and identifying priorities. It includes IT knowledge, necessary IT objects

and building an effective IT system which leverage the impact of IT capability which in turn lead to superior performance. In other words, the link between TQM and organization performance can be explained by integrating the mediating role of IT capability. IT capability is critical because it integrates and deploys IT-related resources in combination with other resources and capabilities to create value other resources and capabilities to create value.

Moreover, it is also stated that the relationship among organization capabilities, resources and performance is complex and capabilities can be used as mediators in the relationship between organization resources and performance (Lu *et al.*, 2010). Examining the mediating effect of IT capability on the link between TQM and MFIs performance has been neglected in the literature which will minimize the gaps and open a new door for further research and knowledge in the area.

Similarly, market orientation (MO) is recognized to be a source of competitive advantage of the organization (Kumar, Jones, Venkatesan, & Leone, 2011; Julian *et al.*, 2014). Recent meta-analysis studies showed that there is a positive, significant and solid relationship between MO and organization performance (Cano *et al.*, 2004; Matsuno *et al.*, 2005; Ellis; 2006; Shoham *et al.*, 2006, Vieira, 2010; Rojas-Méndez & Rod, 2013). However, while there is rigorous empirical evidence on MO and performance linkage, little understanding is known concerning the deployment of MO with other organization capabilities to gain competitive advantage (Morgan *et al.*, 2009). Therefore, the research focus has recently shifted from the resources to the outcomes of the resource deployment processes with capabilities (Vorhies, Morgan, & Autry, 2009). Consequently, there is a growing research work related to

organization capabilities (Slater, Olson, & Hult, 2006) and how these capabilities and resources are integrated and deployed to complement each other and contribute to organization performance (Morgan *et al.*, 2009).

In line with this, it was argued that MO can build a variety of organizational capabilities (Fang *et al.*, 2014). Some studies have recently been carried out to investigate the impact of MO on organization capabilities such as management capability and customer-linking capability (Hooley *et al.*, 2005), marketing capabilities (Murray *et al.*, 2011; Ngo & O'Cass, 2012) and on external capabilities including market-sensing capability and customer-linking capability (Fang *et al.*, 2014). It is also stated that MO can be an enabler for innovations that use high technologies besides customer satisfaction (Zhou *et al.*, 2005). Moreover, market-oriented organizations can leverage the technology, resources and build a strong relationship with both customers and suppliers in order to be in a prominent position and adapt to the turbulent environment (Morgan & Berthon, 2008). Thus, IT capability as a part of organizational capabilities, this capability allows the organizations to adapt to the changes in the market, deliver better service and build a good relationship with customers.

Thus, MO should be capitalized through appropriate organization capabilities as the requirements to achieve better performance (Hooley *et al.*, 2005; Murray *et al.*, 2011). It is argued that the realizing impact of MO on performance depends on how well organization capabilities are deployed and acted as a mechanism to explain this relationship (Ngo & O'Cass, 2012; Fang *et al.*, 2014). Within this study, it is suggested that when MO is accompanied by distinctive and appropriate capabilities,

such as IT capability, it may result in competitive advantage, including better information generation, dissemination and responses to the needs of the customers and then superior performance achievement. Here, IT capability is postulated to be an influential mediator on the relationship between MO and MFIs performance. This is in line with RBV theory, capability theory and complementarity theory.

To this end, it is evident that there is a need to position IT capability as a mediator to the relationship between TQM and MO with MFIs Performance. It is expected to leverage the mentioned relationship. This should be viewed as a complex relationship between resources and capabilities, and solve the inconsistent findings related to TQM, MO and performance.

2.6 Underpinning Theories

The main purpose of the study is to examine the mediating effects of IT capability on the relationship between both TQM and MO with the MFIs performance. Due to the nature of variables under this study, various underpinning theories can be assigned to theoretically support the framework of the study which are the resource based view (RBV) theory, dynamic capability theory and complementarity theory. However, the RBV theory is chosen to be the fundamental underpinning theory for this study while the other two are employed to support it. The next subsection presents these theories with the supportive arguments highlighting how the framework of this study is supported by the chosen theories.

2.6.1 Resource-Based View (RBV) Theory

The resource-based view (RBV) of the firm has gained prominent attention to be the major theory in strategic management (Galbreath, 2005, Liang *et al.*, 2010; Almarri & Gardiner, 2014). The evolution of RBV has been flourished by the writings of Penrose in 1959 who viewed a firm as a pool of resources, which are responsible for creating the basis for growth only when they are organized into their best use (Penrose, 2009). Rubin (1973) argued that the business expansion and growth was formalized economically with the assumption of firm-specific resources. The works of both Penrose and Rubin laid to the foundation to formalize the RBV in Wernerfelt's (1984) study. The theory suggests the success of a firm in the market is a result of the possession of unique and superior internal resources. In short, RBV's basic argument is that obtaining a competitive advantage by a firm is basically determined by the key and unique resources possessed by the firm.

Various definitions can be found to define the firm's resources. In the early stage of the theory, Daft (1983) defined the firm's resources as all firm's assets, capabilities, processes, attributes, information, and knowledge and so on which are controlled by the firm to be able to visualize and implement its strategies that improve its effectiveness and efficiencies. Then, Barney (1991) defined the firm's resources as the strengths and capabilities possessed by the firm that can be used to envisage and implement its strategies. However, Amit and Schoemaker (1993) contributed significantly to the RBV by highlighting the distinction between the resources and capabilities of the firm. They defined resources as assets that are possessed or controlled by a firm, while capabilities can be defined as a firm's capability to

deploy, combine resources and exploit them sufficiently such as leverage skilled workforce as well as firm practices to outperform rivals. In this respect, resources can be traded as they are non-specific to the firm while capabilities are firm-specific and are employed to engage the firm's entire resources (Hoopes, Madsen, & Walker, 2003). This distinction has been recognized and used extensively throughout the RBV literature (Barney, Wright, & Ketchen, 2001).

Apart from the distinction between resources and capabilities, the resources can be classified into tangible resources, such as physical assets, and intangible resources, such as the firm's reputation and personnel-based resources of staff technical knowledge (Grant, 1991). While tangible resources include physical assets, such as machines and buildings, the intangible resources comprise firm's human capital, such as employee's knowledge, training, intelligence and experience, and organizational capital, such as firm's culture and its brand name (Barney, 1991, Barney & Arkan, 2001).

Scholars such as Mills, Platts and Bourne (2003) stated that resources can be categorized as tangible resources, knowledge resources, system and procedural resources; cultural values and resources, network resources and resources that may have dynamic capability features and finally intangible resources. However, Barney (1991) concluded that not all tangible and intangible resources owned by a firm contribute to the generation of sustained competitive advantage. They must be characterized by specific attributes. Clearly and specifically, RBV theory argues that only valuable, rare, imperfectly imitable and non-substitutable (known as VRIN) resources of an organization can generate sustainable competitive advantage, in

addition, they are considered as the intangible strategic resources (Barney & Clark, 2007).

Based on RBV perspective, there are three main constructs related to the RBV theory known as organizational performance, internal organizational resources (tangible and intangible) and capabilities (Liang *et al.*, 2010). In this respect, the dependent variable is the organizational performance, which can be evaluated using multidimensional measures. It is expected to be enhanced and to obtain competitive advantage by the proper use of resources and capabilities. It is stated that the effectiveness and efficiency of these organizations depend mainly on the balance between their resources and capabilities and between their resources and capabilities and customer needs (Pesic, 2007). The combination of resources and capabilities as well as the ability to control them result in obtaining sustainable competitive advantage. As the theoretical foundations underpinning this study, RBV is perceived as internal capabilities or resources. In other words, the present study considers the internal intangible organization resources (TQM and MO) from one side, and organization capabilities (IT capability), from the other side, to achieve the performance and sustainable competitive advantage of MFIs.

The fact is that TQM had been emphasized as one of the major sources and generators of competitive advantage of organizations (El Shenawy *et al.*, 2007; Economou & Chatzikonstantinou, 2009; Al-Qudah, 2012; Munizu, 2013; Kaur & Sharma, 2014). This means that TQM philosophy can be seen as the firm's valuable, scarce, and difficult to be imitated by competing firms and non-substitutable intangible resources. From this view, it seems that both theoretical and empirical

evidences support the idea that TQM-oriented firms create successful barriers for competitors to imitate TQM practices and they obtain a sustainable competitive advantage.

For the MO, the argument is similar. MO is recognized as a source of competitive advantage within the organization (Kumar *et al.*, 2011; Julian *et al.*, 2014). Market-oriented firms tend to collect information about internal and external customers and then respond to their needs and wants (Gounaris, 2006). Once they provide value for a customer that is rare and difficult to be imitated by competitors, it is more likely to achieve superior performance (Liao *et al.*, 2011). Thus, MO should be considered as unique organization resource, intangible, embedded, causal, vague and imperfectly imitable which potentially contributes in creating the sustained competitive advantage and enhance MFIs performance.

In respect to IT capability, it was stated that RBV theory had been extensively employed in the field of information system research area (Bharadwaj, 2000, Ray *et al.* 2005; Liang *et al.*, 2010; Cosic, Shanks, & Maynard, 2012). It had served as a theoretical foundation to define valuable IT resources that can foster organizational capabilities and in turn result in superior performance (Bhatt & Grover, 2005; Rai, Patnayakuni, & Seth, 2006). IT capability is viewed as a combination of IT related resources holding VRIN attributes that were directly related to competitive advantage and abnormal performance. It has also been used to investigate the IT-competitive advantage link as a solution to the productivity paradox (Ravichandran & Lertwongsatien, 2005). Thus, this study includes IT capability, measured by different resources, namely IT knowledge, IT objects and IT operations (Tippins &

Sohli, 2003). These are the resources anticipated to enhance MFIs performance and to help them in obtaining competitive advantage. This is why the RBV theory is chosen as the main underpinning theory to address the issue at hand.

Notwithstanding the model of this study is theoretically based on RBV, this theory has been criticized for three major theoretical shortcomings. The first one is that RBV theory has been criticized for its inability to explain how organizational resources are integrated, developed and deployed to gain sustainable competitive advantage (Priem & Butler, 2001; Kraaijenbrink, Spender & Groen, 2010). The second one is that RBV implicitly argues static equilibrium ignoring the needed demands for continual success and sustained competitive advantage in turbulent environments (Eisenhardt & Martin, 2000; Cosic *et al.*, 2012). The third one is that the RBV basically focuses only on the resources and capabilities that make barriers for rivals to imitate, substitute or taking way these resources ignoring the complementarities of resources (Amit & Schoemaker, 1993; Mueller, 1996; Powell, 1995; Teece, 2007; El Shafeey & Trott, 2014). Hence, this study has also drawn on dynamic capabilities theory and complementarity theory to address the RBV theoretical deficiencies. The following sections present discussion about dynamic capabilities theory and complementarity theory, highlighting their perspective advantages.

2.6.2 Dynamic Capabilities Theory

The dynamic capabilities perspective had received tremendous attention since it was first introduced and originated by Teece, Pisano and Shuen in 1997 (Beske, 2012).

Dynamic capability can be viewed as the ability of a firm to integrate, coordinate, build and reconfigure both internal and external competences in order to create business value in a turbulent environment (Teece *et al.*, 1997; Helfat *et al.*, 2007; Morgan, *et al.*, 2009). This definition emphasizes on the confrontation and adaptation to the changes in the environment as fundamental for the existence of dynamic capability.

According to Eisenhardt and Martin (2000), dynamic capability can be defined as the processes of a firm utilizes its resources, particularly regarding the processes that concern about the integration, coordination and reconfiguration of the resources in order to match and create market change. This also involves the organizational and strategic routines through which the firm gets new resources and configurations as market emerge, collide, split, evolve and die. This indicates that dynamic capability emphasizes on the significance of resources integration, building, coordination and reconfiguration internal and external competences so as to generate sustained competitive advantage particularly in a turbulent market.

Dynamic capability can be the extension of the RBV theory in capturing the evolutionary nature of resources and capabilities of the organization to strengthen and renew its resource base (Wang & Ahmed, 2007). The rationale is that RBV has a tendency to be static and not adequately accounting for addressing rapid and unpredictable changes in the environment (Helfat *et al.*, 2007). As the dynamic capability strongly emphasizes those resources, capabilities configurations can generate competitive advantage, this competitive advantage vanishes and erodes during the time the environments change (Eisenhardt & Martin, 2000). Ambrosini

and Bowman (2009) argued that valuable, rare imitable and non-substitutable resources hold good only in stable environments. Aiming to explain the sources of competitive advantage within the firm over time and to guide managers to understand how firms can sustain competitive advantage, dynamic capabilities suggest changes in the market as well as creating environmental change; not only focusing on identifying and selecting resources (Teece, 2007).

The above argument explains why this study intends to use the dynamic capability theory, conceptualizing IT capability, to address the mechanism through which the organizations realize TQM and MO. Zhou *et al.* (2005) stated that “*Capabilities are the glue that brings these assets together and enables a firm to deploy them advantageously, such as the skills underlying the innovativeness and the superior quality of a firm’s offerings*”. This suggests that the dynamic capabilities address the issue of sustainability and performance in a rapid changing environment. IT capability can contribute to sustained competitive advantage and superior performance by enabling the organization’s ability to build, integrate, and reconfigure its capabilities and competences.

Drawing on the theoretical foundation of the dynamic capabilities theory, IT capability can be integrated and deployed with other organizational resources and capabilities, which result in sustainable competitive advantage as well a superior performance. It is argued here that IT resources can develop several attributes of dynamic capabilities that are of great value to help organizations to operate in a dynamic environment (Wade & Hulland, 2004). Hence, when IT resources such as

IT knowledge, IT objects and IT operations are combined together to form IT capability, achieving sustainable competitive advantage is more likely.

2.6.3 Complementarity Theory

The concept of “complementarity” suggests that the economic value of a variable increases mainly when there is a complementary variable (Altinkemer, Ozcelik, & Ozdemir, 2011). Barua, Lee and Whinston (1996) introduced a theory of business value, which focuses on the firm’s resources that increase the output when they are combined together. Milgrom and Roberts (1995) stated that some organizational activities and practices in a firm’s strategy increase output when they are adopted together as they are alternately complementary. The value of organizational resources can increase when combined together with other complementary resources because it is complicated for rivals to replicate or gain the total effect (Bhatt & Grover, 2005; Bharadwaj, Bharadwaj, & Bendoly, 2007).

Moreover, it was argued that organizations with a combination of resources can lead to improve special capabilities which in turn obtain a sustainable competitive advantage and then achieve higher performance (Barney, 1991; Amit & Schoemaker, 1993). Hunt and Davis (2012) stated that a diverse of organizations resources allow them to build and develop unique capabilities which lead to achieve superior organizational performance. For Shin and Aiken (2012), the resource deployment approach is important to overcome the business shortcomings. Ahn and York (2011) also mentioned that there has been an attempt to conceptually connect resources to capabilities which is expected to improve the other resources in the organization.

Within the above context, this study attempts to link organization resources of TQM and MO with IT capability (of organization capabilities) assuming that organization resources lead to capabilities with the notion that the value of complementary resources in combination is higher than the total values of all these resources individually.

The notion that IT capability is widely recognized as complementary resources that leverage the value of other firm resources and capabilities is supported by Bharadwaj *et al.* (2007). Melville, Kraemer and Gurbaxani (2004) also pointed out that when IT and other complementary resources of the firm are joined together, they have greater influence on the business processes and resulted in superior firm performance. Douglas and Judge (2001) and Ehigie and McAndrew (2005) suggest that TQM implementation is not enough to achieve the desired outcome related to business performance unless there are complementary organizational resources compiled together. This indicates that TQM and MO complement each other as both constructs focus on customer satisfaction (Demirbag *et al.*, 2006; Wang & Chen, 2011, Wang *et al.*, 2012). Vorhies *et al.* (2009) suggested that it is of great value to deploy organization resources through organization capabilities rather than absolute resource level dependence to drive performance and, thus, this research also employs TQM and MO (as organization resources) through IT capability (as organization capability) to examine the MFIs performance.

In summary, this study adopts the complementarity theory in order to address the third deficiency of RBV (i.e. the resources isolation). As RBV does not take into account the fact that firm's resources hardly act alone in sustaining competitive

advantage (Wade & Hulland, 2004), this study proposes a research model to examine the mediating effect of dynamic IT Capability, TQM, MO and MFIs Performance. Based on the evidence and theories discussed earlier, the research model in this study proves to be solid and strong enough to explain the relationships amongst the different variables of the study.

2.7 Summary of the Chapter

This chapter presents an extensive review on microfinance performance, TQM, MO and IT capabilities as a potential mediator with MFIs performance. The literature review has revealed that despite the significant effect of TQM, MO and IT capability on organizational performance, this relationship is argued to be inconsistent. Thus, these need testing and retesting until a solid model emerges. This is what academic research is for.

The vast majority of studies related to these factors carried out in developed countries and they are scarcely researched in developing and least developed countries. In addition to that, there is a paucity of research concerning these factors in the microfinance sector. Literature review also supports that capabilities of the organization such as IT capability can be a mediator or a moderator on the relationship between TQM, MO and MFIs performance.

All the variables under the study are explained according to well-known and solid theories. Therefore, this study shall contribute to the body of knowledge by investigating the key contributing factors to MFIs performance in regard to TQM,

MO and IT capability. It also attempts to examine the effect of both TQM and MO on IT capability and the mediating effect of IT capability on the relationship between both TQM and MO with MFIs performance.



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology of the study. It is presented in eight sections consisting the research design, the conceptual framework, population and sampling, unit of analysis and measurement, hypotheses development, instruments design, pilot study and data analysis techniques used in this study.

3.2 Research Design

In the first essence, the research design is the most important section as it is a master plan that guides the researcher during different stages of collecting and analyzing data (Greener, 2008; Zikmund, Babin, Carr, & Griffin, 2012). According to Sekaran and Bougie (2010), there are four types of business researches, categorized according to the purpose of the research. These types are exploratory, descriptive, hypothesis testing on casual research and case study. The criterion upon which the researcher decides to use is based on the understanding and requirement to solve the research problem. For example, Yin (2013) suggests that exploratory research is conducted in the case of no information available about a similar research issues and how they are solved earlier or only a little information about the issue under research. In this situation, it is necessary to start with extensive work to understand the issue before developing the model and setting up a rigorous design for investigation (Sekaran & Bougie, 2010; Yin, 2013).

Descriptive research was carried out when the nature of the problem is somewhat clear so the purpose of research here is to describe specifically the problem (Zikmund *et al.*, 2012). In respect to causal research or hypothesis testing, it basically highlights the relationships among the variables or explains the differences among groups being investigated (Zikmund *et al.*, 2012). Finally, case study requires in-depth contextual analyses of issues relating to similar situations in other firms (Sekaran & Bougie, 2010; Yin, 2013).

Based on the nature of the present study, which aims at examining the relationships between TQM, MO, IT capability and MFIs performance, it employs descriptive research and hypotheses testing. This study utilizes a cross-sectional research design which involves gathering data to meet the research objectives (Sekaran & Bougie, 2010). This design is preferable because it fits the process of getting the solution for the problem statement and furthermore, it requires less cost, time and effort compared to a longitudinal design. Moreover, the theoretical framework can be developed to start-up the investigation which is known as a quantitative research approach.

Generally, the quantitative research approach is basically a deductive process employed to test theory after determining and developing the hypotheses that make up the theory (Cooper & Schindler, 2014). It also provides an observed effect of a program on a phenomenon or a problem based on the interpretation of the researcher (Greener, 2008). Descriptive research is used to reveal the population characteristics such as respondents and the organizational characteristics. Zikmund (2003) suggests four research methods for descriptive and causal research, namely (i) survey, (ii)

experiment, (iii) secondary data study and (iv) observation. Survey research design is used to collect data related to the representative sample deploying either a survey questionnaire or an interview. The researcher can also contact the respondents through the internet, mail, telephone, or in person through self-administered survey questionnaire. According to Cooper and Schindler (2014), survey is the most common method for the quantitative research approach.

In conclusion, the present study uses the survey questionnaire research design which involves collecting data related to the variables identified in the research model. This type of research design is also recognized by other leading scholars as one of the best and extensively used by business studies to collect primary data (for example, Hair, Money, Page, & Samouel, 2007). Therefore, a quantitative survey questionnaire research approach is employed through self-administered questionnaire in order to measure the variables under investigation and then achieving the objectives of this study. This approach is suitable for the study.

The casual research method requires a research framework to be formulated. This research framework provides the direction of the relationship under examination. Within the context of the study, Figure 3.1 shows the relationship with the direction of the variables. Hair *et al.* (2007) refer to this as the theoretical framework of the study.

Total Quality Management (TQM)

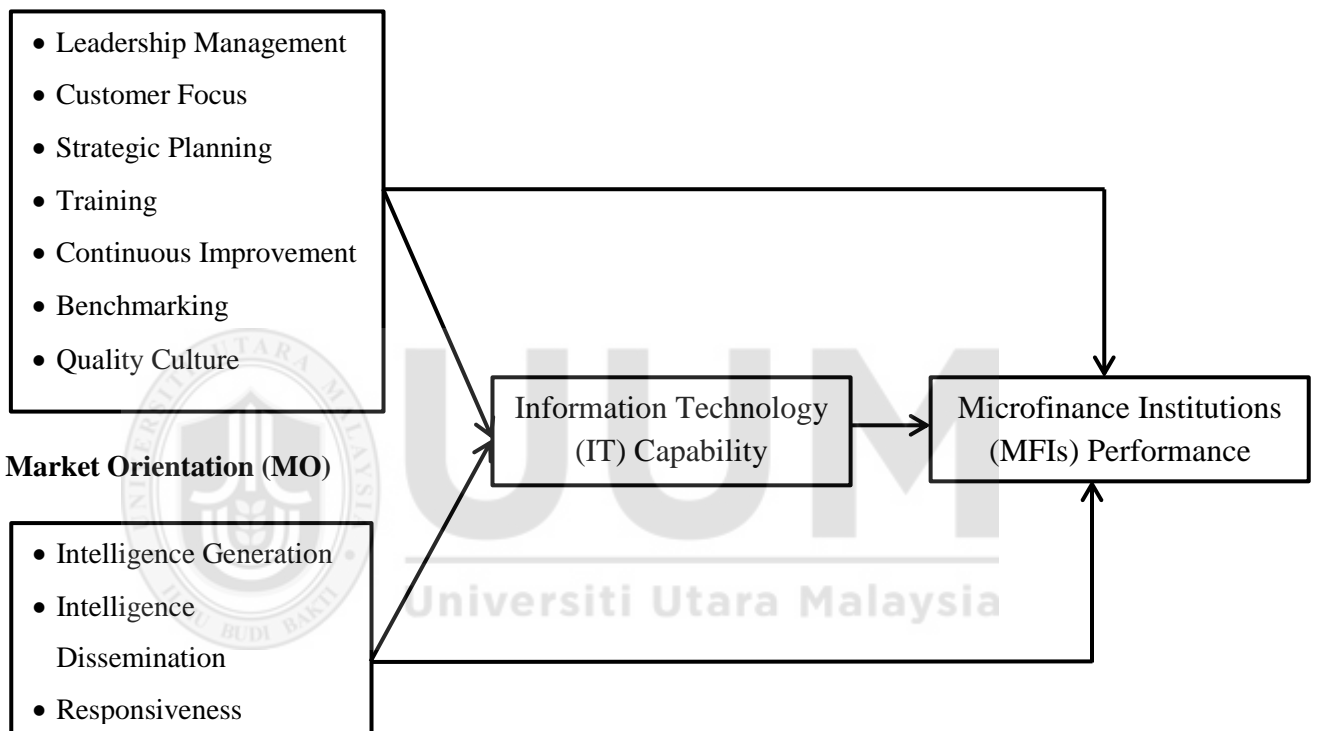


Figure 3.1
Theoretical Framework of the Study

3.3 Hypotheses Development

Based on the theoretical background and prior empirical studies, this section presents a discussion on the hypotheses development. In answering the research questions and achieving the objectives of this research, the following subsections discuss the hypotheses proposed to be tested. All the statements of the hypotheses are in the form of alternative hypotheses.

3.3.1 Hypotheses Confirming the Effect of TQM on MFIs Performance

The relevant TQM literature review shows that the majority of empirical studies, which consider TQM as a holistic approach, confirmed its significant role on organizational performance such as Lam *et al.* (2011), Iqbal *et al.* (2012), Wang *et al.* (2012), Munizu (2013) and Ul Hassan *et al.* (2013), Jiménez-Jiménez *et al.* (2015), Homaid *et al.* (2015) and Al-Dhaafri *et al.* (2016). All these studies confirmed the significant link between TQM and organizational performance.

Moreover, based on the RBV theory, TQM was considered as a valuable resource that enhances performance and obtains a sustainable competitive advantage (Idris, 2011). Whilst many firms have adapted and implemented TQM practices in their operations, the TQM creates an adequate environment where organizations become committed to customer satisfaction through continuous improvement which results in superior performance (Bayraktar *et al.*, 2008; Munizu, 2013).

In general, the conclusion of TQM and organizational performance literature indicates a significant positive relationship (Sila & Ebrahimpour, 2002; Nair, 2006; Jiménez-Jiménez *et al.*, 2015). Thus, the following hypotheses were formulated;

Hypothesis 1 (H1): TQM has a significant positive effect on the MFIs performance.

In terms of TQM as a multidimensional construct, prior empirical studies found that the majority of TQM practices significantly affect organizational performance (see Fotopoulos & Psomas, 2010; Idris, 2011; Valmohammadi, 2011; Jaafreh & Al-Abedallat, 2012; Zehir *et al.*, 2012; Irfan & Kee, 2013; Talib *et al.*, 2013). According to Salahledin (2009) and Talib and Rahman (2010), TQM practices are highly recommended to be identified and ranked for the success of TQM implementation. Moreover, organizations should utilize a few vital TQM practices which the rivals neglect in order to gain sustainable competitive advantage in the marketplace (Talwar, 2011).

Among other TQM practices, leadership management and top management commitment is considered as the most crucial factor for TQM implementation success (Singh & Sushil, 2013; Topalović, 2015). To achieve the quality objectives within the organizations, top management should be involved in many practices such as employees' development, creating an effective communication environment and utilizing information effectively and efficiently (Sadikoglu & Olcay, 2014). Moreover, the leadership styles should be shown rather than traditional management practices to increase the awareness of quality concept among employees (Criado & Calvo-Mora, 2009).

Leadership is very important because it affects significantly groups and teamwork, mobilizes resources and promotes the strategic direction of the organization to obtain customer satisfaction and superior performance (Jaafreh & Al-abadallat, 2012). Empirically, previous studies proved that the significant effect of leadership management on organization performance (Fotopoulos, & Psomas, 2010; Idris, 2011; Valmohammadi, 2011; Zehir et al., 2012; Jaafreh & Al-abadallat, 2012; Irfan & Kee, 2013). Based on the prior discussion, it can be concluded that leadership management is a significant practice of TQM in fostering organization performance. Accordingly, the following hypothesis is proposed

Hypothesis 2 (H1a): Leadership management has a significant positive effect on the MFIs performance.

Customer focus is also one of the key elements of TQM for obtaining TQM success (Idris, 2011). The main focus of TQM is to meet the needs of customers (Nitin *et al.*, 2010; Yunoh & Ali, 2015) and satisfy customers which lead to organizational success (Sadikoglu, & Olcay, 2014). Many studies found that customer focus is significantly associated with organization performance (e.g. Fotopoulos, & Psomas, 2010; Idriss, 2011; Valmohammadi, 2011; Zehir *et al.*, 2012; Jaafreh & Al-abadallat, 2012; Irfan & Kee, 2013). Thus, the following hypothesis concerning the link between customer focus and MFIs performance is suggested;

Hypothesis 3 (H1b): Customer focus has a significant positive effect on the MFIs performance.

Strategic planning, another TQM practice, was acknowledged to be one of the most important practices of successful TQM implementation (Thai Hoang &

Laosirihongthong, 2006). In order to obtain better results, strategic planning assists organizations to identify clearly the priorities and needed resources (Jaafreh & Al-Abedallat, 2012). Many empirical studies reported the significant impact of strategic planning on organizational performance (e.g. Idris, 2011; Jaafreh & Al-Abedallat, 2012). Therefore, the following hypothesis attempts to establish the relationship between strategic planning and MFIs performance;

Hypothesis 4 (H1c): Strategic planning has a significant positive effect on the MFIs performance.

According to Sadikoglu and Olcay (2014), an effective training can increase the loyalty, motivation and performance of employees so that it is crucial for successful implementation of TQM (Bayraktar *et al.*, 2008). By conducting effective training programs, organizations can maintain better quality level (Talib & Rahman, 2010) and create a suitable environment for continuous improvement and innovation processes (Talib *et al.*, 2013). Many TQM scholars such as Karia and Asaari (2006) and Talib *et al.* (2013) found that training is significantly related to organizational performance. Based on this argument, the following hypothesis is proposed;

Hypothesis 5 (H1d): Training has a significant positive effect on the MFIs performance.

Continuous improvement is one of the main elements of the TQM for executing TQM strategy (Talib & Rahman, 2010). The objective of TQM is mainly to improve the quality products and services quality continuously by involving all the employees at all levels and functions within the organizations and, hence, the success is achieved (Burli *et al.*, 2012). According to Talib *et al.* (2013), continuous

improvement is a crucial factor particularly in the service sector because it encourages change and innovative thinking in all organization operations (Costa & Lorente, 2008). It is found that continuous improvement is significantly associated with organization performance (Fotopoulos & Psomas, 2010; Mehmood *et al.*, 2014). Therefore, a hypothesis regarding continuous improvement and MFIs performance is postulated as follows;

Hypothesis 6 (H1e): Continuous Improvement has a significant positive effect on the MFIs performance.

Benchmarking is one of the most crucial practices for adoption and execution of any TQM intervention within any organizations (Talib & Rahman, 2010; Singh & Sushil, 2013). The benchmarking helps organizations to determine a target for performance improvement and attain a superior position in the market (Yusuf *et al.*, 2007). With the help of benchmarking, organizations can compare their operations or processes with the best practices players from inside or outside the industry (Sit *et al.*, 2009). Many studies confirmed the significant relationship between benchmarking and organizational performance (Sit *et al.*, 2009; Idris, 2011; Talib *et al.*, 2013). Thus, the following hypothesis is suggested;

Hypothesis 7 (H1f): Benchmarking has a significant positive effect on the MFIs performance.

In general, organizational culture is significantly related to job employee motivation (Sokro, 2012), leadership behaviour and job satisfaction (Tsai, 2011), tacit knowledge sharing behaviour (Suppiah & Sandhu, 2011), performance management practices (Ehtesham, Muhammad & Muhammad, 2011) and organisation

performance (Jacobs, Mannion, Davies, Harrison, Konteh, & Walshe, 2013). Specifically, quality culture, one of TQM practices, is regarded as the base for successful TQM implementation (Yusuf et al. 2007; Arumugam et al., 2011; Todorut, 2013). It is also proved that quality culture is a significant predictor of organizations performance (Yusof & Ali, 2000; Talib *et al.*, 2013; Dubey, 2015). Therefore, a hypothesis is proposed as follow;

Hypothesis 8 (H1g): Quality culture has a significant positive effect on the performance of Microfinance Institutions.

3.3.2 Hypotheses Confirming the Effect MO on MFIs Performance

As highlighted earlier in chapter 2, there is a bulk of researches available in the literature, which consider MO as a single construct, reporting the significant effect of MO on organizational performance such as Wang *et al.* (2012) AL-Dmour *et al.*, (2012), Zebal and Goodwin (2012), Altuntaş *et al.* (2013), Boso *et al.* (2013), Taleghani *et al.* (2013) Protcko and Dornberger (2014) and Al-Ansaari *et al.* (2015). All these studies concluded the significant link between MO and organizational performance.

According to RBV, MO is a source of competitive advantage and superior performance within the firm (Kumar *et al.*, 2011; Liao *et al.*, 2011). Market-oriented organizations have the ability to anticipate customers' needs, react quickly to satisfy them and adapt to environmental changes, which resulted in better organizational performance (Mahmoud & Yusif, 2012). On the basis of the previous discussions,

the following hypothesis is postulated; *Hypothesis 9 (H2): MO has a significant positive effect on the MFIs performance.*

With regard to the MO dimensions, many studies tend to support the significant effect of MO dimensions, namely intelligence generation, intelligence dissemination and responsiveness on organization performance (see Hamadu *et al.*, 2011; Julian *et al.*, 2013). According to Shin (2012), studying MO as a multidimensional construct is very important to understand deeply the relationship between MO and performance.

Intelligence generation, one of the MO dimensions, is the main base of MO (Hajipour *et al.*, 2012) because it involves generating information about customers and market environment to anticipate the needs of customers (Boso *et al.*, 2013). This process is needed for MFIs performance (Savescu, 2011). Empirically, intelligence generation has been found to be a significant predictor of organization performance (Untachai, 2008; Hamadu *et al.*, 2011; Julian *et al.*, 2013). Therefore, the following hypothesis is proposed;

Hypothesis 10 (H2a): Intelligence Generation has a significant positive effect on the MFIs performance.

Intelligence dissemination, another dimension of MO, is a very important element because it disseminates information within the different departments of the organizations (Julian *et al.*, 2013) through formal and informal communication mechanisms (Chao & Spillan, 2010). Literature shows that intelligence dissemination is significantly related to organization performance (Hamadu *et al.*,

2011; AL-Dmour *et al.*, 2012; Julian *et al.*, 2013). Accordingly, the following hypothesis is suggested;

Hypothesis 11 (H2b): Intelligence Dissemination has a significant positive effect on the MFIs performance.

Responsiveness towards market intelligence, another activity of MO, is a crucial activity because it guides the organizations to respond to the needs of customers by designing new and developing products/services (Ogunnaike *et al.*, 2014). Many MO scholars such as Untachai (2008), Chao and Spillan, (2010), Hamadu *et al.* (2011), AL-Dmour *et al.* (2012) and Julian *et al.* (2013) found that the link between responsiveness and organizational performance is strongly established. Therefore, the following hypothesis is postulated;

Hypothesis 12 (H2c): Responsiveness has a significant positive effect on the MFIs performance.

3.3.3 Hypotheses Regarding IT Capability as a Mediator

This study also aims at examining the mediating effect of IT capability on the relationship between TQM and MO on the MFIs performance. The discussion below highlights the development of the hypotheses related to IT capability as a mediator on the relationship between TQM and MO on the MFIs performance.

Theoretically, RBV assumes that organizational resources can be utilized to improve unique capabilities which enable these organizations to gain competitive advantage and better performance (Hunt & Davis, 2012). In this view, the TQM strategy

implementation within organizations creates organizational capabilities, which then obtains the competitive advantage and thus superior performance can be achieved (Perdomo-Ortiz *et al.*, 2006; Prajogo & Hong, 2008; Yusr *et al.*, 2012). Empirically, TQM has been reported to affect organization capabilities significantly such as technological innovation capability, marketing capability and learning capability and exploitation and exploration respectively (Yusr *et al.*, 2012; Yusr *et al.*, 2014; Akgün *et al.*, 2014; Jiménez-Jiménez *et al.*, 2015).

Similarly, implementing MO activities contributes to build special capabilities that enable organizations to be market-oriented and gain higher performance (Singh, 2009). Moreover, several empirical studies have proven the significant effect of MO on a number of organizational capabilities such as management capability and customer-linking capability (Hooley *et al.*, 2005), marketing capabilities (Murray *et al.*, 2011; Ngo & O'Cass, 2012), dynamic marketing capability (Wang *et al.*, 2013) and external capabilities including market-sensing capability and customer-linking capability (Fang *et al.*, 2014).

In completing the test, the direct effect of IT capability on the MFIs performance is examined. Referring to IT capability literature, there is a bulk of research works supporting the direct effect of IT capability on organizational performance (Bi & Zhang, 2008; Yu & Xin-quan, 2011; Ong & Chen, 2013, Karimi Mazidi *et al.*, 2014). However, other studies questioned this relationship arguing that IT capability is not directly related to organizational performance (Tippins & Sohi, 2003; Zhu & Nakata, 2007; Pérez-López & Alegre, 2012). The conflicting findings indicates the need to examine the effect of IT capability as the mediating variable.

Based on these arguments, the following hypotheses were formulated;

Hypothesis 13 (H3): IT capability has a significant positive effect on the MFIs performance.

Hypothesis 14 (H4): Total Quality Management has a significant positive effect on the IT capability.

Hypothesis 15 (H5): Market Orientation has a significant positive effect on the IT capability.

In fact, IT capability is a major factor by which organization resources are incorporated for achieving competitive advantage and superior performance (Pebrianto, 2013). Liang *et al.* (2010) and Homaid *et al.* (2015) pointed out that when IT capability was combined together with organizational resources, it is difficult for rivals to duplicate or even find a substitution for such capability and resources. Brah and Lim (2006) stated that IT capability helps organizations to improve quality performance and build an effective customer relationship management, by improving business operations effectiveness, increasing and providing high quality of services/products, giving greater flexibilities to customers and providing assistance to increase the employees' productivity. It is expected that application of IT capability improves the operational tasks of quality management and hence increase quality outcomes (Khanam *et al.*, 2013).

In the case of MO, modelling MO with dynamic capability approach is advantageous to identify capabilities for organizations to be market-oriented (Foley & Fahy, 2009). Moreover, the effective impact of MO on organizational performance can be realized when it is deployed with organizational capabilities, such as IT capability, deployed

and acted as a mechanism to explain this relationship (Ngo & O’Cass, 2012; Fang *et al.*, 2014).

IT capability can facilitate MO tasks specifically gathering, disseminating and analysing customer information and thus improve performance (Zhu & Nakata, 2007; Borges *et al.*, 2009). This is because market-oriented organizations tend to seize any opportunity in the market to build a good relationship with customers through IT capability (Wang *et al.*, 2013). This indicates that when MO is accompanied by distinctive and appropriate capabilities such as IT capability, it may result in better information generation, dissemination and responses to the needs of the customers and then superior performance achievement.

According to dynamic capability theory, organization capabilities can deploy and integrate resources in a better way that enable firms to cope with the changing market and gain competitive advantage (Teece *et al.*, 1997; Morgan *et al.*, 2009). Capabilities are the glue that brings these resources together and enables organizations to deploy them advantageously (Zhou *et al.*, 2005). Supporting this view, Lu *et al.* (2010) suggest linking organization's capabilities with resources and utilizing them as mediators through which these resources can be explained to improve performance. Thus, this study proposes that the MFIs performance can be improved via the integration of resources (TQM and MO) and capabilities (IT capability) in a certain way, employing IT capability as a mediator on the mentioned relationships, which provides greater complementarity. Based on these arguments, the following hypotheses were formulated;

Hypothesis 16 (H6): IT capability mediates significantly the relationship between Total Quality Management and the MFIs performance.

Hypothesis 17 (H6a): IT capability mediates significantly the relationship between Leadership management and the MFIs performance

Hypothesis 18 (H6b): IT capability mediates significantly the relationship between Customer focus and the MFIs performance.

Hypothesis 19 (H6c): IT capability mediates significantly the relationship between Strategic planning and the MFIs performance

Hypothesis 20 (H6d): IT capability mediates significantly the relationship between Training and the MFIs performance.

Hypothesis 21 (H6e): IT capability mediates significantly the relationship between Continuous Improvement and the MFIs performance.

Hypothesis 22 (H6f): IT capability mediates significantly the relationship between Benchmarking and the MFIs performance.

Hypothesis 23 (H6g): IT capability mediates significantly the relationship between Quality culture and the MFIs performance.

Hypothesis 24 (H7): IT capability mediates significantly the relationship between Market Orientation and the MFIs performance.

Hypothesis 25 (H7a): IT capability mediates significantly the relationship between Intelligence Generation and the MFIs performance.

Hypothesis 26 (H7b): IT capability mediates significantly the relationship between Intelligence Dissemination and the MFIs performance.

Hypothesis 27 (H7c): IT capability mediates significantly the relationship between Responsiveness and the MFIs performance.

Table 3.1 below presents a summary of the hypotheses to be tested within the study.

Table 3.1
Hypotheses List

No.	Hy.	Hypothesis statement
1	H1	TQM has a significant positive effect on the on the MFIs performance.
2	H1a	Leadership Management has a significant positive effect on the MFIs performance.
3	H1b	Customer Focus has a significant positive effect on the MFIs performance.
4	H1c	Strategic Planning has a significant positive effect on the MFIs performance.
5	H1d	Training has a significant positive effect on the MFIs performance.
6	H1e	Continuous Improvement has a significant positive effect on the MFIs performance.
7	H1f	Benchmarking has a significant positive effect on the MFIs performance.
8	H1g	Quality culture has a significant positive effect on the MFIs performance.
9	H2	MO has a significant positive effect on the MFIs performance.
10	H2a	Intelligence Generation has a significant positive effect on the MFIs performance.
11	H2b	Intelligence Dissemination has a significant positive effect on the MFIs performance.
12	H2c	Responsiveness has a significant positive effect on the MFIs performance.
13	H3	IT capability has a significant positive effect on the MFIs performance.
14	H4	Total Quality Management has a significant positive effect on IT capability.
15	H5	Market Orientation has a significant positive effect on IT capability.
16	H6	IT capability mediates significantly the relationship between Total Quality Management and the MFIs performance.
17	H6a	IT capability mediates significantly the relationship between Leadership management and the MFIs performance.
18	H6b	IT capability mediates significantly the relationship between Customer Focus and the MFIs performance.
19	H6c	IT capability mediates significantly the relationship between Strategic Planning and the MFIs performance.
20	H6d	IT capability mediates significantly the relationship between Training and the MFIs performance.
21	H6e	IT capability mediates significantly the relationship between Continuous Improvement and the MFIs performance.
22	H6f	IT capability mediates significantly the relationship between Benchmarking and the MFIs performance.
23	H6g	IT capability mediates significantly the relationship between Quality Culture and the MFIs performance.
24	H7	IT capability mediates significantly the relationship between Market Orientation and MFIs performance.
25	H7a	IT capability mediates significantly the relationship between Intelligence Generation and the MFIs performance
26	H7b	IT capability mediates significantly the relationship between Intelligence Dissemination and the MFIs performance
27	H7c	IT capability mediates significantly the relationship between Responsiveness and the MFIs performance

3.4 Population and Sampling

The population of a study refers to the group of people or organizations which the researcher wishes to investigate (Sekaran & Bougie, 2010). The sample, the subset of the population, was said to be representative if the elements of the sample are drawn at random, so that the findings can be generalized (Sekaran, 2003).

There are currently 16 MFIs in Yemen providing their financial services with 166 branches as of December, 2013 (See Appendix 4). These are the population of this study, as in sampling theory, this is a small number. In most quantitative studies, the sample size is required in forming the sample (Hair, Black, Babin, & Andersen, 2010). This is referred as the minimum number of respondents required, which is crucial for further analysis in a survey research (Bartlett, Kotrlik, & Higgins, 2001).

According to Hair *et al.* (2014), the power analysis test should be run to determine the minimum sample size of the study. Following the suggestions of Cohen (1992) and Faul, Erdfelder, Buchner and Lang (2009) to use these parameters: Power (1- β err prob; 0.95), an alpha significance level (α err prob; 0.05), medium effect size f^2 (0.15), two number of tested predictors (i.e. TQM and MO) and four main numbers of predictors as total (i.e., TQM, MO, IT capability and MFIs performance), a minimum sample of 107 would be required to test a regression based models (See Figure 3.2).

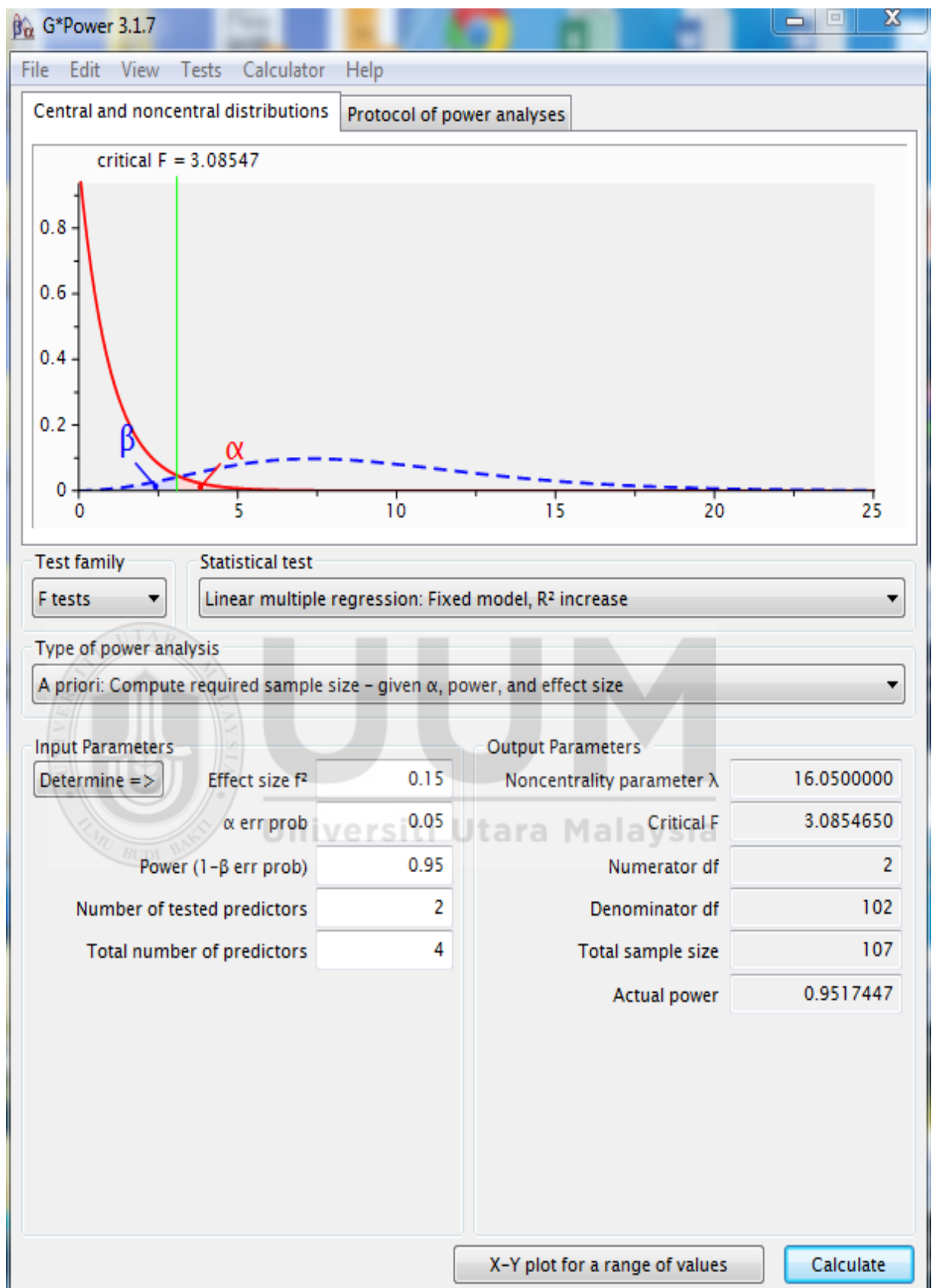


Figure 3.2
A Priori Power Analysis Result

In addition to the power analysis, this study employed the sample size determination criteria of Krejcie and Morgan to determine the representative sample size for the study (Sekaran, 2003). Most significantly, this criterion takes into consideration the level of confidence and precision which ensures that sampling error minimization. According to the sample size table, a sample size of 118 would be required for a population of 166.

According to Zikmund (2003), the researcher may select to study the whole population rather than taking a sample for the study when the sample units in the population are limited. In addition to that, when planning the sampling procedures, the researcher should try to get the maximum information from the respondents by considering many other factors such as cost, resources and personnel (Cooper & Schindler, 2014).

Thus, due to relative small population, the study opts for the whole population, rather than selecting a sample for the study, and distributes the questionnaire to the entire population. This was referred to as a survey, if all respondents return the questionnaires sent to them with the expected low nonresponse rate, the sample of this study is almost the whole population. In other words, the researcher expects low response rate so that the questionnaires were distributed to the whole population in order to get the minimum number of respondents required for the analysis. Based on the power analysis result and the suggestion of Krejcie and Morgan, a sample size of 107 and 118 would be required for the analysis of the model.

3.5 Unit of Analysis

The unit of analysis refers to the person, collective, or object that the researcher is interested to investigate (Bhattacharjee, 2012). The research issues determine the level or the unit of the analysis, whether it is individual, group, organization or country (Sekaran, 2003). This study aims at examining the hypothesized relationships on the level of the strategic business unit and the information can be obtained from the managerial personnel in an organization. Thus, the unit of analysis of the study is the MFI branch represented by the branch managers, those who can provide information on the managerial aspects of the MFIs.

It was argued that the branches of financial institutions, in this study the MFIs, are the connecting points between them and the customers (Das, Ray, & Nag, 2009). They suggested that the overall performance of the bank as a whole is based on the operations of the network of bank branches. According to Al-Swidi and Mahmoud (2012), the bank branches contribute significantly to the overall success of any quality initiative at the corporate bank level. They are the reliable source due to their executive position and their ability to provide information on the implementation of strategies in the organizations.

Logically, the failure of MFIs branches definitely can cause the collapse of the whole institution. The branches of the MFIs are regarded as the strategic business units within the general administration of the MFIs where they provide the products and services directly to customers. The main role of these branches is to disburse loans, attract the deposit savers, practice marketing activities and provide consultations to

the customers, in addition to the other financial and non-financial services. Furthermore, MFIs show their commitment towards the customers' needs and wants through these branches which directly offer such services to the customers, which interactions take place, not or very limited at the headquarter office.

Given this importance, each branch was considered as a separate entity where its performance is treated independently. This is in line with many researchers who consider the business units (branches managers) when studying organization strategies, such as TQM strategy (Al-Swidi & Mahmood, 2012), market orientation (Dwairi, Bhuiyan, & Jukus, 2007) and IT capability (Pebrianto, 2013). This study selects the MFIs branches to be the unit of analysis, the level of strategic business implementation where the competitive advantage could be created and originated.

3.6 Questionnaire Design and Measurements

With regard to the measurements for this study, it conceptualizes the operation so that it is measurable, the behavioural dimensions, facets, or characteristics denoted by the concept. Consequently, these are translated into measurable elements representing the concept. This is very important because if the concept is operationalized incorrectly, then the validity of the measures will be affected (Sekaran & Bougie, 2010).

Based on the operational definitions of the variables of the study, a structured questionnaire was used to represent the variables of TQM, MO with the mediating factor of IT capability and MFIs performance. A five-point Likert scale (where 1=

strongly disagree and 5= strongly agree) is used to measure the perceptions of the managers on TQM practices, MO construct, IT capability and MFIs performance. The questions were developed based on the available questions for each category. The decision to choose a five-point Likert scale is preferable as it is widely used in most quantitative studies.

One of the issues in getting the data from the Arab society is the problem with their English language. Since they are not familiar with English to answer the questionnaire, the researcher translates the questionnaire into Arabic language. To make sure the equivalence and consistency between the two sets of questionnaires, the original questionnaire was translated to Arabic language by a translator and then another translator translated back the questionnaire into English. The help from two specialists in the translation and two academicians working in the business management department of Sana'a University in Yemen was obtained. Based on their suggestions, comments and recommendations, the questionnaire was deemed to the respondents. Appendix 1 and 2 show the English and Arabic versions of the questionnaire.

The questionnaire consists of 71 questions, classified into five sections. The first one consists of 10 questions related to the characteristics of the respondents and their institutions. The second consists of 31 questions to measure the TQM practices. The third consists of 10 questions to measure the MO activities. The fourth to measure the IT capability, there are 10 questions. Lastly, there are also 10 questions to measure the MFIs performance.

3.6.1 Microfinance Institutions Performance Scale

According to Mustafa and Saat (2013), the MFIs performance scale should take into account evaluating the development in achieving strategic objectives. The most popular strategic measurement tool is the balanced score card (BSC), which has five dimensions; financial, internal business, customer, and innovation and learning and social dimension (Kaplan & Norton, 1993). This type of measurement is suitable to measure MFIs as suggested by scholars such as Kipesha (2013), Nanayakkara and Iselin (2012), and Roy and Goswami (2013). These measures measure the overall performance at the branch level of the MFIs.

These measures include items which are categorized into financial and non-financial measures. The respondents are asked to rate these items according to the mentioned Likert scale and the items are BSC items used by Nanayakkara and Iselin (2012) and Kipesha (2013). The following Table 3.2 presents the items, which measure the respective perspectives.

Table 3.2
Microfinance Institutions Performance Scale

Code	Items	Source
Financial Perspective		
FP1	This institution (branch) is financially sustainable.	Nanayakkara & Iselin (2012)
FP2	This institution (branch)'s financial risk is low.	
Customer Perspective		
CP1	In this institution (branch), the level of the customer satisfaction has increased.	Nanayakkara & Iselin (2012)
CP2	In this branch, the level of the staff satisfaction has increased.	
Internal Business Process Perspective		
PP1	In this institution (branch), the operating cost of doing business has	Nanayakkara & Iselin (2012)
PP2	In this institution (branch), the average time to process a loan application has decreased.	

Table 3.2 (Continued)

Learning and Growth Perspective		
LGP1	This institution (branch) has successfully improved the quality of service offered.	Nanayakkara & Iselin (2012)
LGP2	This institution (branch) has utilized latest new innovations, methods and procedures for increasing effectiveness.	
Social Perspective		
SOP1	This institution (branch) contributes to improving the lives of the poorest of the poor.	(Kipesha (2013))
SOP2	This institution (branch) particularly benefits women.	

3.6.2 Total Quality Management (TQM) Scale

Based on the TQM literature, there are many variations regarding the ways to measure TQM practices. For the purpose of achieving the objectives of this study and capture the practices of TQM strategy in the MFIs, this study decides to use the TQM practices that are extensively used in the service sector. As depicted in the research framework of the study, the TQM consists of seven practices, namely leadership management, customer focus, strategic management, training, continuous improvement, benchmarking and quality culture. Similarly, the respondents are asked to rate the items according to the Likert scale. The items used to measure the TQM practices and the sources of the adapted items are shown in Table 3.3 below.

Table 3.3
Total Quality Management Success Factors Scale

Code	Item	Source
Management Leadership		
LM1	Top management always encourages staff to be involved in quality management and improvement activities.	Lam <i>et al.</i> (2011)
LM2	Top management empowers staff to solve quality problem.	
LM3	Top management allocates adequate resources for staff education and training.	
LM4	Top management learn quality-related concepts and skills.	
LM5	Top management is actively involved in quality management and improvement process.	

Table 3.3 (Continued)

Customer Focus		
CF1	Our activities mainly focus on satisfying our customers.	
CF2	It is very important to satisfying our customers and exceeding their expectations.	Wang <i>et al.</i> (2012)
CF3	Our senior executives always emphasize on the importance of customers.	
Strategic Planning		
SP1	Our institution sets and reviews our short and long-term goals through a comprehensive planning process.	
SP2	In our institution, strategic plans are linked to quality principles.	Lam <i>et al.</i> (2011)
SP3	Our institution has a written strategy covering business operations which is clearly articulated and agreed by top management.	
SP4	The mission of our institution is communicated and supported by our staff.	
SP5	We always takes into account (consider) donors' capability and other stakeholders' needs when we develop our plans, policies and objectives.	
Training		
TR1	Staff training is provided to help them understand microfinance basics and our institution's operation.	
TR2	Our staff has sufficient knowledge of the basic aspects of microfinance sector.	
TR3	Our staff understands the basic processes used to create and develop products/ services.	Conca <i>et al.</i> (2004)
TR4	Our staff is involved on-the-job training.	
TR5	Both managers and supervisors participate in specialist training (e.g. financial analysis of MFIs, product developmentetc.)	
Continuous Improvement		
CI1	Our staff is given an opportunity to suggest changes and modifications to existing operation processes.	
CI2	Our institution encourages continual evaluation and improvement of all its products, services and processes.	Wang <i>et al.</i> (2012)
CI3	Our institution has received recent compliments and recognition for improving its products/services/processes.	
Benchmarking		
BM1	We visit other institutions, locally and internationally, to investigate their practices.	
BM2	We conduct a research to find out the best practices of other institutions in microfinance industry.	Brah, Wang & Rao (2000)
BM3	We monitor competitors to find out the best practices in microfinance industry.	
Quality Culture		
QC1	Our management and employees accept quality as a strategic weapon to obtain competitive advantage.	
QC2	Our employees at all levels accept the motto "service to customers" as the real purpose of their existence.	Talib <i>et al.</i> , (2013)

Table 3.3 (Continued)

QC3	Our employees believe in doing things “right the first time and every time”.
QC4	Our employees have positive feelings such as “my institution” and “we work together to achieve common goals”.
QC5	Our employees have a pleasant and professional look (appearance).
QC6	All work requirements such as offices, furniture and other furnishings are comfortable for the employees to work.
QC7	Housekeeping is considered as a priority and it occupies the highest order in our institution

3.6.3 Market Orientation (MO) Scale

Referring to the market orientation (MO) literature review, it was argued that the “MARKOR” scale and the “MKTOR” scale are the most widely and extensively used to measure MO. These scales are developed by Kohli *et al.* (1993) and Narver and Slater (1990) (see Shoham *et al.*, 2006). For the purpose of this study, the “MARKOR” scale developed by Kohli *et al.* (1993) is used because MARKOR has outperformed the “MKTOR” scale in explaining the business performance variance (Cano *et al.*, 2004; Matsuno *et al.*, 2005; Ellis; 2006; Shoham *et al.*, 2006, Vieira, 2010; Rojas-Méndez & Rod, 2013).

Therefore, the “MARKOR” scale originated by Kohli *et al.* (1993), later validated by Boso *et al.* (2013) is adapted in the study. The respondents are asked to scale the items as 1=strongly disagree, 2= disagree, 3= neutral, 4=agree and 5=strongly agree. The measurements of the three dimensions of MO are intelligence generation, intelligence dissemination and responsiveness. They are presented in the following Table 3.4.

Table 3.4
Market Orientation Scale

Code	Item	Source
Intelligence Generation		
IG1	We generate a lot of information related to market trends (e.g., regulations, technology, politics and economy).	Kohli <i>et al.</i> (1993) & Boso <i>et al.</i> (2013)
IG2	We are fast to detect fundamental changes in our target market environment (e.g., regulations and economy)	
IG3	We periodically review the likely effect of changes in our business environment (e.g., regulation and economy)	
Intelligence dissemination		
ID1	We disseminate all Information that can influence the way we serve our customers to the relevant personnel.	Kohli <i>et al.</i> (1993) & Boso <i>et al.</i> (2013)
ID2	We often lose information about our customers in the system.	
ID3	Information concerning competitors' activities often reaches the relevant personnel too late to be of any use.	
ID4	Important information related to target market trends (e.g. regulation, and technology) is often discarded as it makes its way along the communication chain.	
Responsiveness		
RE1	We are fast to respond to important changes in our business environment (e.g., regulation, and technology)	Kohli <i>et al.</i> (1993) & Boso <i>et al.</i> (2013)
RE2	We are fast to respond to significant changes in our competitors' price strategies in target markets.	
RE3	We are fast to respond to competitive actions that threaten us in our target markets.	

3.6.4 Information Technology (IT) Capability Scale

The measurement of IT capability developed by Tippins and Sohi (2003) was used. It includes three dimensions which are IT knowledge, IT objects and IT operations. According to Bi and Zhang (2008), this classification goes in line with the most widely used IT capability definition. It is also similar to the classification in IT research area presented by Bharadwaj (2000), one of the IT gurus. It was also advantageous because it was aligned well to the resource-based view (RBV) of the firm which allows other resources and capabilities relating to IT to be examined (Gibb & Haar, 2007). According to Liu *et al.* (2013), this type of measurement is significant on firm performance. A number of studies such as Said, Hui, Taylor and

Othman, (2009), Pérez-López and Alegre (2012), Pérez-López and Junquera, (2013) have also used this measurement.

Adopting the measurement suggested by Tippins and Sohi (2003) and validated by Pérez-López and Alegre (2012), the respondents were asked to rate the items related to IT capabilities on a measurement scale of 1=strongly disagree, 2=disagree, 3=neutral, 4=agree and 5=strongly agree. Table 3.5 below presents the measurement of IT capability and the source.

Table 3.5
IT Capability Scale

Code	Item	Source
IT Knowledge		
ITK1	Our institution IT department staff is knowledgeable on IT operations.	Tippins & Sohi (2003) & Pérez-López & Alegre (2012)
ITK2	Our institution IT department staff is able to solve IT-related problems in the branch.	
ITK3	Our institution IT department staff is knowledgeable on new computer-based innovations.	
IT Objects		
ITB1	Our institution has an independent Management Information System (MIS) department.	Tippins & Sohi (2003) & Pérez-López & Alegre (2012)
ITB2	In the MIS department, a manager is employed whose main duties include the management of our information technology.	
ITB3	Our institution's branches are linked by a computer network through Wide Area Network (WAN).	
ITB4	Our institution is able to customize software applications if necessary.	
IT Operation		
ITP1	We routinely utilize computer-based systems to access information concerning our banking operations.	Tippins & Sohi (2003) & Pérez-López & Alegre (2012)
ITP2	We employ computer-based systems to analyze customer and market information.	
ITP3	We frequently utilize decision-support system when managing customer information.	
ITP4	We have set procedures for collecting customer information from online sources before disbursing a loan.(e.g. from SFD database)	

3.7 Pilot Study

A pilot study was an experimental study carried out to verify and enhance particular research measurements (Zikmund, 2003). The first draft of the questionnaire was revised through a number of steps in order to identify the problems and clear ambiguity. After the completion, a pre-test test or an evaluation of the questionnaire was carried out to finalize the questionnaire. Three experts from the industry and the academician were asked to give suggestions on the questionnaire. Based on their input, the questionnaire was modified, so that the content validity of the measurement is ascertained, and the questionnaires are ready for the pilot study.

According to Stangor (2014), a pilot test was required to establish the reliability and validity of the measurement before distributing the final questionnaire. In conducting the pilot test, the questionnaire was distributed to 30 department managers of the MFIs in Sana'a namely Cooperative and Agricultural Credit (CAC) bank, Al-amal Bank, Altadhamon Islamic Bank, Alkuriami Microfinance Bank and Alwatania Institution. The questionnaires for the pilot test have not been included with the other questions when analyzing the actual data. The pilot test was conducted from 18 May 2014 to 25 May 2014. The pilot study is for measurements of the study to be solid during the actual data collection.

3.7.1 Pilot Study Analysis and Result

Reliability analysis was carried out to assess the level of internal consistency among multiple measurements of a construct (Hair *et al.*, 2010). According to Sekaran

(2003), there are many different methods used by researchers to estimate the reliability of the construct, however Cronbach's Alpha coefficient method is the most widely used method. Thus, this study employed Cronbach's Alpha method to assess the reliability of the scales for each construct in isolation. According to Tenenhaus Esposito, Chatelin and Lauro (2005), the Cronbach's Alpha value should be greater than 0.70 to assure the reliability coefficient of the item. However, the Cronbach's Alpha value of 0.60 is a minimum acceptable level for an exploratory research (Hair *et al.*, 2010). In the current pilot study, Table 3.6 showed that all the values of Cronbach's Alpha were within the recommended range between 0.702 and 0.957 which revealed the reliability of the data.

Table 3.6
Summary Statistics of Reliability Analysis

Construct	Items	Cronbach's Alpha	Item deleted*	Cronbach's Alpha if item deleted
Leadership Management	5	0.892	Nil	0.892
Customer Focus	3	0.827	Nil	0.827
Strategic Planning	5	0.957	Nil	0.957
Training	5	0.863	Nil	0.863
Continuous Improvement	3	0.790	Nil	0.790
Benchmarking	3	0.869	Nil	0.869
Quality Culture	7	0.854	Nil	0.854
Intelligence Generation	3	0.856	Nil	0.856
Intelligence Dissemination	4	0.725	Nil	0.725
Responsiveness	3	0.781	Nil	0.781
IT Knowledge	3	0.817	Nil	0.817
IT Objects	3	0.297	ITB4	0.702
IT Operation	4	0.755	Nil	0.755
Financial Perspective	2	0.770	Nil	0.770
Customer Perspective	2	0.774	Nil	0.774
Internal process Perspective	2	0.837	Nil	0.837
Learning and Growth Perspective	2	0.816	Nil	0.816
Social perspective	2	0.823	Nil	0.823

In order to test the construct validity of the measurements, an exploratory factor analysis (EFA) was conducted using the principle component analysis (PCA) and varimax rotation. EFA is an interdependent technique which mainly seeks to define the underlying structure among the variables in the analysis (Hair *et al.*, 2010). This analysis aims at testing the interrelationships among study latent variables and to confirm the consistency of the extracted factors with their original and theoretical form (StataCorp, 2013).

According to Hair *et al.* (2010), the Bartlett Test of Sphericity (BTS) and the Kaiser-Meyer Olkin (KMO) measure of sampling are two familiar tests used to test the correlations of the variables. The KMO is the index used to compare the magnitude of the observed correlation coefficient to the partial correlation coefficient (StataCorp, 2013). The smaller the sum of the partial correlation between all pairs of variables, the closer the KMO to 1.0. This indicates the more appropriate the factor analysis.

The results of the pilot study showed that the KMO ranged between 0.469 and 0.885 and the Bartlett's test was also highly significant ($p = 0.000$) indicating the factor analysis is reliable and relevant.

Table 3.7
Factor Analysis of the Final Measurement (Pilot Study)

Construct	No. of items	Factor loading for items in first factor*	KMO	Eigen-Value	% of Variance	Cronbach's Alpha	Item deleted
LM	5	0.903 0.799 0.713 0.872 0.877	0.809	3.492	69.831	0.892	Nil
CF	3	0.899 0.829 0.857	0.697	2.230	74.348	0.827	Nil
SP	5	0.918 0.954 0.931 0.910 0.919	0.885	4.292	85.838	0.957	Nil
TR	5	0.881 0.882 0.886 0.819 0.532	0.802	3.292	65.846	0.863	Nil
CI	3	0.796 0.822 0.899	0.652	2.117	70.560	0.790	Nil
BM	3	0.905 0.896 0.873	0.735	2.384	79.476	0.869	Nil
QC	7	0.726 0.768 0.860 0.553 0.820 0.640 0.802	0.779	3.889	55.557	0.854	Nil
IG	3	0.875 0.886 0.889	0.735	2.342	78.062	0.856	Nil
ID	4	0.653 0.857 0.798 0.644	0.697	2.213	55.317	0.725	Nil
RE	3	0.833 0.801 0.872	0.686	2.096	69.861	0.781	Nil
ITK	3	0.848 0.899 0.854	0.707	2.257	75.231	0.817	Nil
ITB	3	0.652 0.925 0.776	0.469	1.882	62.721	0.702	ITB4
ITP	4	0.786 0.757 0.868 0.688	0.710	2.417	60.431	0.755	Nil
FP	2	0.905 0.905	0.500	1.638	81.918	0.770	Nil
CP	2	0.904 0.904	0.500	1.634	81.688	0.774	Nil
PP	2	0.928 0.928	0.500	1.721	86.029	0.837	Nil
LGP	2	0.919 0.919	0.500	1.691	84.541	0.816	Nil
SOP	2	0.922 0.922	0.500	1.699	84.944	0.823	Nil

Moreover, according to Hair Ringle and Sarstedt (2011), Hair, Hult, Ringle and Sarstedt (2014) and Valerie (2012), the factor loadings of items should be greater than 0.70 to be retained in the analysis. Hair *et al.*, (2010) further recommended that the variables should generally have factor loadings of more than 0.50 as acceptable value. Table 3.7 showed that the factor loadings of all the items were within the recommended values between 0.532 and 0.954 except ITB4, which has lower factor loadings than the recommended values. Thus, all the questionnaire items had been retained and used in the final questionnaire except ITB4.

3.8 Data Analysis Techniques

To achieve the research objectives, two analyses were conducted using descriptive statistics analysis and inferential analysis technique. The descriptive statistics technique provides the background or profile of the respondents and helps in identifying the survey responses including response rates. It also helps in data screening and preliminary analysis, including missing data, response bias, descriptive statistics, outliers, normality, linearity, and multicollinearity. All these tests and analysis were extracted by utilizing the Statistical Package for Social Science (SPSS) version 21 while the inferential analysis technique was performed with the help of statistical package of smart Partial Least Square Structural Equation Modeling (PLS-SEM) version 3.0.

PLS path modelling had expanded successfully in different fields of research, such as marketing, strategic management, information system (IS), management science and social psychology among others (Pavlou & Fygenson, 2006; Henseler, Ringle, & Sinkovics, 2009; Hair *et al.*, 2011; Hair Sarstedt, Ringle, & Mena, 2012; Hair, Ringle, & Sarstedt, 2013). This is because many contributions have been recently made to improve PLS-SEM including guidelines for analyzing moderating effects (Henseler & Fassott, 2010), utilization of confirmatory factor analysis for the verification of the measurement model and model quality evaluation (Hair *et al.*, 2011), model's goodness of fit (Tenenhaus *et al.*, 2005), and the model's predictive relevance (Hair *et al.*, 2011). Therefore, PLS path modelling has recently become the key research technique (Hair *et al.*, 2014).

According to Goodhue, Lewis and Thompson (2006), PLS-SEM is a convenient and powerful method in many situations observed in social sciences research. For example, it has proven its ability to analyse data in complex models, non-normal data and small sample size (Hair *et al.*, 2012; Reinartz, Haenlein, & Henseler, 2009; Uinzi, Chin, Henseler, & Wang, 2010). Moreover, PLS-SEM provides more accurate estimates of mediating and moderating effects by accounting for the measurement error (Helm, Eggert, & Garnefeld 2010; Henseler & Fassott 2010). Thus, these advantages make the researcher opts for it in this study.

Specifically, the PLS path modelling was selected to test the theoretical model of this study because of many reasons. First, as mentioned previously that the main objective of this study is to examine the effect of interaction between TQM, MO and IT capability on MFIs performance. Moreover, it examines the effect of both TQM, MO in IT capability and the mediating effect of IT capability on the relationship between both TQM and MO from one side and MFIs performance from the other one. This implies that the current study is explorative in nature by applying RBV theory, capability theory and complementarity theory. Consequently, using a path modelling approach is a prerequisite as it has been recommended that when research is prediction-oriented or an extension of an existing theory; PLS path modelling is primarily utilized (Hair *et al.*, 2014).

Second, PLS is an appropriate statistical analysis tool for complex models and small sample sizes (Hair *et al.*, 2012; Reinartz *et al.*, 2009; Valerie, 2012; Uinzi *et al.*, 2010). The current study examined the relationships among four variables which are TQM, MO, IT capability and MFIs performance. Moreover, the model has 61

measurement items and a sample of 125. Therefore, the PLS is regarded as the most suitable method for this study for better prediction as PLS is a method of constructing a predictive model when there are many factors or measurement items involved and a relatively small sample size.

Third, it has been evident that SEM is superior to perform estimations than regressions when evaluating mediation (Iacobucci, Saldanha, & Deng, 2007; Preacher & Hayes, 2004). Moreover, it has been argued that PLS path modelling explains measurement error and lends more efficient and adequate estimates of the mediating effects (Helm *et al.*, 2010; Henseler & Fassott, 2010). To evaluate and interpret the results of the PLS path model, this study employed the two-step approach, namely measurement model evaluation and structural model evaluation (Henseler *et al.*, 2009; Valerie, 2012; Hair *et al.*, 2014).

In the first step, the measurement model (outer model) was tested to verify its validity and reliability by testing indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. Table 3.8 shows the criteria for evaluating the measurement model.

Table 3.8
The criteria of the measurement model evaluation

Test	Definition	Criterion
1-Indicator reliability	It refers to the degree to which the sets of items in the survey proposed to measure a construct can represent and reflect the concept which designed to be measured (Urbach & Ahlemann, 2010).	-The loading should be higher than 0.70 (Hair <i>et al.</i> , 2011; Hair <i>et al.</i> , 2014; Valerie, 2012).
2-Internal consistency Reliability	It refers to a measure employed to evaluate the consistency of results across items within a test and determine whether the items measuring a concept are similar in their scores (Hair <i>et al.</i> , 2014).	-The Cronbach's alpha and composite reliability (CR) values should be higher than 0.70 (Tenenhaus, <i>et al.</i> , 2005; Hair <i>et al.</i> , 2011; Valerie, 2012).
3-Convergent validity	It refers to the degree to which a measure indeed correlates positively with other measures of the same latent construct (Hair <i>et al.</i> , 2014).	-The AVE should be higher than 0.50 (Hair <i>et al.</i> , 2011; Valerie, 2012; Hair <i>et al.</i> , 2014).
4-Discriminant validity	It refers to the degree to which a particular construct is really different from other constructs according to the standards of empirical research (Hair <i>et al.</i> , 2014).	-Each indicator's loadings should load higher than all its cross loadings with other constructs based on Chin criterion. (Hair <i>et al.</i> , 2014). -The square root of the AVE of each latent construct should be higher than its highest correlation with any other construct based on Fornell-Larcker criterion (Hair <i>et al.</i> , 2014).

While in the second step, the structural model (inner model) of the study was evaluated by R-square (R^2), effect size (F^2), predictive relevance of the model, hypotheses testing and mediating testing. Table 3.9 shows the criteria for evaluating the structural and hypotheses testing model.

Table 3.9
The criteria of structural model evaluation

Test	Definition	Criterion
1-R-square (R^2)	It refers to a measure that reflects the amount of variance in the dependent variable that is explained by one or more predictor variables (Hair <i>et al.</i> , 2010).	-The values of R^2 (0.75=substantial, 0.50=moderate, and 0.25= weak) for endogenous latent variables in the structural model (Hair <i>et al.</i> , 2011, Hair <i>et al.</i> , 2014).
2-Effect size (f^2)	It refers to the relative impact of a particular exogenous latent variable on endogenous latent variable(s) (Hair <i>et al.</i> , 2014).	-The values of effect size (f^2) (0.02=weak, 0.15=moderate and 0.35=strong) in the structural model (Chin, 1998b).
3-Predictive relevance of the model	It is an indicator of the model's capability to predict by using a blindfolding procedure (Hair <i>et al.</i> , 2014).	-A research model with the cross redundancy value higher than zero is interpreted to have predictive relevance (Fornell & Cha, 1994, Hair <i>et al.</i> , 2011; Hair <i>et al.</i> 2014).
4-Path coefficients	The path relationships between the latent variables in the structural model (Hair <i>et al.</i> , 2014).	-The outputs of bootstrapping, including path coefficient, T-value and P-value that explain the significance of the path coefficients. The critical T-values for one-tailed test are 1.28 (significance level= 10%), 1.64 (significance level= 5%) and 2.33 (significance level= 1%) (Hair <i>et al.</i> , 2010). The minimum number of bootstrap samples should be 5000, and the number of cases should be equal to the number of observations in the original sample (Hair <i>et al.</i> , 2014).
5- Mediating effects	The mediation refers to a situation in which a mediator variable intervenes the relationship between an independent variable and dependent variable (Hayes, 2013)	-The bootstrapping method with 5000 samples and 95% confidence intervals (CI) were utilized in estimating the indirect effects under the study following the Preachers and Hayes (2008) strategy (Zhao <i>et al.</i> , 2010; Hayes Preacher, & Myers 2011; Hayes, 2013; Hair <i>et al.</i> (2014). -The criteria of Zhao <i>et al.</i> (2010) were also used to determine the type of mediation; full, partial (complementary) or no mediation.

3.9 Summary of the Chapter

This chapter detailed the research methodology used for the study in order to achieve the objectives stated in chapter one. As it has been reported in this chapter, this study is a quantitative research in nature. It highlights the population and sampling in addition to providing the rationale for using MFIs branches as a unit of analysis. Moreover, it outlines the measurement instrument used, hypotheses development and research design. It also explained the pilot study procedures so as to get a valid and reliable instrument. Finally, this chapter details the proposed data analysis techniques.



CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter highlights the results of data analysis collected from the survey in Yemen. Two statistical packages of Statistical Package for Social Science (SPSS) and Partial Least Square (PLS) path modelling were used in the analysis. The analysis begins by analysing the survey response, including response rates and respondents' profile. The data screening was performed and then the preliminary analysis is presented. The quality inspections were presented in three main sections. In the first section, the goodness of the measurement was tested to confirm indicator reliability, internal consistency reliability, convergent validity and discriminant validity. In the second section, the second-order constructs were established to ensure that they are well explained by first-order constructs. In the third section, the structural model is examined through R-square value, effect size, predictive relevance of the model, goodness of fit, direct hypotheses testing and the mediating relationships testing. Finally, the summary of the results and conclusion are presented.

4.2 Survey Response Analysis

4.2.1 Response Rates

Based on the recommendation by Zikmund (2003) to distribute the questionnaire to the whole population when the sample unit is small, the questionnaires were

distributed to all 166 branch managers of the microfinance institutions (MFIs) in Yemen. The researcher with the help of the research assistants has distributed the questionnaires to the respondents via a self-administered survey. The researcher collected a data collection letter from the Othman Yeop Abdullah Graduate School of Business (OYAGSB) which officially identifies the researcher and explains the purpose of the study. This was to enable the researcher to get support from the branch managers of MFIs who are the target respondents of this study.

In order to get high response rates, the researcher paid a visit to the Chief Board of Director of Yemen Microfinance Network (YMN) and the Manager of YMN asking for help, explaining the objectives and significance of the study for the microfinance sector in Yemen. Then, an email attached with the data collection letter was sent to the respondents from the YMN to make them obliged to answer the questionnaire. The researcher and the research assistants delivered the questionnaire to the branch managers of the MFIs by hand, asking them to finish answering the questionnaire and return it within a specific time. To remind them, many emails, phone call reminders and SMS by the YMN team and the researcher were sent to the late respondents who did not reply or sent the completed questionnaire back via email after one month from the questionnaire distribution date. The data was collected using the survey questionnaire over the three-month period of time from June 2014 to August 2014.

The outcomes of these efforts were possible with the great help of research assistants who visited all the branch managers, asking for their responses, yielded a total of 131 returned questionnaires. Out of these 131 questionnaires, 2 were discarded because

there are inconsistencies that make the researcher believes the questionnaires were not filled up by the target person, such as branch manager or vice-branch manager; instead, they were filled by the customer service officer or loan officer. Following the suggestion by Hair *et al.* (2010), 4 questionnaires were excluded from the analysis as more than 50% of their questions were not completed by the respondents. This results in 125 usable questionnaires for further analysis accounted for overall 75% valid response rate. According to Sekaran (2003), a response rate of 30% is adequate for surveys so that further analysis can be conducted. This study met the criteria. Table 4.1 shows the summary regarding the response rate of the survey.

Table 4.1
Number of Respondents and Response Rate

Response	Frequency/Rate
No. of questionnaires distributed	166
No. of questionnaires returned	131
No. of questionnaires not filled by the target person	2
No. of incomplete questionnaires	4
No. of usable questionnaires	125
Response rate	75%

4.2.2 Respondents Profile

The descriptive analysis was employed to describe the respondents profile in terms of the responders' job title, gender, age and number of years serving in the held position. In addition to that, the profile of the responding MFIs related to the number of years the branch in operation, the location, the legal status, the types of financing, the types of services and finally the a viability of quality officer who is in charge of quality is presented.

The majority of respondents were branch managers representing 68.8%, while the rest 31.2% were from the lowest rank of management team accepted for this study, the vice- managers or assistant managers as shown in Table 4.2. These respondents were able to describe the practices in the institution appropriately. The summary also shows that there are more males holding the managerial positions in the MFIs representing 72.8% compared to only 27.2% of females. With regard to the respondents' age, the majority of respondents were between the age of 30-39 years (53.6%), while 27.2% of respondents were less than 30 years, 10.0% of respondents were between the age of 50-59 and 8.0% of them were the age of 40-49 years. With respect to the work experience of their positions, the results show that the majority of the respondents have 1 to 5 years of experience representing 38.4%, followed by the respondents who have more than 5 years of experience representing 36.0% and only 25.6% of the respondents have less than 1 year experience. This indicates that the respondents of this study are knowledgeable regarding the situation of their institutions as well as the investigated practices under the study.

With respect to the number of years the branch is in operation, 68.0% of the branches have been operating for more than 3 years, 20.8% between 1-3 years and only 11.2% were considered as new branches with less than 1 year in operation. In order to identify the MFIs intervention fighting poverty, as the majority of the poor live in rural areas, the respondents were asked to state the branch location. The findings show that the majority of branches provide their services in the state capital with 86.4%, while only 5.6% and 8.0% of the branches provide their services in the suburbs and rural areas respectively. In categorizing the branches of MFIs in Yemen, according to the legal status, the results show that the branches with 33.6% were

related to agricultural banking, this type of bank has a special microfinance unit to provide microfinance services. 26.4% of the MFIs were small and medium banks, 24.8% were microfinance programs, 12.8% were foundations and only 2.4% were companies.

Concerning the types of financing, more than half of the operating MFIs branches, exactly 56.8%, provided financing based on Islamic principles, the customers' needs in a conservative country such as Yemen. 33.6% of the MFIs branches provided regular financing services and 9.6% of MFIs branches provided both Islamic and regular financial services. In regard to the types of services provided by the MFIs branches in Yemen, the results show that the majority of branches with 44.8% provided inclusive financial services such as loans, savings, money exchange, insurance and money remittance, 25.6% provided only loans, 15.2% provided both financial and nonfinancial services, which include customer training and 14.4% provided loans and savings. For the purpose of identifying the concern of MFIs in Yemen regarding quality, the respondents were asked whether there are quality officers who are in charge of quality in their institutions. The results show that more than three thirds of the respondents with 79.2% stated their institutions did not have quality officer and only 20.8% of the respondents stated the availability of this position in their institutions.

Table 4.2
The Responding MFIs Profile (N=125)

Variables	Category	N	%
Job title	Branch Manager	86	68.8
	Other	39	31.2
Gender	Male	91	72.8
	Female	34	27.2
Age	less than 30	34	27.2
	30-39	67	53.6
	40-49	10	8.0
	50-59	13	10.4
	More than 60	1	.8
Years serving in this position	Less than 1 year	32	25.6
	1-5 years	48	38.4
	More than 5 years	45	36.0
Years this branch in operation	Less than 1 year	14	11.2
	1-3 years	26	20.8
	More than 3 years	85	68.0
Branch Location	In the state capital	108	86.4
	In the Suburbs	7	5.6
	In the Rural	10	8.0
Legal Status	Program	31	24.8
	Foundation	16	12.8
	Small and Medium bank	33	26.4
	Company	3	2.4
	Agricultural Bank	42	33.6
Types of Financing	Islamic financing only	71	56.8
	Regular financing only	42	33.6
	Both Islamic and regular financing	12	9.6
Types of services	Loans only	32	25.6
	Loans and Savings	18	14.4
	Inclusive financial services	56	44.8
	Financial and nonfinancial services	19	15.2
Quality Officer	Yes	26	20.8
	No	99	79.2

4.3 Data Screening and Preliminary Analysis

4.3.1 Missing Data Treatment

In studies that employed quantitative approach, missing data is considered as an issue of major attention to many researchers because of the negative effect on the outcomes of the empirical research (Cavana, Delahaye, & Sekaran, 2001). In

addition to that, partial least squares-structural equation modelling (PLS-SEM) is very sensitive to be run in the case of existence of missing values. In this study, 13 returned questionnaires (9.6%) had missing values. Altogether, there were 28 missing values, ranging from one to five in each set of the missed questionnaire.

To treat the missing values, it has been recommended by many scholars to replace the missing values with mean of nearby values. This way is reported to be the easiest way when the total missing data percentage is 5% or less (Hair, Black, Babin, Andersen, & Tath, 2006; Tabachnick & Fidell, 2007; Hair *et al.*, 2014). Thus, the missing values were replaced with mean substitution.

4.3.2 Non-Response Bias Test

The existing evidence from a literature had reported that non-respondents sometimes vary systematically from respondents in various aspects such as attitudes, perceptions, behaviours, personalities and motivations which affect the findings of the study (Malhotra, Hall, Shaw, & Oppenheim, 2006). Moreover, they argued that the late respondents could be considered as no-respondents because they would not have likely responded if they have not been visited and reminded many times by the researcher. This study classified the sample into two main groups: early respondents, who responded within one month after distributing the survey, and late respondents, who responded after one month from distribution the survey. The majority of respondents were grouped as the early respondents, a total of 77 respondents, and the remaining 48 respondents were grouped as the late respondents (see Table 4.3).

For the purpose of further minimization the issue of non-response bias, an independent sample t-test including descriptive and Levene's test were carried out to detect the difference between the early and late respondents on the variables of the study. The results presented in Table 5.3 showed that the equal variance significance values for all the variables of the study were not significant, which were higher than 0.05, indicating that the variances were approximately homogeneous across the two groups. To conclude that on-response bias was not a critical concern in the current study since there were no significant variances between the early and late respondents. For more detailed verifications of non-respondent bias see Appendix 5.



Table 4.3
Non-Response Bias Test

Construct	Dimension	N	Mean	Levene's Test for Equality of Variances		T-test for Equality of Means	
				F	Sig.	Sig*. (2-tailed)	
Total Quality Management	LM	Early	77	4.07	1.196	.276	.526
		Late	48	3.99			.543
	CF	Early	77	4.54	.566	.453	.144
		Late	48	4.38			.152
	SP	Early	77	4.11	.424	.516	.479
		Late	48	4.19			.503
	TR	Early	77	3.97	.919	.340	.685
		Late	48	4.02			.697
	CI	Early	77	4.12	.127	.722	.788
		Late	48	4.15			.793
	BM	Early	77	3.60	.103	.749	.139
		Late	48	3.87			.143
	QC	Early	77	4.22	1.035	.311	.861
		Late	48	4.20			.865
	IG	Early	77	3.75	.028	.867	.336
		Late	48	3.89			.336
Market Orientation	ID	Early	77	3.97	1.907	.170	.380
		Late	48	4.04			.370
RE	Early	77	3.63	.302	.584	.841	
	Late	48	3.66			.840	
ITK	Early	77	4.16	.174	.677	.427	
	Late	48	4.06			.423	
Information Technology Capability	ITB	Early	77	4.46	.002	.965	.804
		Late	48	4.43			.805
ITP	Early	77	4.16	.949	.332	.918	
	Late	48	4.17			.920	

*p < 0.05

LM= Leadership Management; CF= Customer Focus; SP= Strategic Planning; TR=Training; CI= Continuous Improvement; BM= Benchmarking; QC= Quality Culture; IG= Intelligence Generation; ID= Intelligence Dissemination; RE=Responsiveness; ITK= IT Knowledge; ITB= IT Objects; ITP= IT Operation; FP= Financial Perspective; CP= Customer Perspective; PP= Internal Process Perspective; LGP= Learning and Growth Perspective; SOP= Social Perspective.

4.3.3 Descriptive Statistics

A descriptive statistics in the form of minimum, maximum, mean and standard deviations were computed. These results were employed to describe the implementation level of total quality management (TQM), market orientation (MO),

information technology (IT) capability and the perceived level of MFIs performance. All the constructs in the current study were measured using a five-Likert scale anchored by the value of 1 representing strongly disagree (the minimum value) to the value of 5 representing strongly agree (the maximum value). For the purpose of making the interpretation of the five-Likert scale, this study used three categories, namely low when the values are less than 2.33 [$4/3 +$ lowest value (1)], high when the values are more than 3.67 [highest value (5) - $4/3$] and moderate when the scores are between low and high. Noor and Kumar (2014) suggest this classification in their study regarding the interpretation of the five-Likert scale, which is similar and useful for the study.

The overall mean for the dimensions of the constructs ranged between 4.48 to 3.65, which suggested that all the dimensions were in the highest level except responsiveness dimension, which was in the moderate level as shown in Table 4.4. In particular, the results show that customer focus among the other dimensions of TQM and the other dimensions of the constructs of the study, namely MO, IT capability and MFIs performance had the maximum mean value of 4.48 with low standard deviation of 0.588. This indicated that the management of the MFIs gave attention and emphasized on customer satisfaction. The low standard deviation value suggests that they were not significantly different in their perception about the significant role of customer focus orientation in obtaining superior and sustainable organizational performance.

The results also show that quality culture, strategic planning and continuous improvement had the next highest values, beside customer focus based on the

respondents' perception. The mean values of both quality culture and strategic planning were 4.21, 4.14 and 4.13 with standard deviation 0.465, 0.662 and 0.699 respectively. This also revealed that the MFIs management gives much concern on quality culture establishment, strategic planning and continuous improvement practices to achieve the desired objectives. The significance of leadership management and training had been realized by the MFIs management with the mean value of 4.04 and 3.99 with the standard deviation of 0.684 and 0.629 respectively.

Benchmarking had the lowest mean value among the other dimensions of TQM, however, it was still in the high level category with the mean value of and 3.70 and standard deviation value of and 0.990. The MFIs management perceives benchmarking as important for building capabilities and improvement. In general, all the TQM dimensions had high mean values indicating that the MFIs management gives more attention to TQM practices within the MFIs.

With regard to the dimensions of MO, the results tabulated in Table 4.4 show that among the other dimensions of MO, intelligence dissemination had the maximum mean value of 3.99 with the standard deviation value of 0.465. This revealed that the MFIs management realizes that disseminating the information collected about customers and competitors within their institutions is crucial to respond to the needs of the customers. The low standard deviation value also showed that there was no significant difference among the respondents.

The results also showed that the mean value of intelligence generation and responsiveness were 3.80 and 3.65 with standard deviation 0.790 and 0.816

respectively. This explains that the MFIs management tends to collect information about the customers and competitors in order to understand their demands. Although, responsiveness had the lowest mean value among all the dimensions of the study variables, TQ, MO, IT capability and MFIs performance, it was in the moderate level. This revealed that the MFIs management has a moderate tendency to respond to the changes in the market environment such as technology, regulations and price strategies. Responding to these changes involves strong and viable institutions, whereas, the MFIs capabilities are limited. The high value of standard deviation shows that the MFIs management perception about responsiveness to these changes is different. This explains that the MFIs do not have the same resources and capabilities.

In respect to IT capability, the results highlighted in Table 4.4 showed that all the three dimensions of IT capability, IT object, IT knowledge and IT operation had a high level of perception with mean values of 4.45, 4.16 and 4.12 and standard deviation values of 0.691, 0.552 and 0.665. This explains that the MFIs management recognizes the crucial role of IT capability to achieve competitive advantage and high performance. In other words, these results indicated the importance of IT infrastructure, utilizing information technology in the banking operations and IT knowledge to use IT effectively.

In regard to MFIs performance construct, the results in Table 4.4 showed that internal process, financial, social, customer, and learning and growth perspectives had the mean values of 3.71, 3.90, 4.05, 4.06 and 4.09 and standard values of 0.552, 0.678, 0.825, 0.582 and 0.578. These results indicated that the MFIs management gives much concern to the service quality improvement and utilizing new innovations, methods

and procedures within the institutions. The social perspective had the highest value of standard deviation among all the dimensions of the study constructs. This explains that MFIs management does not have the same level of concern regarding the social objectives.

Table 4.4
Descriptive Statistics of the Constructs (N=125)

Construct	Dimension	N	Minimum	Maximum	Mean	Std. Deviation
Total Quality Management	LM	125	2	5	4.04	0.684
	CF	125	2	5	4.48	0.588
	SP	125	2	5	4.14	0.662
	TR	125	2	5	3.99	0.629
	CI	125	1	5	4.13	0.699
	BM	125	1	5	3.70	0.990
	QC	125	3	5	4.21	0.465
Market Orientation	IG	125	1	5	3.80	0.790
	ID	125	3	5	3.99	0.465
	RE	125	2	5	3.65	0.816
Information Technology Capability	ITK	125	2	5	4.12	0.665
	ITB	125	2	5	4.45	0.691
	ITP	125	2	5	4.16	0.552
Microfinance Institutions Performance	FP	125	2	5	3.90	0.678
	CP	125	2	5	4.06	0.582
	PP	125	3	5	3.71	0.552
	LGP	125	3	5	4.09	0.578
	SOP	125	1	5	4.05	0.825

4.3.4 Outliers

Among the primary data collection issues using questionnaires that should be addressed is the issue of outliers (Hair *et al.*, 2014). The existence of the outliers in the data results in distorting the estimates of regression coefficients and misleading results in the regression analysis (Verardi & Croux, 2008). The outliers occur because the respondent answers a particular question or all questions extremely (Hair

et al., 2014). According to Hair *et al.* (2006), detecting outliers based on Mahalanobis distance is an advantageous and effective method. This method can set a cut-off point that help researchers to define whether a point could be assorted as outlier or not.

This study employed the chi-square statistics table as the guidance to the cut-off point value. Based on 71 observed measurement items in the study, the cut-off point of chi-square was set at a value of 113.577, the threshold value at 1% significance level. The outcomes of SPSS showed that the highest value was 103.372, indicating the non-existence of outliers. Therefore, all the 125 cases were used in the analysis. For more details see Appendix 6.

4.3.5 Normality Test

The normality was regarded as the required assumption in multivariate analysis and in most statistical tests (Hair *et al.*, 2010) because any substantial violation of this assumption may lead to unreliable results. Normality refers to the symmetrical distribution of data, forming the greatest frequency around the mean that shape the bell curve (Pallant, 2005). Among different ways to assess normality, it is recommended to use skewness and kurtosis values to show the data distribution shape (Pallant, 2005).

Skewness is a measure which shows to what extent a distribution of data deviates from the centre around the mean (George & Mallery, 2006). It was also stated that, by nature many scales and measures are positively or negatively skewed in social

science researches (Pallant, 2005). According to Hair *et al.* (2010), the values of skewness must be ranged between +1 and -1 for the data to be described as normal data. However, Kline (1998) suggests that the threshold between +3 and -3 is acceptable. Using the suggestion by Kline (1998), the results in Table 4.5 showed that the skewness values of the constructs under the study were found to be within the range of +3 and -3, indicating the normal distribution of the data.

Kurtosis is an indicator to detect whether the data set are peaked or flat relative to a normal distribution. The kurtosis values can be negative or positive where negative values refer to a flatter distribution while positive values refer to more peaked distribution (George & Mallery, 2006). In respect to the cut-off point of kurtosis values range, it is recommended to be between +3 and -3 (Coakes & Steed, 2003), while authors such as Hu *et al.* (1992) use the range of +7 to -7. In this study as illustrated in Table 4.5, all kurtosis values were in the range within +3 and -3 values. Thus, the cut-off point by Coakes and Steed (2003) can be referred to the data in this study has no problem with kurtosis. As the data has no problem with skewness, it is proven that the data is normal.

In conclusion, the results of normality test showed that the normality assumption was not violated. This indicates that all the data representing the constructs of the study were normally distributed. See Appendix 7 for more information regarding normality test.

As the PLS-SEM can provide adequate model estimations, even in situations with extremely non-normal (Reinartz *et al.*, 2009; Hair *et al.*, 2011; Hair *et al.*, 2014), the use of PLS-SEM can produce the supporting and also being in the analysis.

Table 4.5
Normality Test

Construct	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Leadership Management	-1.230	.217	1.656	.430
Customer Focus	-1.324	.217	2.104	.430
Strategic Planning	-.920	.217	1.470	.430
Training	-.962	.217	.970	.430
Continuous Improvement	-1.318	.217	3.034	.430
Benchmarking	-.733	.217	.199	.430
Quality Culture	-.519	.217	-.484	.430
Intelligence Generation	-.690	.217	.615	.430
Intelligence Dissemination	-.291	.217	.292	.430
Responsiveness	-.504	.217	-.093	.430
IT Knowledge	-.701	.217	.364	.430
IT Objects	-1.033	.217	.006	.430
IT Operation	-.506	.217	.340	.430
Financial Perspective	-.459	.217	.100	.430
Customer Perspective	-.444	.217	.539	.430
Internal process Perspective	.211	.217	-.034	.430
Learning and Growth Perspective	-.103	.217	-.199	.430
Social perspective	-1.211	.217	2.008	.430

4.3.6 Linearity Test

Testing linearity is crucial in order to predict the right direction of hypotheses, when the residuals have a straight line association with dependent variables (Pallant,

2005). The positive value shows the existence of a positive relationship between the independent and the predicted dependent variable. According to Hair *et al.* (2006), it is imperative that each independent variable's relationship is linear to guarantee the best representation in the equation and achieve the objective of homoscedasticity of the data. The normal P-P plot of regression standardized residual plot method was employed to test each independent variable's relationship with the dependent variable. In addition to that, all scatter plots related to these relationships were produced. Based on the result of linearity testing, the histograms and scatter plot diagrams are displayed graphically in (see Appendix 8), showing the linear pattern to the residuals. By looking at the plots, it is obvious that there is no U-shaped or other curvilinear relationship; therefore, the linearity assumption is met in the study.

4.3.7 Multicollinearity

It is highly recommended to test multicollinearity among the independent variables of the study before testing the study model (Hair *et al.*, 2010). The multicollinearity occurs when there is a higher linear correlation among two or more independent variables in a multiple regression test (Hair *et al.*, 2014). If only two independent variables are involved, it is called collinearity (Hair *et al.*, 2014). The existence of multicollinearity among the exogenous latent variables produces estimation problem which results in a poor or "strange" estimate of the regression coefficient, large standard error, and reduced power of the statistical test of the interaction (Hayes, 2013).

To detect the multicollinearity, there are many methods such as the tolerance value, the variance influence factor (VIF) and Pearson correlation. This study used the tolerance value and the variance influence factor (VIF) as they have been recognized to be widely used by researchers (O'brien, 2007), in addition to the Pearson correlation method. According to Hair *et al.* (2014), the threshold values for both the tolerance value and VIF are 0.20 and 5.00 respectively, and whenever the value of tolerance is above.20 and the value of VIF is less than 5.00, this indicates that multicollinearity is not an issue. The results in Table 4.6 suggest that there was no multicollinearity as the values of tolerance ranged between 0.549 and 0.639 and the values of variance influence factor ranged between 1.565 and 2.049. Therefore, it can be confidently concluded that there is no multicollinearity among the independent variables. The output of multicollinearity test is shown in Appendix 9.

Table 4.6
Mutlicollinearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
Total Quality Management	Microfinance Institutions	0.549	1.823
Market Orientation	Performance	0.488	2.049
Information Technology Capability		0.639	1.565
Total Quality Management	Information Technology	0.571	1.750
Market Orientation	Capability	0.571	1.750

Hair *et al.* (2010) suggest the rule of thumb to detect multicollinearity. They suggest if the significant correlation between the independent variables has a value higher than 0.90, then this indicates the existence of multicollinearity. As shown in Table 4.7, the values of Pearson correlation were less than the cut-off point of 0.90 suggesting that there was no multicollinearity between the predicted variables.

Table 4.7
Pearson Correlations of the Study Variables

	TQM	MO	IT cap
Total Quality Management (TQM)	1		
Market Orientation (MO)	.655**	1	
Information Technology (IT) Capability	.502**	.578**	1

** . Correlation is significant at the 0.01 level (2-tailed).

An overall examination of the data showed that the basic assumptions such as normality, linearity and no multicollinearity are not major issues and concerns in the current study. The next step is about the evaluation of the study model, including the goodness of measures and structural model. A detailed discussion about these two approaches is presented in the following section.

4.4 Quality Model Evaluation

The quality model assessment was done using the software package PLS-SEM, version 3.0 (Ringle, Wende, & Becker, 2014). This software has been widely used by many researchers from different disciplines, such as marketing, strategic management, management information system, organizational behaviour and customer behaviour (Henseler *et al.*, 2009). In order to use PLS-SEM, it is crucial to conduct advanced analyses which extend and distinct the initial PLS-SEM findings in order to get valid and complete understanding of the results (Hair *et al.*, 2014). In doing so, the study adopted the two-step process, namely (i) measurement model evaluation and (ii) structural model evaluation to assess and interpret the results of the PLS path model (refer to Straub, Boudreau, & Gefen, 2004; Lewis, Templeton, & Byrd, 2005; Henseler *et al.*, 2009; Urbach & Ahlemann, 2010; Hair *et al.* 2012;

Hair *et al.* 2014). Figure 4.1 shows the two-step process of the quality model evaluation.

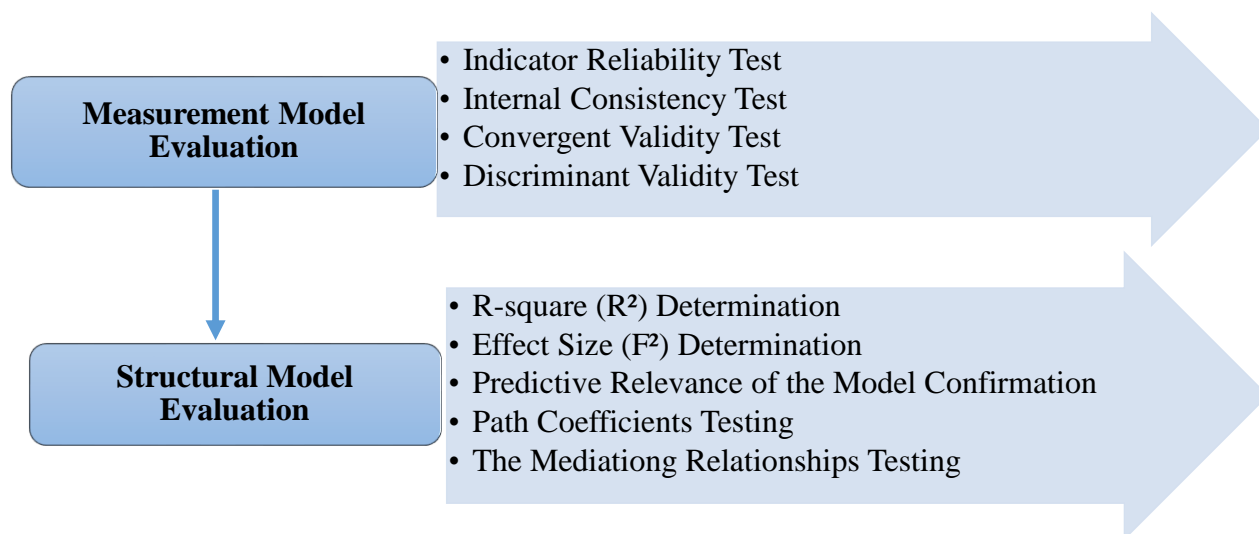


Figure 4.1
A Two-step Process of PLS-SEM Evaluation
Source: Henseler *et al.* (2009)

The next subsections present and report the results of quality model assessment, measurement model test and structural model test, for this study.

4.4.1 Measurement Model Evaluation

The goodness of the measurement was evaluated in order to confirm the validity and reliability of the output of the analysis processes using the PLS -SEM technique. Based on Hair *et al.* (2014), Hair *et al.* (2011) and Henseler *et al.* (2009), this study assessed indicator reliability, internal consistency reliability, convergent validity and discriminant validity before testing the hypotheses of the model. Figure 4.2 depicted below showed the original research model, including measurement items, dimensions, variables and the hypothesized relationships.

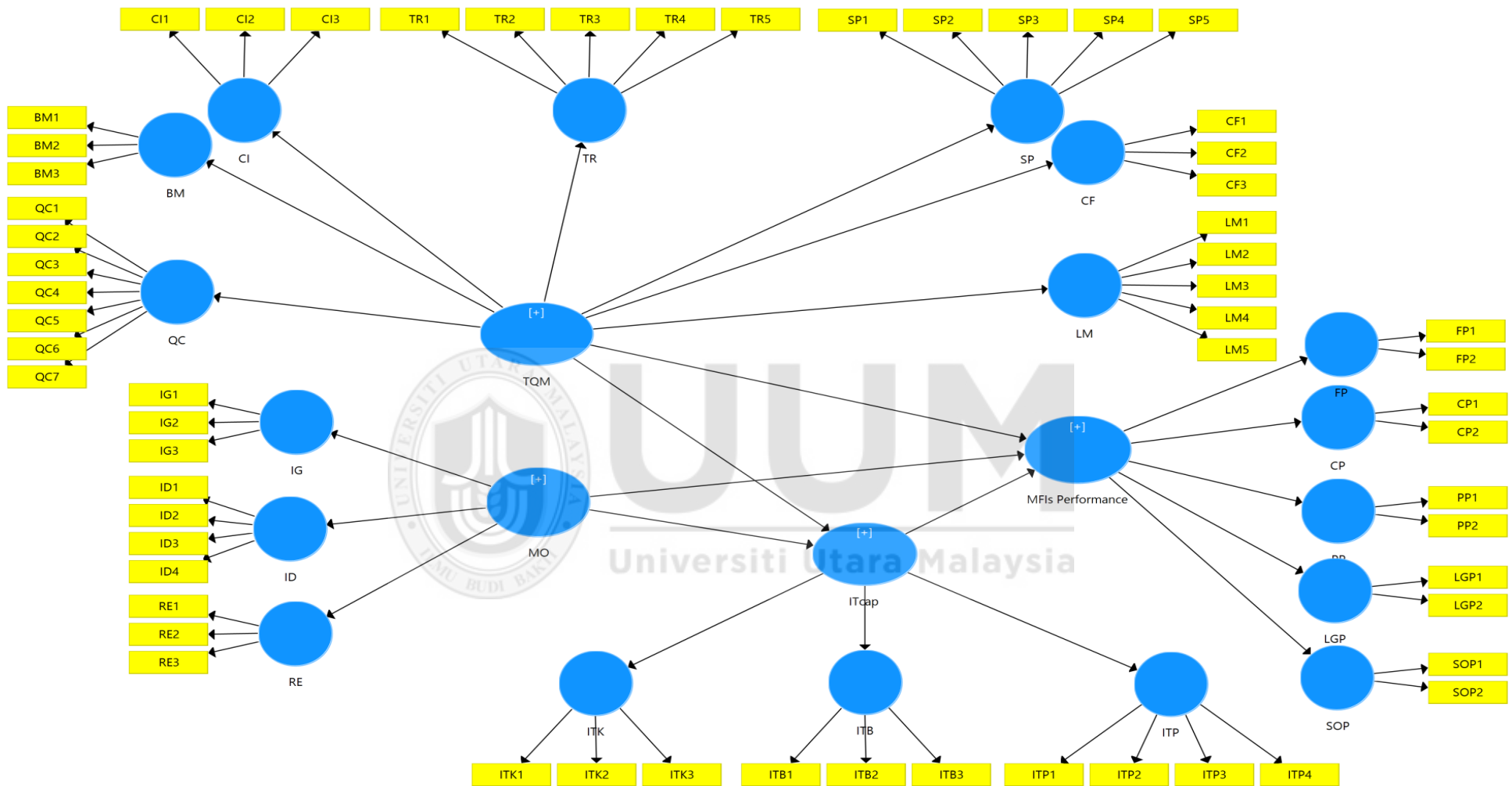


Figure 4.2
The Original Research Mode

4.4.1.1 Indicator Reliability

The indicator reliability was examined according to outer loadings of each measure intended to measure a construct where the factor loading of items should be significantly higher than 0.70 (Hair *et al.*, 2011; Hair *et al.*, 2014; Valerie, 2012). Following this criteria, a total of 11 items out of 61 items were deleted as their loadings were lower than the recommended value of 0.70. They were CF2 (0.686), ID3 (0.554), IPT (0.689), LM2 (0.616), LM3 (0.638), QC5 (0.355), QC1 (0.636), QC6 (0.697), SP5 (0.691), TR3 (0.673) and TR2 (0.674). As illustrated in Table 4.8, therefore, only 50 items were retained to be used in the further analysis as they had loadings of more than 0.70. To conclude that the indicator reliability of the model measures was established as all the items exceeded the cut-off point value of 0.70 and confirmed to be significant.

Table 4.8
The Significance of the Factor Loadings

Construct	Items	Loadings	Standard Error	T-value	P-value
Benchmarking	BM1	0.912	0.024	37.502	0.000
	BM2	0.924	0.014	65.121	0.000
	BM3	0.886	0.030	29.492	0.000
Customer Focus	CF1	0.903	0.021	42.574	0.000
	CF3	0.891	0.032	27.757	0.000
	CI1	0.731	0.069	10.669	0.000
Continuous Improvement	CI2	0.819	0.053	15.597	0.000
	CI3	0.865	0.036	24.006	0.000
	CP1	0.905	0.019	48.595	0.000
Customer Perspective	CP2	0.878	0.029	29.786	0.000
	FP1	0.839	0.043	19.388	0.000
Financial Perspective	FP2	0.915	0.014	67.203	0.000
	ID1	0.831	0.020	40.799	0.000
Intelligence Dissemination	ID2	0.768	0.045	16.934	0.000
	ID4	0.772	0.052	14.731	0.000

Table 4.8 (Continued)

Construct	Items	Loadings	Standard Error	T-value	P-value
Intelligence Generation	IG1	0.820	0.051	15.996	0.000
	IG2	0.884	0.018	47.863	0.000
	IG3	0.885	0.024	37.276	0.000
IT Objects	ITB1	0.866	0.025	35.189	0.000
	ITB2	0.903	0.023	39.585	0.000
	ITB3	0.777	0.051	15.188	0.000
IT Knowledge	ITK1	0.866	0.022	39.004	0.000
	ITK2	0.826	0.037	22.130	0.000
	ITK3	0.873	0.025	34.441	0.000
IT Operation	ITP1	0.825	0.033	25.108	0.000
	ITP3	0.765	0.044	17.503	0.000
	ITP4	0.793	0.042	18.828	0.000
Learning and Growth Perspective	LGP1	0.896	0.027	33.761	0.000
	LGP2	0.874	0.026	33.601	0.000
Leadership Management	LM1	0.818	0.034	24.187	0.000
	LM4	0.860	0.032	27.193	0.000
	LM5	0.880	0.030	29.490	0.000
Internal process Perspective	PP1	0.881	0.026	33.662	0.000
	PP2	0.880	0.028	31.676	0.000
Quality Culture	QC2	0.702	0.067	10.458	0.000
	QC3	0.742	0.067	11.114	0.000
	QC4	0.769	0.051	15.030	0.000
	QC7	0.729	0.069	10.594	0.000
Responsiveness	RE1	0.826	0.031	26.690	0.000
	RE2	0.838	0.032	26.399	0.000
	RE3	0.852	0.028	30.570	0.000
Social perspective	SOP1	0.923	0.143	6.479	0.000
	SOP2	0.861	0.172	4.997	0.000
Strategic Planning	SP1	0.829	0.031	26.865	0.000
	SP2	0.805	0.043	18.908	0.000
	SP3	0.809	0.044	18.235	0.000
	SP4	0.704	0.062	11.294	0.000
Training	TR1	0.791	0.052	15.106	0.000
	TR4	0.817	0.043	18.947	0.000
	TR5	0.878	0.027	32.604	0.000

4.4.1.2 Internal Consistency Reliability

In order to test the internal consistency reliability, Cronbach's alpha along with composite reliability (CR), the most common indicators utilized to check the reliability of the internal consistency in the organizational research discipline, are utilized in the study (Peterson & Kim, 2013). For the Cronbach's alpha, it is very sensitive to the number of items in the measure so it tends to underestimate the internal consistency reliability of the measures. Therefore, it can be utilized as a conservative method to measure the internal consistency reliability (Hair *et al.*, 2014). The threshold values of both Cronbach's alpha and CR values should be higher than 0.70 (Tenenhaus *et al.*, 2005; Hair *et al.*, 2011; Valerie, 2012).

In this study, all the Cronbach's alpha values of all constructs ranged between 0.70 and 0.89 as shown in Table 4.9. In addition, the CR values of all the constructs exceeded the minimum acceptable value of 0.70; specifically they ranged between 82 and 93. Thus, it can be concluded that the internal consistency reliability of the measures was verified and confirmed.

Table 4.9
Internal Consistency Analysis

Construct	Items	Loadings	Cronbach's Alpha	CR ^a	AVE ^b
Benchmarking	BM1	0.912	0.893	0.933	0.823
	BM2	0.924			
	BM3	0.886			
Customer Focus	CF1	0.903	0.757	0.892	0.804
	CF3	0.891			
	CI1	0.731			
Continuous Improvement	CI2	0.819	0.731	0.848	0.651
	CI3	0.865			
	CP1	0.905			
Customer Perspective	CP2	0.878	0.743	0.886	0.795
	FP1	0.839			
Financial Perspective	FP2	0.915	0.709	0.870	0.771
	ID1	0.831			
Intelligence Dissemination	ID2	0.768	0.705	0.833	0.626
	ID4	0.772			
	IG1	0.820			
Intelligence Generation	IG2	0.884	0.830	0.898	0.746
	IG3	0.885			
	ITB1	0.866			
IT Objects	ITB2	0.903	0.807	0.886	0.723
	ITB3	0.777			
	ITK1	0.866			
IT Knowledge	ITK2	0.826	0.816	0.891	0.731
	ITK3	0.873			
	ITP1	0.825			
IT Operation	ITP3	0.765	0.709	0.837	0.632
	ITP4	0.793			
	LGP1	0.896			
Learning and Growth Perspective	LGP2	0.874	0.724	0.878	0.783
	LM1	0.818			
Leadership Management	LM4	0.860	0.812	0.889	0.727
	LM5	0.880			
	PP1	0.881			
Internal Process Perspective	PP2	0.880	0.709	0.873	0.775
	QC2	0.702			
Quality Culture	QC3	0.742	0.721	0.825	0.541
	QC4	0.769			
	QC7	0.729			

Table 4.9 (Continued)

Construct	Items	Loadings	Cronbach's Alpha	CR ^a	AVE ^b
Responsiveness	RE1	0.826	0.790	0.877	0.704
	RE2	0.838			
	RE3	0.852			
Social perspective	SOP1	0.923	0.750	0.887	0.797
	SOP2	0.861			
Strategic Planning	SP1	0.829	0.795	0.867	0.621
	SP2	0.805			
	SP3	0.809			
	SP4	0.704			
Training	TR1	0.791	0.773	0.868	0.688
	TR4	0.817			
	TR5	0.878			

4.4.1.3 Convergent Validity

In order to verify the convergent validity on the construct level, Hair *et al.* (2014) suggested using the Average Variance Extracted (AVE) as it has become a widespread method. As a rule of thumb, the AVE of each latent construct should be higher than 0.50 for establishing adequate convergent validity (Hair *et al.*, 2011; Valerie, 2012; Hair *et al.*, 2014). In this study, Table 4.9 above showed that all the values of AVE were in the acceptable range between 0.541 and 0.823 indicating an adequate convergent validity. Thus, the convergent validity was confirmed in the study.

4.4.1.4 Discriminant Validity

To measure the discriminant validity, the study used the cross loadings of the items and Fornell-Larcker criterion as suggested by Hair *et al.* (2014). For examining the cross loadings of the indicators, an item's outer loading on the related construct should be higher than all of its loadings on other constructs. In other words, each item should load higher on the construct designed to measure and lower on the other constructs (i.e. the cross loadings). Table 4.10 below shows that all items' loadings were higher than cross loadings indicating verified discriminant validity.

For the Fornell-Larcker criterion, the square root of AVE values should be compared with correlations of each latent construct as the requirement to achieve discriminant validity. In other words, the square root of each latent construct's AVE should be greater than its highest correlation with any other latent construct. This criterion is considered as a more conservative method for evaluating discriminant validity (Hair *et al.*, 2014).

As shown in Table 4.11, all the square root of the AVE values exceeded the correlations of latent construct suggesting that the discriminant validity was established in the current study.

Table 4.10
Factor Analysis and Item Loadings

Construct	Items	BM	CF	CI	CP	FP	ID	IG	ITB	ITK	ITP	LGP	LM	PP	QC	RE	SOP	SP	TR
Benchmarking	BM1	0.912	0.144	0.302	0.180	0.287	0.313	0.250	0.301	0.035	0.287	0.249	0.320	0.031	0.103	0.437	0.186	0.478	0.555
	BM2	0.924	0.261	0.356	0.176	0.342	0.360	0.343	0.389	0.114	0.306	0.241	0.387	-0.004	0.152	0.441	0.194	0.513	0.562
	BM3	0.886	0.260	0.212	0.149	0.305	0.417	0.282	0.208	0.095	0.289	0.345	0.252	0.123	0.100	0.395	0.105	0.411	0.537
Customer Focus	CF1	0.197	0.903	0.439	0.245	0.122	0.296	0.246	0.209	0.142	0.020	0.233	0.563	-0.098	0.417	0.268	0.047	0.543	0.354
	CF3	0.242	0.891	0.366	0.225	0.187	0.360	0.347	0.307	0.233	0.199	0.288	0.385	0.081	0.432	0.279	-0.010	0.468	0.432
Continuous Improvement	CI1	0.180	0.280	0.731	0.364	0.113	0.297	0.301	0.367	0.293	0.144	0.353	0.341	0.134	0.272	0.293	0.226	0.438	0.379
	CI2	0.294	0.412	0.819	0.161	0.061	0.292	0.312	0.354	0.113	0.236	0.403	0.355	0.149	0.305	0.312	0.249	0.470	0.396
	CI3	0.298	0.388	0.865	0.293	0.217	0.385	0.463	0.373	0.098	0.269	0.380	0.566	0.116	0.264	0.326	0.269	0.620	0.390
Customer Perspective	CP1	0.206	0.195	0.236	0.905	0.489	0.282	0.191	0.194	0.069	0.351	0.374	0.187	0.210	0.320	0.337	0.071	0.280	0.214
	CP2	0.121	0.278	0.365	0.878	0.328	0.264	0.255	0.244	0.128	0.198	0.292	0.317	0.142	0.415	0.254	0.249	0.351	0.184
Financial Perspective	FP1	0.223	0.103	0.044	0.294	0.839	0.205	0.181	0.281	0.142	0.337	0.229	0.032	0.231	0.180	0.394	0.083	0.153	0.312
	FP2	0.364	0.187	0.224	0.494	0.915	0.392	0.220	0.340	0.186	0.336	0.351	0.204	0.336	0.352	0.418	0.221	0.293	0.373
Intelligence Dissemination	ID1	0.394	0.349	0.365	0.191	0.288	0.831	0.514	0.339	0.295	0.379	0.469	0.314	0.166	0.228	0.419	0.042	0.378	0.465
	ID2	0.269	0.364	0.366	0.306	0.259	0.768	0.330	0.253	0.148	0.315	0.305	0.342	0.216	0.213	0.288	0.062	0.421	0.375
	ID4	0.258	0.120	0.210	0.246	0.298	0.772	0.218	0.208	0.180	0.312	0.292	0.199	0.275	0.233	0.229	0.113	0.222	0.357
Intelligence Generation	IG1	0.268	0.323	0.387	0.229	0.196	0.387	0.820	0.311	0.241	0.423	0.159	0.266	-0.019	0.217	0.338	0.175	0.455	0.273
	IG2	0.338	0.266	0.388	0.209	0.229	0.453	0.884	0.418	0.354	0.576	0.311	0.211	0.098	0.235	0.525	0.230	0.395	0.425
	IG3	0.224	0.268	0.395	0.206	0.170	0.370	0.885	0.200	0.163	0.464	0.276	0.274	0.106	0.187	0.372	0.177	0.423	0.269
IT Objects	ITB1	0.244	0.225	0.352	0.210	0.240	0.237	0.238	0.866	0.454	0.567	0.321	0.460	0.051	0.194	0.397	0.261	0.409	0.404
	ITB2	0.252	0.270	0.361	0.242	0.307	0.283	0.385	0.903	0.444	0.520	0.324	0.398	0.005	0.406	0.334	0.264	0.436	0.477
	ITB3	0.374	0.235	0.445	0.166	0.374	0.376	0.305	0.777	0.292	0.510	0.444	0.276	0.158	0.245	0.440	0.120	0.387	0.444
IT Knowledge	ITK1	0.073	0.169	0.151	0.130	0.151	0.259	0.305	0.399	0.866	0.308	0.277	0.205	0.104	0.100	0.240	-0.039	0.110	0.279
	ITK2	0.007	0.188	0.181	0.046	0.203	0.192	0.117	0.384	0.826	0.210	0.307	0.180	0.133	0.242	0.198	-0.131	0.068	0.145
	ITK3	0.143	0.177	0.174	0.097	0.137	0.243	0.325	0.425	0.873	0.266	0.277	0.254	0.087	0.182	0.142	0.006	0.152	0.274

Table 4.10 (Continued)

Construct	Items	BM	CF	CI	CP	FP	ID	IG	ITB	ITK	ITP	LGP	LM	PP	QC	RE	SOP	SP	TR
IT Operation	ITP1	0.159	0.021	0.079	0.275	0.376	0.325	0.417	0.486	0.369	0.825	0.365	0.173	0.278	0.053	0.302	0.090	0.279	0.312
	ITP3	0.129	0.079	0.219	0.249	0.164	0.225	0.407	0.441	0.179	0.765	0.269	0.154	0.164	0.177	0.414	0.230	0.240	0.231
	ITP4	0.484	0.191	0.366	0.222	0.351	0.462	0.535	0.564	0.170	0.793	0.424	0.371	0.179	0.137	0.417	0.283	0.538	0.483
Learning and Growth Perspective	LGP1	0.224	0.202	0.371	0.335	0.304	0.388	0.260	0.330	0.277	0.427	0.896	0.232	0.521	0.278	0.274	0.109	0.236	0.316
	LGP2	0.317	0.315	0.463	0.330	0.296	0.433	0.257	0.420	0.316	0.361	0.874	0.357	0.261	0.231	0.437	0.224	0.419	0.459
Leadership and Management	LM1	0.386	0.516	0.463	0.211	0.325	0.419	0.309	0.453	0.350	0.314	0.392	0.818	0.029	0.326	0.367	0.162	0.567	0.525
	LM4	0.269	0.404	0.404	0.271	0.066	0.295	0.222	0.374	0.202	0.225	0.252	0.860	-0.078	0.332	0.203	0.197	0.644	0.367
	LM5	0.244	0.430	0.489	0.230	-0.036	0.206	0.196	0.310	0.069	0.201	0.183	0.880	-0.124	0.243	0.121	0.154	0.612	0.249
Internal Process Perspective	PP1	0.031	-0.014	0.075	0.217	0.334	0.181	0.065	0.078	0.111	0.266	0.326	-0.092	0.881	0.071	0.092	0.083	-0.005	0.101
	PP2	0.059	-0.008	0.212	0.134	0.247	0.290	0.067	0.060	0.109	0.198	0.463	-0.020	0.880	0.148	0.048	0.107	0.007	0.175
Quality Culture	QC2	0.142	0.458	0.276	0.299	0.219	0.305	0.109	0.129	0.137	0.027	0.316	0.266	0.146	0.702	0.058	0.040	0.166	0.112
	QC3	0.035	0.198	0.108	0.203	0.266	0.189	0.157	0.182	0.071	0.117	0.037	0.084	0.083	0.742	0.239	0.056	0.146	0.145
	QC4	0.094	0.351	0.365	0.334	0.231	0.103	0.159	0.338	0.218	0.107	0.300	0.387	0.042	0.769	0.267	0.186	0.288	0.203
	QC7	0.100	0.344	0.214	0.332	0.225	0.245	0.288	0.293	0.134	0.182	0.144	0.242	0.099	0.729	0.349	0.203	0.294	0.321
Responsiveness	RE1	0.373	0.290	0.427	0.295	0.355	0.423	0.465	0.469	0.236	0.435	0.423	0.365	0.057	0.262	0.826	0.210	0.455	0.459
	RE2	0.362	0.212	0.277	0.306	0.332	0.267	0.346	0.283	0.068	0.308	0.228	0.099	-0.048	0.211	0.838	0.083	0.260	0.291
	RE3	0.442	0.257	0.251	0.239	0.473	0.324	0.394	0.377	0.249	0.428	0.332	0.212	0.182	0.316	0.852	0.173	0.325	0.533
Social perspective	SOP1	0.229	0.083	0.313	0.168	0.218	0.152	0.249	0.267	-0.025	0.250	0.198	0.211	0.110	0.204	0.195	0.923	0.271	0.307
	SOP2	0.074	-0.066	0.228	0.138	0.094	-0.022	0.143	0.184	-0.092	0.184	0.123	0.139	0.080	0.098	0.137	0.861	0.171	0.143
Strategic Planning	SP1	0.561	0.413	0.541	0.251	0.312	0.429	0.418	0.485	0.146	0.435	0.380	0.538	0.037	0.240	0.478	0.214	0.829	0.574
	SP2	0.451	0.429	0.443	0.258	0.166	0.371	0.306	0.311	0.049	0.295	0.235	0.703	-0.034	0.268	0.218	0.116	0.805	0.469
	SP3	0.380	0.339	0.603	0.353	0.277	0.325	0.446	0.395	0.183	0.386	0.220	0.519	0.028	0.282	0.337	0.293	0.809	0.440
	SP4	0.204	0.629	0.418	0.246	0.052	0.236	0.372	0.322	0.023	0.272	0.316	0.481	-0.034	0.205	0.276	0.180	0.704	0.301
Training	TR1	0.565	0.306	0.180	0.107	0.252	0.339	0.192	0.396	0.270	0.222	0.311	0.366	-0.011	0.255	0.363	0.087	0.394	0.791
	TR4	0.385	0.392	0.513	0.212	0.267	0.459	0.367	0.434	0.100	0.387	0.342	0.450	0.212	0.253	0.351	0.340	0.546	0.817
	TR5	0.574	0.382	0.468	0.227	0.452	0.463	0.366	0.456	0.325	0.449	0.422	0.312	0.168	0.179	0.564	0.209	0.478	0.878

Table 4.11

Correlation and Discriminant Validity

	BM	CF	CI	CP	FP	ID	IG	ITB	ITK	ITP	LGP	LM	PP	QC	RE	SOP	SP	TR
BM	0.907																	
CF	0.244	0.897																
CI	0.324	0.450	0.807															
CP	0.186	0.262	0.333	0.892														
FP	0.344	0.171	0.167	0.463	0.878													
ID	0.398	0.364	0.405	0.306	0.354	0.791												
IG	0.323	0.329	0.451	0.248	0.230	0.469	0.864											
ITB	0.335	0.286	0.450	0.244	0.357	0.346	0.363	0.850										
ITK	0.090	0.207	0.196	0.108	0.189	0.272	0.297	0.471	0.855									
ITP	0.324	0.120	0.273	0.313	0.381	0.428	0.569	0.626	0.308	0.795								
LGP	0.303	0.289	0.469	0.376	0.339	0.463	0.292	0.422	0.334	0.447	0.885							
LM	0.356	0.531	0.531	0.278	0.149	0.366	0.288	0.449	0.250	0.293	0.330	0.853						
PP	0.051	-0.012	0.163	0.199	0.330	0.267	0.075	0.079	0.125	0.264	0.448	-0.064	0.880					
QC	0.132	0.473	0.345	0.409	0.316	0.283	0.247	0.333	0.201	0.149	0.288	0.355	0.124	0.736				
RE	0.468	0.305	0.384	0.334	0.462	0.408	0.483	0.455	0.226	0.470	0.398	0.277	0.080	0.315	0.839			
SOP	0.181	0.021	0.308	0.173	0.184	0.086	0.227	0.258	-0.060	0.247	0.185	0.201	0.108	0.177	0.190	0.893		
SP	0.518	0.565	0.638	0.351	0.264	0.438	0.489	0.483	0.131	0.444	0.366	0.712	0.001	0.317	0.419	0.254	0.788	
TR	0.607	0.437	0.479	0.224	0.393	0.511	0.379	0.518	0.275	0.433	0.434	0.454	0.157	0.275	0.516	0.264	0.574	0.829

BM= Benchmarking; CF= Customer Focus; CI= Continuous Improvement; CP= Customer Perspective; FP= Financial Perspective; ID= Intelligence Dissemination; IG= Intelligence Generation; ITB= IT Objects; ITK= IT Knowledge; ITP= IT Operation; LGP= Learning and Growth Perspective; LM= Leadership Management; PP= Internal Process Perspective; QC= Quality Culture; RE=Responsiveness; SOP= Social Perspective; SP= Strategic Planning; TR=Training.

4.4.2 First-order and Second-order constructs

Initially, the differences between the first and the second order measurement models should be provided before going further to assess the theoretical and conceptual aspect of the second order constructs. According to Hair *et al.* (2014), a first-order construct, also referred as lower-order component, is a sub-dimension of the higher-order component in a hierarchical component model. The first-order is measured by a single dimension comprising of a set of indicators. While the second-order is also referred as higher-order component, it consists of two or more lower-order components in a reflective or formative way. The second-order constructs are measured by two or more dimensions. As shown below in Figure 4.3, Intelligence Generation (IG) as a latent construct was measured by a set of measured indicators namely IG1, IG2 and IG3.

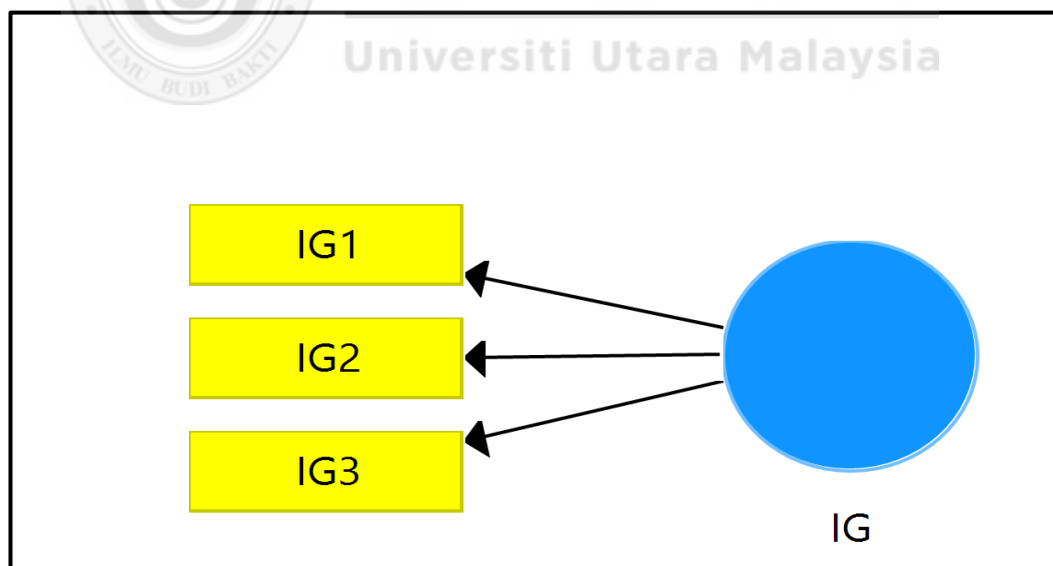


Figure 4.3
First-order Measurement of Intelligence Generation (IG)

In Figure 4.4 below, market orientation (MO) construct was measured indirectly by nine items through another layer of latent constructs. Thus, MO is called a second-order measurement model. The second-order factor structure has two layers of latent variables. In this study there were four second-order constructs namely TQM, MO, IT capability and MFIs performance. The following subsection provides more clarification and justification for using TQM, MO, IT capability and MFIs performance as second-order variable models.

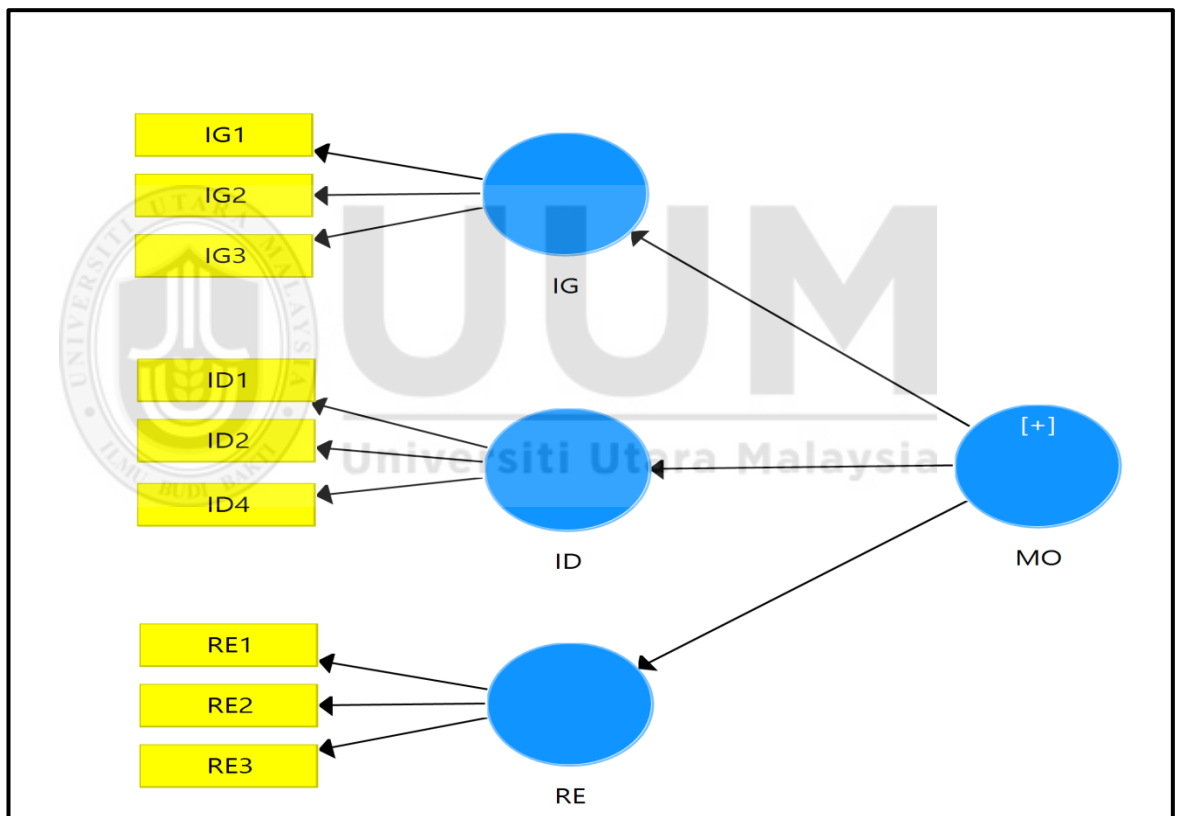


Figure 4.4
Second-order Measurement of Market Orientation (MO)

4.4.2.1 The Second –order Constructs Establishment

As discussed in the previous section, the first-order construct refers to the link between the indicators and its dimensions, while the second order construct refers to the link between the dimensions and the latent construct.

In this study, there are four second-order latent constructs namely, TQM, MO, IT capability and MFIs performance. It is essential to examine whether the first order constructs were qualified to be conceptually explained by the respective second-order construct before proceeding to assess the research model. Thus, the first-order constructs should be explained well by the hypothesized second-order construct and they should be distinct (Byrne, 2010).

For TQM construct, the seven first-order constructs namely leadership management, customer focus, strategic planning, training, continuous improvement, benchmarking and quality culture are explained well by TQM construct since R-square were ranged within 0.166 and 0.741 as shown in Table 4.12. Furthermore, Table 4.11 showed that these constructs were confirmed to be distinct using the criterion suggested by Fornell and Larcker (1981). Hence, it can be concluded that these constructs were conceptually explained by the second-order construct.

Table 4.12
T-value and Significance of the Second-order

Second-order Construct	First-order Construct	Path Coefficient	Standard Error	T-statistics	P-values	R-square
Total Quality Management	Benchmarking	0.627	0.063	9.986	0.000	0.393
	Customer Focus	0.691	0.059	11.617	0.000	0.477
	Continuous Improvement	0.738	0.057	13.036	0.000	0.545
	Leadership Management	0.787	0.052	15.005	0.000	0.620
	Quality Culture	0.538	0.068	7.958	0.000	0.290
	Strategic Planning	0.861	0.027	31.576	0.000	0.741
	Training	0.764	0.041	18.605	0.000	0.583
Market Orientation	Intelligence Dissemination	0.765	0.052	14.791	0.000	0.585
	Intelligence Generation	0.833	0.033	25.179	0.000	0.693
	Responsiveness	0.787	0.041	19.002	0.000	0.619
Information Technology capability	IT Object	0.882	0.020	43.219	0.000	0.778
	IT Knowledge	0.692	0.062	11.145	0.000	0.479
	IT Operation	0.822	0.030	27.550	0.000	0.676
MFIs Performance	Customer Perspective	0.707	0.063	11.218	0.000	0.499
	Financial Perspective	0.734	0.046	16.024	0.000	0.539
	Learning and Growth Perspective	0.755	0.051	14.899	0.000	0.571
	Internal Process Perspective	0.630	0.086	7.358	0.000	0.397
	Social Perspective	0.407	0.139	2.939	0.002	0.166

Similarly, MO construct was hypothesized to be measured through three first-order constructs namely, intelligence generation, intelligence dissemination, and responsiveness. These constructs were explained well by the construct as shown by the R-square values ranging between 0.585 and 0.693. Moreover, the results of the discriminant analysis illustrated in Table 5.11 confirmed that these constructs are correlated. Thus, MO as a second-order construct was explained by the three hypothesized first-order constructs.

Likewise, IT capability construct was hypothesized to be measured through three first-order constructs namely, IT knowledge, IT object, IT Operation. These constructs were explained well by the construct as shown by the R-square values

ranging between 0.479 and 0.778. The results of discriminant analysis also shown in Table 5.11 confirmed that these constructs are correlated. Consequently, MO as a second-order construct was explained by the three hypothesized first-order constructs.

Finally, the MFIs performance construct was hypothesized to be measured through five first-order constructs namely financial perspective, customer perspective, internal process perspective, learning and growth perspective, and social perspective. These constructs were explained well by the construct as shown by the values of the R-square that ranged between 0.166 and 0.571 respectively. In addition to that, the discriminant results in Table 4.11 showed that MFIs performance was confirmed as each one of these constructs were distinct. Therefore, the second-order nature of MFIs performance was met.

In conclusion, the measurement model of the present study was examined by several tests such as indicator reliability, internal consistency test, convergent validity and discriminant validity. The main purpose for conducting all these tests was to ensure that the measurement model was valid and reliable before proceeding further to test the hypotheses. The results of all the tests confirmed that the research model was valid and reliable.

4.4.3 Structural Model Evaluation

After evaluating and analysing the measurement model, the next step in the PLS path modelling analysis was to test the structural model (inner model). To do so, there are

several requirements, including (R^2) values, effect size (f^2) and the predictive relevance of the model recommended by Straub *et al.* (2004), Lewis *et al.* (2005), Henseler *et al.* (2009), Urbach and Ahlemann, 2010; Hair *et al.*, 2012 and Hair *et al.* (2014). In addition, the Goodness of Fit (GoF) proposed by Tenenhaus *et al.* (2005) was included in the structure model evaluation for diagnostic purpose, which is not a formal criterion, as suggested by Wetzels, Odekerken-Schroder and Oppen (2009). Finally, the bootstrapping was run to test the significance level of the hypothesized relationships in the study model.

4.4.3.1 R-square (R^2)

The R^2 criterion was considered to be an essential requirement for evaluating the structural model in PLS-SEM (Hair *et al.*, 2011; Hair *et al.*, 2012). The R-square value reflects the amount of variance in the dependent variable in question that can be explained by one or more predictor variables (Hair *et al.*, 2010). According to Hair *et al.* (2014), there is no rule of thumb for the acceptable level value of R^2 as it depends mainly on the research context and model complexity, so that there are many criteria suggested to be used when evaluating the R^2 values. For example, Falk and Miller (1992) suggested a cut-off point of 0.10 value for R^2 as a minimum acceptable level. Meanwhile, Cohen (1988) recommended that R-square values of 0.26, 0.13 and 0.02 for the endogenous constructs can be interpreted as substantial, moderate, and weak respectively. While Chin (1998a) stated that the R^2 values equal or more than 0.67 represents substantial, 0.33 represents moderate, and 0.19 represents weak. In general, the R^2 values of 0.75, 0.50 and 0.025 can be interpreted as substantial, moderate, and weak respectively (Hair *et al.*, 2014).

Based on the R-square values of the two endogenous latent variables (i.e., MFIs performance and IT capability) presented in Figure 4.5, it was obvious that the research model explains 36% of the total variance in MFIs performance and 39% of the total variance in IT capability. This indicates that the three sets of exogenous latent variables (i.e., TQM, MO and IT capability) jointly explain 36% of the variance of MFIs performance. In addition, the two sets of exogenous latent variables (i.e., TQM and MO) jointly explain 39% of the variance in IT capability. Therefore, in this study the two endogenous latent variables showed acceptable levels of R-square values based on the criterion of Falk and Miller (1992). Moreover, the R-square values of the two endogenous latent variables were also in the acceptable levels in the substantial, moderate and weak range based on the criteria of Cohen (1988), Chin (1998a) and Hair *et al.* (2014) respectively.



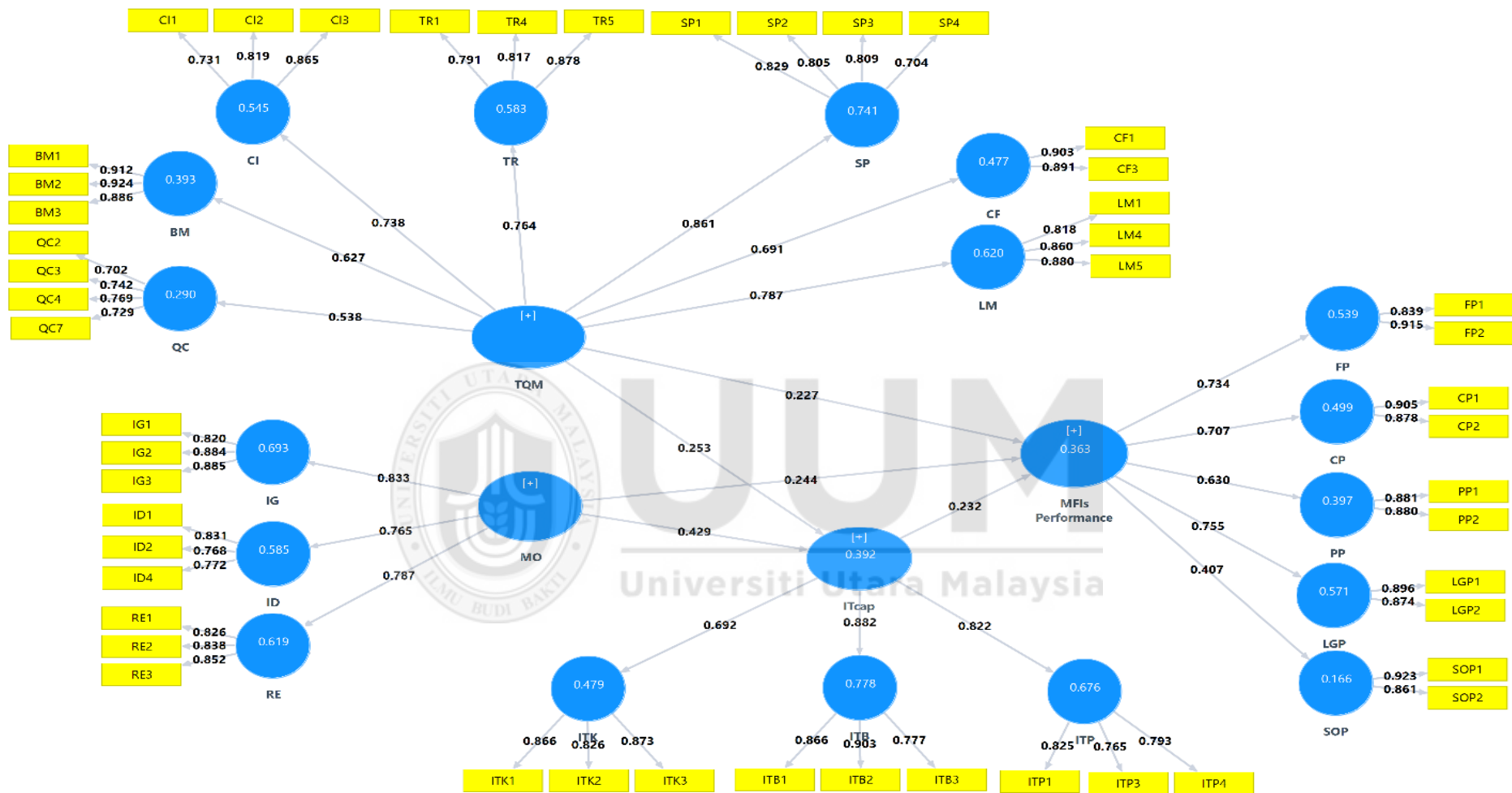


Figure 4.5
Items Loading, Path Coefficient and R^2 Value

4.4.3.2 Effect Size (f^2)

It is advantageous to dictate the effect sizes of particular latent variables' influence on the dependent variables by utilizing the effect size (f^2) analysis which is complementary to R^2 (Chin, 2010). The effect size (f^2) can be determined using the formula suggested by Cohen (1988) as follows:

$$\text{Effect size } (f^2) = \frac{R_{\text{included}}^2 - R_{\text{excluded}}^2}{1 - R_{\text{included}}^2} \quad (1)$$

Where R^2 included is the R-square obtained on the endogenous latent variable when the predictor exogenous latent variable is used in the structural model. While R^2 excluded is the R-square obtained on the endogenous latent variable when the predictor exogenous latent variable is not used in the structural model. According to the recommendation of Cohen (1988), the f^2 values of 0.02, 0.15 and 0.35 represents small, medium and large effects in the structural model respectively.

As illustrated in Table 4.13 below, the effect sizes for the total quality management, market orientation and IT capability were 0.044, 0.063 and 0.051 respectively. Therefore, the effect sizes of all these three exogenous latent variables on MFIs Performance can be described as small based on the guideline of Cohen (1988).

Table 4.13

The Effect Size of the MFIs Performance and the Interaction Term

Construct	R ² included	R ² excluded	R ² included - R ² excluded	1- R ² included	Effect Size	Result
Total Quality Management	0.363	0.334	0.028	0.637	0.044	Small
Market Orientation	0.363	0.323	0.040	0.637	0.063	Small
IT capability	0.363	0.330	0.032	0.637	0.051	Small

Moreover, Table 4.14 also showed the effect size values for total quality management and market orientation as 0.058 and 0.167 respectively. In a similar way, the results indicated that the effect sizes of these two exogenous latent variables on Information Technology Capability can be described as small and medium respectively based on the guideline of Cohen (1988).

Table 4.14

The Effect Size of the IT Capability and the Interaction Term

Construct	R ² included	R ² excluded	R ² included - R ² excluded	1- R ² included	Effect Size	Result
Total Quality Management	0.392	0.357	0.035	0.608	0.058	Small
Market Orientation	0.392	0.290	0.102	0.608	0.167	Medium

4.4.3.3 Predictive Relevance of the Model (Q²)

In addition to assessing the R² as a criterion to predict the model accuracy, the predictive relevance (Q²) should be examined by researchers (Hair *et al.*, 2014). Blindfolding procedure is designed to remove certain amounts of the data and consider them as missing values to estimate the model parameters. Then, the estimated parameters are utilized to reconstruct the raw data that are supposed missing previously. However, it is stated that the blindfolding procedure was only applied to endogenous latent variables that have a reflective measurement model

specification (Henseler *et al.*, 2009; Hair *et al.*, 2011; Hair *et al.*, 2014). In this study, therefore, a blindfolding procedure was employed to the endogenous latent variables since all endogenous latent variables of the study were reflective in nature.

Specifically, there are two different measures of the predictive relevance (Q^2) namely cross validated redundancy and cross validated communality (Hair *et al.*, 2014). However, it is recommended to utilize the cross-validated redundancy because it includes both structural model and the measurement models for data prediction, which unlike cross validated communality that includes only the measurement model, which fits the PLS-SEM approach perfectly (Hair *et al.*, 2011; Hair *et al.*, 2014). According to Fornell and Cha (1994), Hair *et al.* (2011) and Hair *et al.* (2014), a research model with the cross redundancy value higher than zero is interpreted to have predictive relevance, otherwise, the research model the predictive relevance of the model cannot be confirmed. As shown in Table 4.15, the cross-validated redundancy values of MFIs Performance and IT capability were 0.105 and 0.157 respectively. Therefore, all the cross redundancy values of the two endogenous variables of the study were more than zero, which suggested an adequate predictive relevance of the study model.

Table 4.15
The Predictive Relevance of the Endogenous Construct

Endogenous Construct	R-square	Cross validated Redundancy	Cross validated Commuality
Microfinance Institutions Performance	0.363	0.105	0.064
Information Technology Capability	0.392	0.157	0.104

4.4.3.4 Goodness of Fit (GoF) of the Model

PLS Structural Equation Modeling has only a single measure goodness of fit (i.e., the GoF index) which has been proposed by Tenenhaus *et al.* (2005). A global fit measure (GoF) for PLS path modeling can be defined as the geometric mean of the average communality and average R^2 for the endogenous constructs. The main purpose of the goodness of fit measure is to explain the variance extracted by both the measurement model and structure model (Chin, 2010). The GoF can be calculated by the following formula

$$Gof = \sqrt{(\overline{R^2} \times \overline{AVE})} \quad (2)$$

In this study, the GoF value of the model was 0.521 which had been obtained as follows:

$$Gof = \sqrt{(0.377 \times 0.719)} = 0.521 \quad (3)$$

To compare the GoF value of this study with the threshold values of GoF proposed by Wetzels *et al.* (2009) (0.1 represents small, 0.25 represents medium, 0.36

represents large), it can be concluded that the model's GoF was large suggesting an adequate of the global PLS model validity.

4.4.3.5 Path Coefficients Testing

After the measurement model and structural model were confirmed to be reliable and valid, the next step in PLS-SEM path modeling was to test the hypothesized relationships. To do so, this study utilized the PLS algorithm and the standard bootstrapping procedure with a number of 5000 bootstrap samples and 125 cases to examine the path coefficients significance (Hair *et al.*, 2014; Hair *et al.*, 2011; Hair *et al.*, 2012; Henseler *et al.*, 2009). Table 4.16 and Figure 4.6 show the path coefficient values and the bootstrapping results explaining the hypothesized relationships among the study variables.

Based on the results presented in Figure 4.6 and Table 4.16, it was obvious that the proposed relationship between TQM and MFIs performance was positively significant ($\beta = 0.227$, $t = 1.932$, $p < 0.05$), hence the hypothesis (H1) was supported. In respect to the dimensions of TQM, the obtained results were mixed. Training ($\beta = 0.285$, $t = 2.842$, $p < 0.01$), continuous improvement ($\beta = 0.210$, $t = 1.950$, $p < 0.05$) and quality culture ($\beta = 0.327$, $t = 3.070$, $p < 0.01$) had a positive and significant effect on Microfinance Institutions Performance supporting H1d, H1e and H1g respectively. On the contrary, leadership management ($\beta = -0.046$, $t = 0.442$, $p > 0.1$), strategic planning ($\beta = 0.064$, $t = 0.445$, $p > 0.1$) and benchmarking ($\beta = 0.079$, $t = 0.834$, $p > 0.1$) had no significant effect on MFIs performance. While, customer focus ($\beta = -0.151$, $t = 1.536$, $p < 0.1$) had a significant negative effect on MFIs

performance. Therefore, the hypotheses proposed in H1a, H1c, H1f and H1b were not supported.

Table 4.16
The Results of Hypotheses Testing

No.	Hypo.	Hypothesis	Path Coefficient	T- value	P- value	Decision
1	H1	TQM -> MFIs Performance	0.227**	1.932	0.027	Supported
2	H1a	LM -> MFIs Performance	-0.046	0.442	0.329	Not supported
3	H1b	CF -> MFIs Performance	-0.151*	1.536	0.062	Not supported
4	H1c	SP -> MFIs Performance	0.064	0.445	0.328	Not supported
5	H1d	TR -> MFIs Performance	0.285***	2.842	0.002	Supported
6	H1e	CI -> MFIs Performance	0.210**	1.950	0.026	Supported
7	H1f	BM -> MFIs Performance	0.079	0.834	0.202	Not supported
8	H1g	QC -> MFIs Performance	0.327***	3.070	0.001	Supported
9	H2	MO -> MFIs Performance	0.244**	2.133	0.017	Supported
10	H2a	IG -> MFIs Performance	0.015	0.177	0.430	Not supported
11	H2b	ID -> MFIs Performance	0.340***	3.596	0.000	Supported
12	H2c	RE -> MFIs Performance	0.331***	4.465	0.000	Supported
13	H3	IT cap -> MFIs Performance	0.232**	1.974	0.024	Supported
14	H4	TQM -> IT capability	0.253**	2.099	0.018	Supported
15	H5	MO -> IT capability	0.429***	3.890	0.000	Supported

Note: ***: $p < 0.01$; **: $p < 0.05$; *: $p < 0.1$.

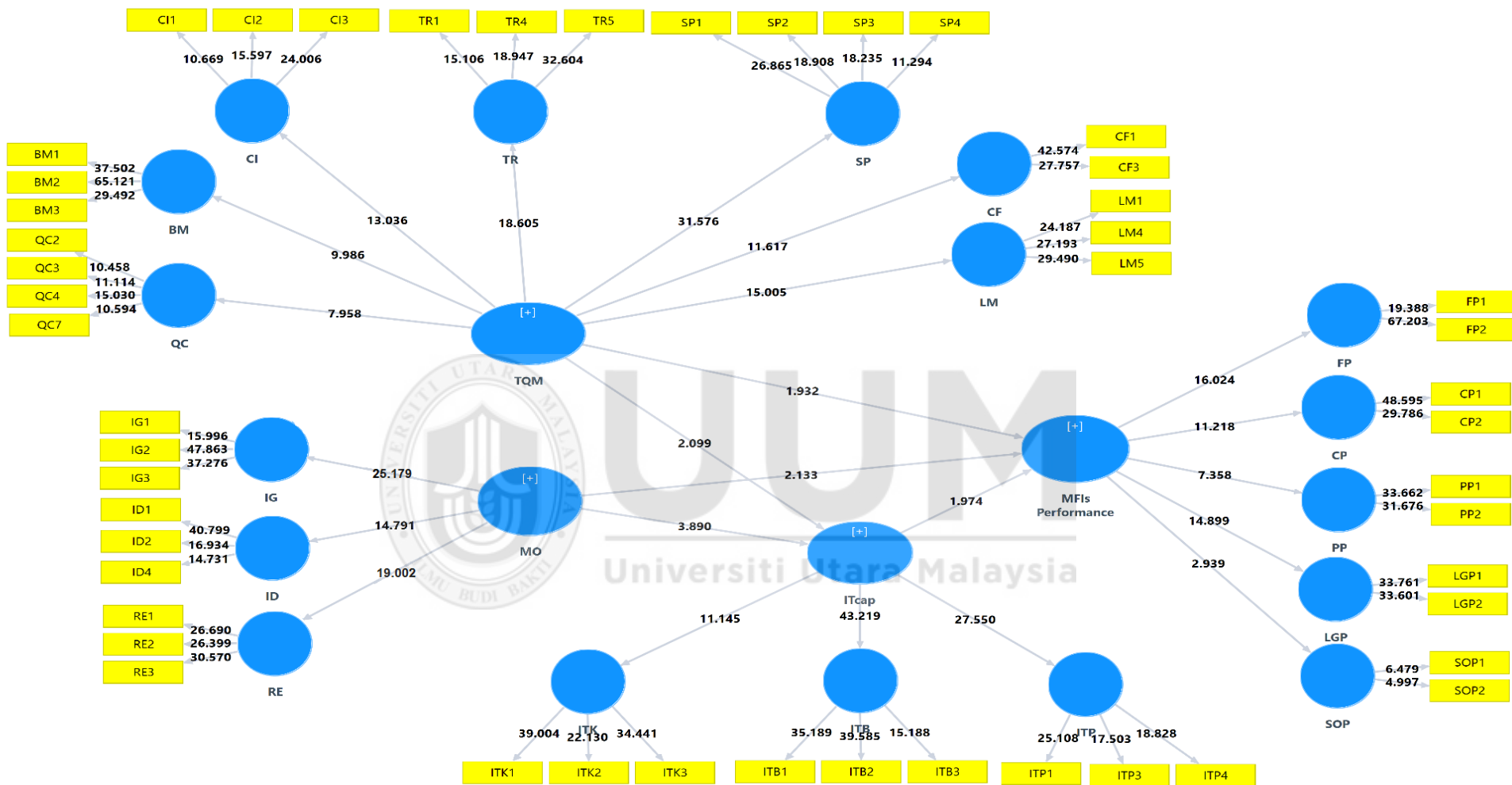


Figure 4.6
PLS Bootstrapping results of the Model

In addition to that, the effect of MO on the MFIs performance was tested as a single dimension and multidimensional. More precisely, MO ($\beta = 0.244$, $t = 2.133$, $p < 0.05$) had a positive and significant effect on MFIs performance which supported H2. In regard to the dimensions of MO, intelligence generation ($\beta = 0.015$, $t = 0.177$, $p > 0.1$) was not significantly associated with MFIs performance, hence, H2a was not supported. On the contrary, intelligence dissemination ($\beta = 0.340$, $t = 3.596$, $p < 0.01$) and responsiveness ($\beta = 0.331$, $t = 4.465$, $p < 0.01$) had strongly positive and significant effect on MFIs performance supporting H2b and H2c respectively.

On the other hand, the effect of IT capability on MFIs performance was positively significant ($\beta = 0.232$, $t = 1.974$, $p < 0.05$) which supported H3. Moreover, the effect of TQM ($\beta = 0.253$, $t = 2.099$, $p < 0.05$) had a positive and significant effect on IT capability which supported H4. Finally, MO ($\beta = 0.429$, $t = 3.890$, $p < 0.01$) had strongly positive and significant effect on IT Capability. Hence, the proposed hypothesis H5 was supported.

In conclusion, the bootstrapping results confirmed that the effect of all the three latent variables (i.e., single constructs) namely TQM, MO and IT capability on MFIs performance were found to be statistically significant at the 0.05 significance level. Furthermore, the results showed that the effect of all the two latent variables (i.e., single constructs) namely, TQM and MO on IT capability were also statistically significant at the 0.05 and 0.01 significance levels respectively. In addition to that, this study tested the dimensions of the latent variables such as TQM and MO with MFIs performance in order to obtain a deeper understanding of the issues tackled in this study. Among the dimensions of TQM, only three dimensions, namely trainings,

continuous improvement and quality culture were found to be positive and significantly associated with MFIs performance at the 0.01, 0.05 and 0.01 significance levels respectively. Further, the other four dimensions, namely leadership management, strategic planning and benchmarking were not significant, while customer focus was negatively significant. In regard to the dimensions of MO, two dimensions of MO namely intelligence dissemination and responsiveness were positively and significantly confirmed at 0.001 significance level. The third one, intelligence generation, was found to be not significant at all.

4.4.3.6 The Mediating Relationships Testing

Mediation testing was employed to find out whether there is a mediating effect (or indirect effect) of an independent variable X on a dependent variable Y through a mediator variable M as shown in Figure 4.7 presented by Hayes and Preacher (2014). Where “a” is the path from the independent variable X to the mediator M, “b” is the path from the mediator M to the dependent variable Y, the “c” is the path from the independent variable X to the dependent variable Y in the absence of the mediator M and “c’” the path from the independent variable X to the dependent variable Y in the existence if the mediator M.

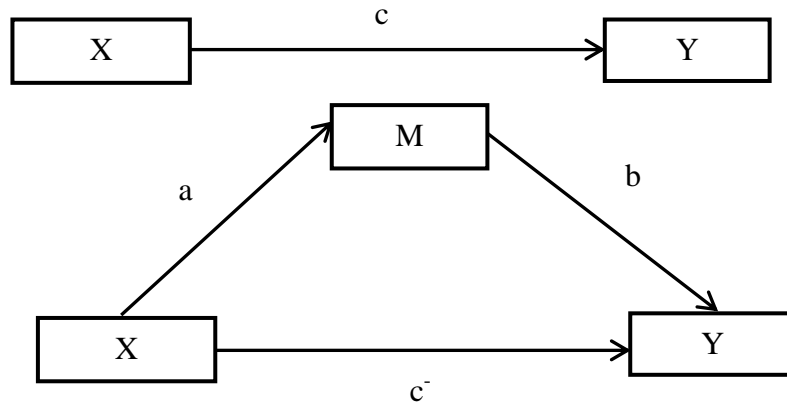


Figure 4.7
Simple Mediation Model
 Source: Hayes and Preacher (2014)

According to Preacher and Hayes (2008), there are many methods used for testing mediation in multivariate analysis consisting of simple methods such as the causal step method (Baron & Kenny, 1986) or the Sobel test (Sobel, 1982) and more recent methods which involves fewer unrealistic statistical assumptions, such as the product of coefficients method (MacKinnon, Lockwood, & Williams, 2004); and re-sampling methods such as bootstrapping method (MacKinnon *et al.*, 2004). However, the causal step approach of Baron and Kenny neither quantifies the size of the indirect effect, nor requires any inferential test about it (Hayes, 2013), while Sobel does not hold for the indirect effect because the product of the indirect effect is not normally distributed and the test requires unstandardized path coefficients and lacks the statistical power particularly when applied to small sample size (Hair *et al.*, 2014). Furthermore, the product of coefficients method also relies on the assumption of normally distributed sampling of the indirect effect and the standard error formula where there are several formulas which there is no clear criteria to prefer one on the other in a given situation (Hayes *et al.*, 2011).

Thus, this study used the bootstrapping method in investigating the mediating effects because it is more powerful and accurate than other methods (Zhao, Lynch, & Chen; 2010; Hayes *et al.*, 2011; Hayes, 2013; Hair *et al.*, 2014). Specifically, the bootstrapping method with 5000 samples and 95% confidence intervals (CI) were utilized in estimating the indirect effects under the study following the Preachers and Hayes (2008) strategy as recommended by Zhao *et al.* (2010), Hayes *et al.* (2011), Hayes (2013) and Hair *et al.* (2014). The outputs of PLS provide the CI values of the indirect effect $a*b$, and when a 95% CI excludes zero, there is evidence of an indirect effect linking X and Y via mediator with 95% confidence and then the mediation is established. According to Preachers and Hayes (2008) strategy, the effect of the independent variable X on the dependent variable in the absence of the mediator M “c” path is not a necessary requirement for mediation. The mediation strength should be tested by the significance of the indirect effect paths $a*b$, and not by the insignificant direct effect of path c (Zhao *et al.*, 2010; Hayes, 2013).

In addition, the criterion suggested by Zhao *et al.* (2010) is employed to determine the type of mediation whether the mediation is full or partial. According to Zhao *et al.* (2010), the indirect effect “ $a*b$ ” must be significant as the necessary condition for mediation and when the path c is not significant, there is a full mediation. However, when the entire path a, b and c have similar signs, there is a complementary partial mediation and when the path a, b and c have different signs, there is a competitive partial mediation. Figure 4.8: shows the criteria of identifying mediation type.

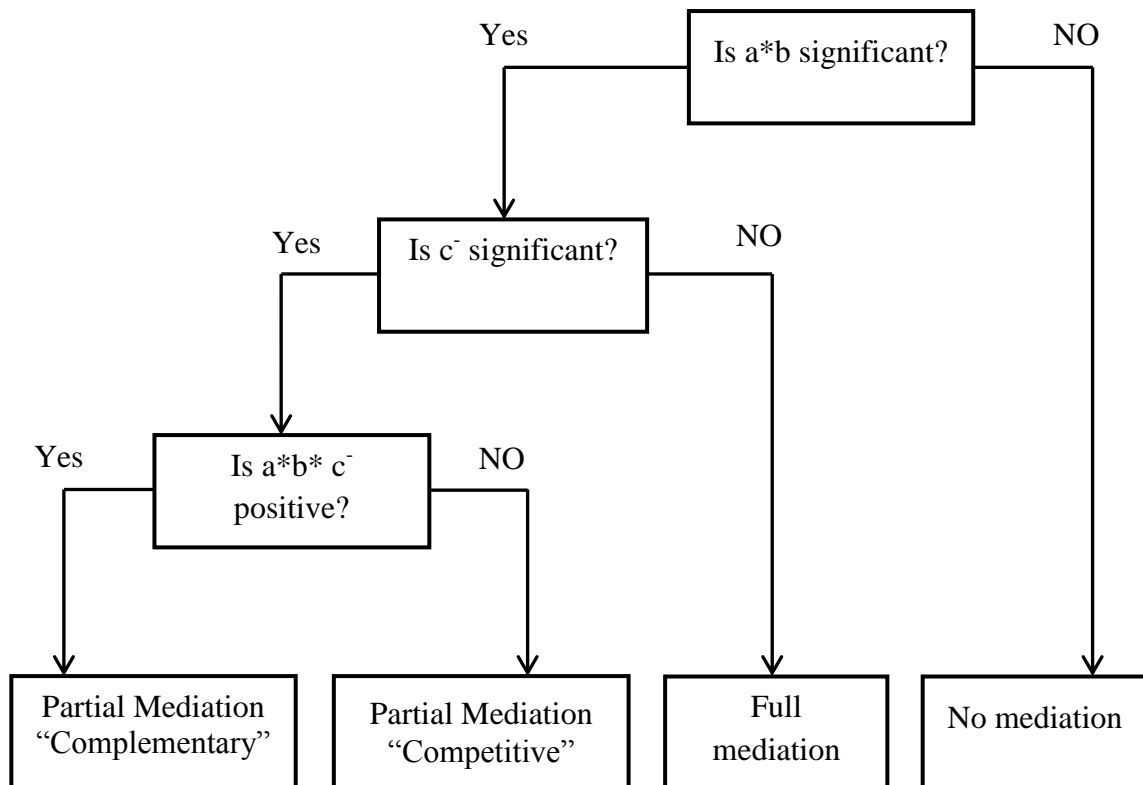


Figure 4.8
 Criteria of Identifying Mediation Type
 Source: Zhao *et al.* (2010)

Based on the study model, the mediating effect of IT capability was proposed as mediator on the relationship between both TQM and MO and MFIs performance. Specifically, the mediation tests were conducted to find whether IT capability mediates the relationship between TQM (LM, CF, SP, TR, CI, BM and QC) and MO (IG, ID and RE) on the performance of MFIs. The results of mediation tests are presented in the following sections.

First, the results of bootstrapping regarding the mediating effect of IT capability on the link between total quality management (TQM) and MFIs performance are presented in Table 4.17. These results show that the confidence interval of the indirect effect of TQM on the performance of MFIs ($\beta = 0.059$, 95% CI= 0.010 to

0.131) does not include zero indicating that IT capability significantly mediates the relationship between TQM and MFIs performance. The results also show that the direct effect c' was significant and the signs of the paths a, b and c' were positive which indicate that IT capability is a partial mediator (complementary) on the relationship between TQM and MFIs performance. Thus, it can be concluded that hypothesis 6 is supported.

Table 4.17:
The Results of the Mediating Role of IT Capability between TQM and Performance

H no.	Variables	A	B	c'	Point estimate	Indirect Effect 95% CI		Decision
						Lower	Upper	
H6	Total Quality Management	0.253**	0.232**	0.227**	0.059	0.010	0.131	Partial Mediation "Complementary"
H6a	Leadership Management	0.194**	0.283***	-0.117	0.055	0.011	0.105	Full mediation
H6b	Customer Focus	-0.152*	0.283***	-0.088	-0.043	-0.081	-0.002	Full Mediation
H6c	Strategic Planning	0.150	0.283***	0.024	0.042	-0.004	0.104	No Mediation
H6d	Training	0.372***	0.283***	0.168	0.105	0.033	0.175	Full mediation
H6e	Continuous Improvement	0.050	0.283***	0.206**	0.014	-0.017	0.056	No mediation
H6f	Benchmarking	-0.059	0.283***	0.096	-0.017	-0.050	0.021	No mediation
H6g	Quality Culture	0.143*	0.283***	0.275***	0.040	0.005	0.085	Partial Mediation "Complementary"

Note: ***: $p < 0.01$; **: $p < 0.05$; *: $p < 0.1$. Lower and upper levels of 95% confidence interval.

The results also reveal that the confidence interval of the indirect effects of leadership management ($\beta = 0.055$, 95% CI= 0.011 to 0.105), customer focus ($\beta = -0.043$, 95% CI= -0.081 to -0.002) and training ($\beta = 0.105$, 95% CI= 0.033 to 0.175) on the performance of MFIs do not include zero, indicating that the IT capability is a significant mediator on the relationship between these variables and MFIs performance. The direct effect c' of the three variables were not significant, indicating that IT capability is a full mediator between leadership management,

customer focus and training and the performance of MFIs. Thus, hypotheses H6a, H6b and H6d are also supported.

However, the results show that the confidence interval of the indirect effect of quality culture on the MFIs performance ($\beta = 0.040$, 95% CI= 0.005 to 0.085) does not include zero, the direct path c' was significant and the signs of a, b and c' were positive indicating that IT capability has a partial mediation (complementary) effect on the relationship between quality culture and MFIs performance. Thus, hypothesis H6g is also supported. On the other hand, the results reveal that the confidence interval of the indirect effects of strategic planning ($\beta = 0.042$, 95% CI= -0.004 to 0.104), continuous improvement ($\beta = 0.014$, 95% CI= -0.017 to 0.056) and ($\beta = -0.017$, 95% CI= -0.050 to 0.021) benchmarking on the performance of MFIs include zero indicating that IT capability is not confirmed to be a mediator on the relationship between these variables and MFIs performance. Thus, it can be concluded that hypotheses H6c, H6e and H6f are not supported.

Second, the results of bootstrapping regarding the mediating effect of IT capability on the between market orientation (MO) and MFIs performance are presented in Table 5.18. Similarly, the results show that the confidence interval of the MO indirect effect on the MFIs performance ($\beta = 0.100$, 95% CI= 0.033 to 0.177) does not include zero indicating that IT capability significantly mediates the relationship between MO and MFIs performance. The results also show that the direct effect c' was significant and the signs of the paths a, b and c' were positive which indicates that IT capability is a partial mediator (complementary) on the relationship between MO and MFIs performance supporting hypothesis 7.

Table 4.18

The Results of the Mediating Role of IT Capability between MO and Performance

H no.	Variables	a	b	c'	Point estimate	Indirect effect 95% CI		Decision
						Lower	Upper	
H7	Market Orientation	0.429***	0.232**	0.244**	0.100	0.033	0.177	Partial Mediation "Complementary"
H7a	Intelligence Generation	0.307***	0.295***	-0.084	0.091	0.043	0.139	Full Mediation
H7b	Intelligence Dissemination	0.170**	0.295***	0.289***	0.050	0.013	0.096	Partial Mediation "Complementary"
H7c	Responsiveness	0.280***	0.295***	0.251***	0.083	0.032	0.151	Partial Mediation "Complementary"

Note: ***: $p < 0.01$; **: $p < 0.05$; *: $p < 0.1$. Lower and upper levels of 95% confidence interval.

Furthermore, the results show that the confidence interval of the intelligence generation indirect on the MFIs performance ($\beta = 0.091$, 95% CI= 0.043 to 0.139) does not include zero confirming that IT capability is a significant mediator on the mentioned relationship. The direct effect c' was not significant, meaning that IT capability is a full mediator on the relationship between intelligence generation and MFIs performance. Thus, it can be concluded that hypothesis H7a is supported.

The results in Table 4.18 also reveal that the confidence interval of the intelligence dissemination indirect effect ($\beta = 0.050$, 95% CI= 0.013 to 0.096) and the confidence interval of responsiveness ($\beta = 0.083$, 95% CI= 0.032 to 0.151) on the performance of MFIs do not include zero, indicating that IT capability mediates the relationship between these variables and MFIs performance. The direct path c' of these variables was significant meaning that IT capability is a partial mediator (complementary) on these relationships. Thus, hypotheses H7b and H7c are supported.

In conclusion, this study used the bootstrapping method with minimum of 5000 bootstrap samples and 95% confidence interval values in testing the mediating role of IT capability on the link between both TQM and MO and MFIs performance. The results confirmed that IT capability was a significant mediator on the majority of hypothesized relationships.

5.4.3.7 Additional Analysis of the Mediating Effect of MO on the Link between TQM and MFIs Performance

As shown earlier in Table 4.16, the results showed that not all of the total quality management (TQM) practices were confirmed to have direct effect on the MFIs performance. Furthermore, the mediating effect of IT capability results presented in Table 5.17 also did not show that IT capability mediates the relationship between all the practices of TQM and MFIs performance. Thus, this study carried out additional analysis to get new insights to investigate whether market orientation (MO) mediates significantly the relationship between TQM (as a composite variable and multidimensional variable) and the MFIs performance. Literature review supports this analysis as both TQM and MO complement each other to meet the customer needs and satisfaction (Wang *et al.*, 2012). Furthermore, the mediating effect of MO on the link between TQM and organization performance is limited, particularly in the context of microfinance sector. Thus, the research framework of the study provides a good opportunity to test the following eight additional hypotheses:

Hypothesis 28 (H8): Market Orientation mediates significantly the relationship between Total Quality Management and the MFIs performance.

Hypothesis 29 (H8a): Market Orientation mediates significantly the relationship between Leadership management and the MFIs performance

Hypothesis 30 (H8b): Market Orientation mediates significantly the relationship between Customer focus and the MFIs performance.

Hypothesis 31 (H8c): Market Orientation mediates significantly the relationship between Strategic planning and the MFIs performance

Hypothesis 32 (H8d): Market Orientation mediates significantly the relationship between Training and the MFIs performance.

Hypothesis 33 (H8e): Market Orientation mediates significantly the relationship between Continuous Improvement and the MFIs performance.

Hypothesis 34 (H8f): Market Orientation mediates significantly the relationship between Benchmarking and the MFIs performance.

Hypothesis 35 (H8g): Market Orientation mediates significantly the relationship between Quality culture and the MFIs performance.

Table 4.19 shows the results of bootstrapping regarding the mediating effect of market orientation (MO) on the relationship between total quality management (TQM) and MFIs performance. The results show that the confidence interval of the indirect of TQM on the performance of MFIs ($\beta = 0.229$, 95% CI= 0.097 to 0.350) does not zero indicating that MO significantly mediates the relationship between TQM and the MFIs performance. The results also show that the direct effect c' was

significant and the signs of the paths a, b and c- were positive which indicate that MO is a partial mediator (complementary) on the relationship between TQM and the MFIs performance supporting the additional hypothesis 8.

Table 4.19:
The Results of the Mediating Role of MO between TQM and Performance

H No.	Variables	A	B	c ⁻	Point estimate	Indirect Effect 95% CI		Decision
						Lower	Upper	
H8	Total Quality Management	0.666***	0.344***	0.286***	0.229	0.097	0.350	Partial Mediation "Complementary"
H8a	Leadership Management	-0.105	0.291***	-0.013	-0.031	-0.083	0.023	No Mediation
H8b	Customer Focus	0.057	0.291***	-0.159	0.016	-0.024	0.067	No Mediation
H8c	Strategic Planning	0.215**	0.291***	-0.004	0.063	0.008	0.133	Full mediation
H8d	Training	0.253***	0.291***	0.199**	0.074	0.007	0.143	Partial Mediation "Complementary"
H8e	Continuous Improvement	0.170**	0.291***	0.175*	0.049	0.003	0.114	Partial Mediation "Complementary"
H8f	Benchmarking	0.183**	0.291***	0.029	0.053	0.002	0.114	Full mediation
H8g	Quality Culture	0.158*	0.291***	0.267***	0.046	-0.006	0.097	No Mediation

Note: ***: p<0.01; **: p<0.05; *: p<0.1. Lower and upper levels of 95% confidence interval.

In addition, the results show that the confidence interval of the indirect of strategic planning ($\beta = 0.063$, 95% CI= 0.008 to 0.133) and benchmarking ($\beta = 0.053$, 95% CI= 0.002 to 0.114) does not include zero meaning that MO significantly mediates the relationship between both strategic planning and benchmarking and the MFIs performance. The direct effect of both variables c⁻ was not significant indicating that MO is a full mediator on the mentioned relationships. Thus, hypothesis 8c and hypothesis 8f are supported.

The results in Table 4.19 also shows that the indirect effect of training ($\beta = 0.074$, 95% CI= 0.007 to 0.143) and continuous improvement ($\beta = 0.049$, 95% CI= 0.003 to 0.114) does not include zero which proves that MO significantly mediates the relationship between both training and continuous improvement and the MFIs performance. The direct effect of both variables c' was significant and the signs of the path a, b and c' are positive, indicating that MO is a partial (complementary) mediator of the mentioned relationships. Thus, hypothesis 8d and hypothesis 8d are supported.

On the contrary, the results in Table 5.19 show that the indirect effect of leadership management ($\beta = -0.031$, 95% CI= -0.083 to 0.023), customer focus ($\beta = 0.016$, 95% CI= -0.024 to 0.067) and quality culture ($\beta = 0.046$, 95% CI= -0.006 to 0.097) include zero in the confidence intervals of these variables. This indicates that MO does play any mediating role on the relationships between these variables and the MFIs performance. Thus, hypothesis 8a, hypothesis 8b and hypothesis 8g are not supported. The next section summarizes the findings of the study.

4.5 Summary of the Findings

Having presented all the findings, including the direct effects and mediating effects in the previous section, Table 4.20 shows a summary of the results related to all hypotheses tested.

Table 4.20
Summary of the Results

Variables	Direct effect with MFIs performance		Direct effect with IT capability		Mediating effect via IT capability		Mediating effect via MO	
	Hyp. no.	Result	Hyp. no.	Result	Hyp. no.	Result	Hyp. no.	Result
Total Quality Management	H1	√	H4	√	H6	√	H8	√
Leadership Management	H1a	X			H6a	√	H8a	X
Customer Focus	H1b	X			H6b	√	H8b	X
Strategic Planning	H1c	X			H6c	X	H8c	√
Training	H1d	√			H6d	√	H8d	√
Continuous Improvement	H1e	√			H6e	X	H8e	√
Benchmarking	H1f	X			H6f	√	H8f	√
Quality Culture	H1g	√			H6g	√	H8g	X
Market Orientation	H2	√	H5	√	H7	√		
Intelligence Generation	H2a	X			H7a	√		
Intelligence Dissemination	H2b	√			H7b	√		
Responsiveness	H2c	√			H7c	√		
IT capability	H3	√						

Note: Total hypotheses= 35, Supported= 25, Not supported=10.

4.6 Summary

In this chapter, the results of the study were presented. At the beginning, the survey response, the data screening and preliminary analysis were established using SPSS. Then, the results of the measurement model, structural model, direct hypotheses testing and mediating relationships testing were obtained using PLS path modelling. Finally, the summary of findings was presented which showed that while the results of the study supported some the hypotheses, they did not support other ones. More

specifically, ten out of fifteen direct hypotheses were confirmed to be significant, while five hypotheses were not supported. Furthermore, fifteen out of twenty mediating relationships hypotheses were supported while the other five were not supported.



CHAPTER FIVE

DISCUSSION AND CONCLUSION

5.1 Introduction

This chapter begins with the summary of the study, highlighting the research issues, the study motivation, the research design and the statistical analysis technique utilized in the study. It also discusses the findings and elaborates the contributions made by the study. The last section presents the limitations of the study and explains how these limitations provide the opportunities for future research.

As mentioned in chapter one, the motivation of this study came from the practical issues related to the performance of the microfinance institutions (MFIs), in the context of the least developed countries, particularly in Yemen. This leads to the theoretical gaps found in the pertinent literature in connection with the MFIs performance, in specific. The significant role of microfinance, as an effective tool to alleviate poverty and to develop the economy of a country, is another motivator. The outcomes of the study have provided a roadmap and the milestones for microfinance stakeholders through identifying the most significant drivers of the MFIs performance.

Based on the intensive literature review, this study has developed a theoretical model that produces testable relationships among the constructs of the study for the microfinance sector. These constructs include the total quality management (TQM), market orientation (MO), information technology (IT) capability and the MFIs

performance. The theoretical model verifies the effect of TQM practices and MO variables on the MFIs performance, and confirms on the mediating effect of IT capability. The examination of these relationships, within the structural model of the study, is grounded and underpinned by the resource-based view (RBV) theory. It is supported by other two theories, namely the dynamic capabilities theory and the complementarity theory.

Overall, this study, in the opinion of the researcher, had successfully provided the empirical evidence concerning the key drivers of the MFIs performance, answering the following research questions; (1) what is the effect of TQM on the MFIs performance?, (2) what is the effect of MO on the MFIs performance?, (3) what is the effect of IT capability on the MFIs performance?, (4) what is the effect of TQM on IT capability?, (5) what is the effect of MO on IT capability?, (6) does IT capability mediate the relationship between TQM and the MFIs performance and (7) does IT capability mediate the relationship between MO and the MFIs performance?

As expected, the data collected from the MFIs needs to be generalized. The generalization is based on the perceptions of branch managers, the source of the information for testing the hypotheses, which are postulated based on the problem statement of the study. With 75% response rate, the researcher conducted survey response analysis, data screening and preliminary analysis, including missing data, non-response bias, descriptive data, outliers, and the normality, linearity and multicollinearity assumptions utilizing Statistical Package for Social Science (SPSS). The partial least square (PLS) was used in assessing and determining the quality of the model and the structural model.

5.2 Discussions

The analysis and testing of data had been reported in the previous section and this section offers further discussions on the findings. It was structured basically to discuss the questions stated previously, hence, accomplishing the objectives of the study while offering some generalization.

5.2.1 Total Quality Management and Microfinance Institutions Performance

As known, the first objective of the study is to examine the effect of TQM practices on the MFIs performance. Eight hypotheses testing were conducted and concluded as presented in the previous section. Testing for the composite variable, it was found that collective all variables form a strong indicator that the TQM has a significant influence on the MFIs performance ($\beta = 0.227$, $t = 1.932$, $p < 0.05$).

This finding was supported by Karia and Asaari (2006) and Prajogo and Hong (2008) who emphasize that TQM practices should be treated and implemented collectively as they are dependent on each other and its implementation should be considered as a holistic approach, not individually. The change in TQM results in %22.7 improvement in MFIs performance. Thus, if the seven practices to be considered by the MFIs, then all seven practices must be implemented collectively in explaining the MFIs performance. In fact, the positive and significant effect of TQM practices, as a composite variable, on the MFIs performance is in line with the prior research works (e.g. Jaafreh & Al-abadallat, 2012; Wang *et al.*, 2012; Munizu, 2013;

Ul Hassan *et al.*, 2013; Jiménez-Jiménez *et al.*, 2015, Homaid *et al.*, 2015; Al-Dhaafri *et al.*, 2016).

Testing the TQM as a multidimensional factor, it was found that only three out of seven practices of the TQM are significantly and positively affecting the MFIs performance. The hypotheses testing fail to prove all the hypothesized practices are the significant and positive contributors to the MFIs performance. This indicates that not all the TQM practices, as found in business organizations, can be claimed to affect the MFIs performance, but rather they form a composite factor that affects significantly the MFIs performance.

Besides validating the postulated hypothesis, this result offers an answer to the first research question of the study. It also provides support for the premise of RBV theory by confirming the significant effect of TQM as an organization resource on the MFIs performance. To conclude, this result suggests that the MFIs, in the context of Yemen, are in need to implement TQM as a package of complementary practices and to focus more on the three significant practices of the TQM to examine, deal, improve and/or evolve the performance of the institution. Discussion for each TQM practices affecting the MFIs performance directly is as follows;

5.2.1.1 Leadership Management and MFIs Performance

Leadership management is one of the TQM practices that was not found to be the significant practices influencing the MFIs performance ($\beta = -0.046$, $t = 0.442$, $p > 0.1$). What actually happens is that, from the data collected, there is not enough evidence

to reject the null hypothesis, with $p > 0.1$. The finding is not similar to the claim made by Valmohammadi (2011), Zehir *et al.* (2012) and Ghadiri *et al.* (2013) who found the significant effect of leadership management on organization performance. However, it is in line with the finding of Talib *et al.* (2013), Sadikoglu and Olcay (2014) and Mehmood *et al.* (2014) who found insignificant link between leadership management and organization performance.

The question is how such result emerges? As one of the unexpected results, the researcher tries to reason out the possible reasons as the following.

- i. First, it was believed that the branch managers of the MFIs that respond to this research seem to focus more on the operation and executing the order from the MFIs headquarters. Moreover, the majority of the study respondents are less than 40 years old indicating that the branch managers are not matures enough to be leaders. This probably makes them pay less attention to the leadership management issues and thus some of them rated the leadership management as not a significant contributor to the MFIs performance.
- ii. Second, looking at the percentage of the MFIs that have quality officers at the branch levels, this may be an indicator for the involvement level of top management in the quality related issues. The percentage of MFIs branches that have the quality officers is only 28%, this shows that attention given to the issue of quality by the leadership management is less.

Thus, leadership management at the branch level has not given proper attention to quality practices. This may explain the insufficient of quality management

supportive leadership styles being practiced by the MFIs branch managers to yield successful quality initiatives.

5.2.1.2 Customer Focus and MFIs Performance

This is another interesting result. Customer focus, another TQM practice, was found to be significant, but negatively affecting the MFIs performance ($\beta = -0.151$, $t = 1.536$, $p < 0.1$). Even though the significance level is at the 0.1, the negative sign shows the opposite direction of the common or expected findings. It is not in line with the results found by Valmohammadi (2011), Zehir *et al.* (2012) and Ghadiri *et al.*, (2013) who reported the significant and positive effect of customer focus on organizational performance or the studies by Voss and Voss (2000), Gao, Zhou and Yim (2007) and Mehmood *et al.* (2014) which reported an insignificant association between customer focus and organization performance.

As unexpected finding, the research tries to explain possible reasons regarding this result. One possible reason may be due to the microfinance industry nature being a unique business concerned, together, about profit and social objectives. More clearly, focusing on the customers who are very poor, particularly in Yemen, where almost more than 54% of the population live under the poverty line, is costly and risky which may lead to a reverse result. This probably explains why the MFIs managers rated the customer focus as a significant contributor with negative effect.

Another possible reason may be that it is difficult for the MFIs to identify the eligible customers and satisfy them due to a wide range of differences among

customers in income, culture and education especially in the lack of qualified staff and sufficient capabilities. Thus, in this situation, the focus more on the poor customers without good experience leads to lots of errors that influence the overall MFIs performance negatively. This result shows something unique which reflects the distinctive nature of the MFIs, having special objectives and customers.

5.2.1.3 Strategic Planning and MFIs Performance

Strategic planning, one of the TQM practices, cannot be proved as the significant variable influencing the MFIs performance ($\beta = 0.064$, $t = 0.445$, $p > 0.1$). There is not enough evidence to reject the null hypothesis with $p > 0.1$. This result is not the result the researcher seeks to prove based on the findings of prior research works of Idris (2011), Jaafreh and Al-abedallat (2012) and Alnasser *et al.* (2013) who concluded the significant effect of strategic planning on organization performance. Although the insignificant link between the two constructs is not commonly found in the literature, this research finding concerning this relationship is consistent with the finding of studies conducted by Talib *et al.* (2013) and Sadikoglu and Olcay (2014).

Similarly, the researcher tries to provide plausible reasons figuring out the emergence of such result. First, the MFIs branch managers seem that they pay more attention to control the daily work activities and seriously lack the authority to decide on the strategic directions of their institutions. This explains why they pay less attention to the strategic planning issues and most of them rated strategic planning as an insignificant factor to affect the MFIs performance.

Second, the MFIs managers participated in this study do not have the capabilities to draw the strategic plans of their institutions. The top management at the MFIs headquarters do not provide them with the room or opportunity to play the role of strategic leaders. The branch managers probably think that their role is to execute the strategic plans. This may explain the insignificant result concerning the link between strategic planning and the MFIs performance at the branch levels.

This result reveals that the majority of the MFIs branch managers do not perceive strategic planning as a significant factor to the MFIs performance. According to Talib *et al.* (2013), if managers are not allowed to get involved in strategic planning, then they will be less commitment. In this regard, the top management at the headquarters of the MFIs should allow the branch managers to participate in drawing the strategic plans for effective quality principles execution and improved performance. When they participate in such processes, they then realize the significance of strategic plans and they may become more committed to execute these plans effectively, and rated strategic planning as a crucial component to the MFIs performance.

5.2.1.4 Training and MFIs Performance

Training, one of the TQM practices, was found to have a very significant positive effect on the MFIs performance ($\beta = 0.285$, $t = 2.842$, $p < 0.01$). The data provides enough empirical evidence to reject the null hypothesis with $p < 0.01$. Among the hypothesized TQM practices, this result reveals that training has the second strongest, and significant effect on the MFIs performance with $\beta = 0.285$. This is an

expected result as the significant role of training on organization performance is well established in the literature by many studies such as Karia and Asaari (2006), Fening *et al.* (2013), Ghadiri *et al.* (2013) and Talib *et al.* (2013).

Despite of this result that generalizes and supports the significant effect of training on the organization performance, for this study the performance of the MFIs, a few studies such as Sadikoglu and Olcay (2014) found mixed results. However, this may due to different measures of performance used in their studies. This result implies that training is crucial for TQM implementation success, financial sustainability, improving internal and external customer satisfaction, improving operation process, innovation and achieving social objectives within MFIs.

It was suggested that the MFIs management should be committed to provide different training programs such as on the job and specialized training programs. Consequently, MFIs can generate awareness of quality principles among employees and management, reduce costs, satisfy customer and achieve economy of scales and obtain the objectives which were established for. In a nutshell, training is a crucial variable for successful TQM implementation and superior MFIs performance.

5.2.1.5 Continuous Improvement and MFIs Performance

Similarly, continuous improvement was found to be one of the significant practices affecting the MFIs performance ($\beta = 0.210$, $t = 1.950$, $p < 0.05$). The data provides enough empirical evidence to reject the null hypothesis with $p < 0.05$. This result reveals that among the significant TQM practices affecting the MFIs performance,

continuous improvement is the third strongest TQM practice affecting the MFIs performance after training with $\beta = 0.210$. This result is in line with the previous studies examining the organizational performance such as Fotopoulos and Psomas (2010) and Mehmood *et al.* (2014). Same argument as before, although this result confirms the significant effect of continuous improvement on the MFIs performance and supports the previous literature regarding this relationship, there are few studies such as Zehir *et al.* (2012) and Talib *et al.* (2013) that reported otherwise.

The result implicates that continuous improvement in the process and functions was realized within MFIs branches. The MFIs branch managers and employees were given the opportunities to suggest changes and adjustments that improve the existing processes and services. The MFIs branch managers pay more attention to continuous improvement practices. This probably explains why the majority of them rated continuous improvement as the significant contributor to the MFIs performance.

To this end, it was argued that the level of continuous improvement practices in Yemeni MFIs was adequate enough to foster the MFIs performance. Consequently, the managers receive compliments and recognitions for their successful programs targeting products, services and process improvement. The awareness among MFIs branch managers towards continuous improvement is notably seen that lead to the achievement of better performance and sustainable competitive advantage.

5.2.1.6 Benchmarking and MFIs Performance

On the contrary, benchmarking was not found to be a significant factor affecting the MFIs performance ($\beta = 0.079$, $t = 0.834$, $p > 0.1$) and open for the test on the full mediating effect of the IT capability. The data does not provide sufficient evidence to reject the null hypothesis with $p > 0.1$. This is not what the researcher postulated based on the claim made by prior research work of Sit *et al.* (2009), Idris (2011) and Talib *et al.* (2013) who found a significant causality between these two constructs. Why it turns out this way? It is a very important and strikingly question and one probable reason is that the MFIs branch managers may perceive that each microfinance institution is unique and the best practices of an institution cannot be applied exactly to another. Thus, the benefits of benchmarking practices are not realized by them. This indicates why some of them assessed the benchmarking as an insignificant factor to the MFIs performance.

The other justification could be the MFIs branch managers are not given the opportunity to visit international leading MFIs model to ensure the information about their best practices. Without exposure make them pay less attention to the importance of benchmarking and thus makes the most of them underestimated its effect on the MFIs performance.

Although the insignificant effect of benchmarking on the MFIs performance, MFIs branch managers should be involved in exploratory visits to local and international leading MFIs to know the best practices applied in the microfinance industry. Moreover, the microfinance methodology came from different environments which

cannot be applied exactly as they are. These best practices should be modified and adjusted based on research works to suit the operation environment of the institution. In short, the MFIs should view benchmarking as a strategic resource by which they can achieve sustained competitive advantage.

5.2.1.7 Quality Culture and MFIs Performance

Quality culture, one of the TQM factors, was found to be a very significant factor affecting the MFIs performance ($\beta = 0.327$, $t = 3.070$, $p < 0.01$). The data provides enough empirical evidence to reject the null hypothesis with $p < 0.01$. This result shows that among the hypothesized TQM practices, quality culture has the strongest and significant effect on the MFIs performance with 0.327. This is not a surprising result as the significant effect of quality culture is not limited to affect organization performance, but it is emphasized to be a dominant TQM practice that significantly monitors the organizational culture and improves better TQM practices (Talib *et al.*, 2013).

This result also provides supporting evidence to the finding of Yusof and Ali (2000) who reported the significant effect of quality culture on the organizational performance. The result indicates that the MFIs branch managers realize the crucial role of quality culture to establish a viable organization culture, evolve other TQM practices effectively and then the quality-related outcomes and MFIs performance are achieved at high levels.

Therefore, MFIs management should pay more attention to deploy the quality culture practices, including serving customers in a better way, doing things appropriately, loyalty and working as a team and housekeeping are priority practices to be implemented within the MFIs. In other words, deployment of quality cultural practices within the MFIs is crucial for their success and introducing quality products and services.

Based on the individual test, the study found that the three TQM factors, namely quality culture, training and continuous improvement are significant individual factors affecting the MFIs performance. The change in training, continuous improvement and quality culture results in %28.5, 21% and %32.7 improvement in MFIs performance respectively. It has also found that customers focus, as a TQM practice, has a significant effect on the MFIs performance but negatively. While other TQM practices namely, leadership management, strategic planning and benchmarking do not significantly affect the MFIs performance. These results help MFIs to have in-depth understanding of the significant role of each TQM practice which leads to manage them effectively and pay more attention to the significant contributors affecting the MFIs performance.

In summary, the study had found that TQM practices as a composite factor, consisting of seven practices, is a significant contributor factor influencing the MFIs performance. This result supports the holistic approach of TQM which assume that TQM should be treated as a collective construct rather than individual practices. These practices are dependent on each other so that each one complements another.

5.2.2 Market Orientation (MO) and MFIs Performance

The second objective of the study is to examine the effect of MO variables on the MFIs performance. Four hypotheses testing was carried out as presented in the previous section. All the MO variables are tested as a single construct and only two out of the three hypothesized variables are found to significantly affecting the MFIs performance. Like the TQM practices, the hypotheses testing does not provide empirical evidence regarding the significant effect of all the MO activities on the MFIs performance when tested individually. This shows that not all the MO activities, as found in the other studies (non-MFIs), are significant contributors to the MFIs performance. However, when tested as a composite variable, all these activities are jointly formed (as a composite variable) to affect significantly on the MFIs performance.

This finding supports the complementary approach, which the MO activities should be applied as a composite variable to affect significantly the MFIs performance. The higher level of MO activities jointly, gathering information about customers, disseminating this information within the organizations and responding quickly to their needs applied in the originations, the better MFIs performance they gain. The significant and positive effect of the MO on the MFIs performance ($\beta = 0.244$, $t = 2.133$, $p < 0.05$) is in agreement with the previous research works which revealed empirical evidence on the significance role of the MO on the organization performance (for examples, Zebal & Goodwin, 2012; Altuntaş *et al.*, 2013; Boso *et al.*, 2013 and Taleghani *et al.*, 2013 Protcko & Dornberger, 2014; Al-Ansaari *et al.*, 2015). The change in MO results in %22.4 improvement in MFIs performance. This

result provides an answer to the second question of the study. It also offers empirical evidence supporting the assumption of RBV theory, confirming that the MO, as an organizational resource, is a significant antecedent of the MFIs performance.

In conclusion, this result suggests that it is very important for the Yemeni MFIs to implement MO activities as a whole and to pay more attention to the two significant activities to foster the overall performance. It also suggests that it cannot be claimed that the intelligence generation, which was not found to have a direct effect on the MFIs performance, can be totally ignored by the MFIs because it is a prerequisite for the successful MO strategy, without which the MFIs cannot proceed for the other two activities (intelligence dissemination and responsiveness). In a nut shell, the MFIs, in the context of Yemen, are in need to be market-oriented as a prerequisite for achieving better performance. The discussion for each of the MO dimensions influencing the MFIs performance is as follows;

5.2.2.1 Intelligence Generation and MFIs Performance

Intelligence generation, as one of the MO activities, is the only activity that was not found to be significantly associated with the MFIs performance ($\beta = 0.015$, $t = 0.177$, $p > 0.1$). It is close, but there is insufficient evidence to reject the null hypothesis with $p > 0.1$ to conclude that the intelligence generation has a significant direct effect on the MFIs performance. This is an unexpected result because the researcher hypothesized a significant connection between the two constructs following the findings of the previous studies carried out by Untachai (2008), Hamadu *et al.* (2011) and Julian *et al.* (2013). However, the result is similar to the results of studies

by Chao and Spillan (2010) and Al-Dmour *et al.* (2012) who found insignificant relation between intelligence generation and organization performance.

According to Al-Dmour *et al.* (2012), this insignificant result was not widely reported. This research, in searching for possible explanations suggests that the intelligence generation, which is mainly related to collecting information about the regulations and the economy, is not the main responsibility of the branch managers. Thus, generating information at the branch level is not given proper attention. Although the insight from the data analysis at the top management level indicate positive connection, such findings are not reported and argued further as the study investigates the overall findings from the branch level.

Another probable reason is that the effect of intelligence generation cannot be realized directly on the MFIs performance, which might have an indirect effect through other components of the MO. This fact is supported by the conclusion offered by Carbonell and Rodríguez Escudero (2010) who claimed that intelligence generation has an indirect influence on organizational performance through intelligence dissemination and responsiveness.

To conclude this section, the MFIs managers should focus more on intelligence generation being the first step to implement an effective MO strategy and the insignificant effect does not mean that it is not important as it is likely to have an indirect influence on the performance.

5.2.2.2 Intelligence Dissemination and MFIs Performance

Individually, intelligence dissemination, one the MO variables, is proved to be a strong significant variable on the MFIs performance ($\beta = 0.340$, $t = 3.596$, $p < 0.01$). The data collected offers sufficient evidence to reject the null hypothesis with $p < 0.01$. This result indicates that intelligence dissemination, individually, has a very strong effect on the MFIs and this is in line with the initial expectation of the study.

This result is consistent with the findings of studies carried out by Hamadu *et al.* (2011), Al-Dmour *et al.* (2012) and Julian *et al.* (2013). This implies that the MFIs should pay more attention to disseminating information within the different levels so that their performance can be improved. As disseminating information creates synergies among the departments of an institution and provide a clear picture about the market trends so they can make prompt action which results in achieving competitive advantage and then better performance.

Disseminating information within the context of microfinance industry is easily accessible by all staffs that recognize the needs of customers so that they can respond promptly. In a nutshell, intelligence dissemination can help the MFIs to achieve the desired financial and social objectives by spreading the information about both current and future customers' needs.

5.2.2.3 Responsiveness and MFIs Performance

Similar to the result of intelligence dissemination, responsiveness is also found to be a very significant variable affecting the MFIs performance ($\beta = 0.331$, $t = 4.465$, $p < 0.01$). Again, this result sufficiently provides the empirical proof to reject the null hypothesis with $p < 0.01$. This indicates that responsiveness has a very strong effect on the MFIs performance.

This result is an agreement with what the researcher tries to prove based on the claim made by scholars such as Untachai (2008), Chao and Spillan (2010), Hamadu *et al.* (2011), Al-Dmour *et al.* (2012) and Julian *et al.* (2013) who reported the significant impact of responsiveness on the organizational performance.

This implies that the performance of MFIs can be enhanced by the quick response to the changes in the business environment such as to regulations, technology and price strategies. Keelson (2014) mentioned that responding quickly to any competitive actions which are supposed to threaten target market is an important for superior performance, and for this finding, it shall be the case for the MFIs performance.

5.2.3 IT Capability and MFIs Performance

For the testing the mediating effect of IT capability on the relationship between both TQM and MO with the MFIs performance, the step is to test that the IT capability has a significant effect on the MFIs performance. It was found that IT capability significantly affecting the MFIs performance in Yemen.

The finding of the study shows that IT capability was proved to have a significant effect on the MFIs performance ($\beta = 0.232$, $t = 1.974$, $p < 0.05$). The finding provides enough evidence to reject the null hypothesis with $p < 0.05$. It indicates that IT capability is significantly related to MFIs performance with $\beta = 0.232$. The finding is consistent with the previous studies that found a significant link between the two constructs in non-MFIs (see Bi & Zhang, 2008; Yu & Xin-quan, 2011; Ong & Chen, 2013, Karimi Mazidi *et al.*, 2014).

This result suggests the IT capability in the form of IT knowledge, IT objects and IT operation is able to contribute to the MFIs performance. In explaining this, Pérez-López and Alegre, (2012) believe that IT knowledge helps in assimilating knowledge obtained from outside the organization, reinterpreting this knowledge and reformulating the existing and new one. Shao *et al.* (2009) suggested that when organizations tend to use innovations such as IT, IT knowledge is a prerequisite to use it effectively in their routine works which lead to better performance. Then comes IT objects, which are important because they help in managing the information within the organization (Rai, 2012). IT operations are also crucial as they enable organizations to manage customer bases effectively, keep this information in an organized manner and share information more efficiently across the different departments of the organization (Pérez-López, & Alegre, 2012).

In brief, MFIs managers should allocate necessary resources to enhance IT capability. They should have IT budget for sophisticated IT objects and supporting any initiatives to use IT effectively within the MFIs operation in order to achieve superior performance.

5.2.4 TQM and IT Capability

To recap, taking the TQM as one factor, the outcomes of the test analysis show that the TQM to be a significant factor affecting IT capability ($\beta = 0.253$, $t = 2.099$, $p < 0.05$). The finding provides sufficient evidence to reject the null hypothesis with $p < 0.05$. It can be argued that TQM has a strong effect on IT capability and this indicates that TQM can significantly build and improve IT capability.

This result supports the claim of Prajogo and Hong (2008), Yusr *et al.* (2012) and Jones and Grimshaw (2012) concluded that the effect of TQM practices is not limited to quality enhancement and organization performance rather it can be extended to include building a broader range of organizational capabilities. For example, scholars such as Yusr *et al.* (2014), Yusr *et al.* (2012), Akgün *et al.* (2014) and Jiménez-Jiménez *et al.* (2015) found that TQM has a significant influence on different of organization capabilities such as technological innovation capability, marketing capability, learning capability and both exploitation and exploration capabilities respectively.

Theatrically, the RBV theory perspective which states that organizational resources contribute significantly to build, evolve and enhance organizational capabilities is supported by the finding as the synergy between the different practices of TQM and IT capability components leads to the maximization the effectiveness and capabilities of IT within these organizations. On other words, TQM practices can be regarded as the bases of building IT capability, which in turns contribute to the better of the MFIs performance.

5.2.5 MO and IT Capability

Similarly, to recap, the result reveals that MO also has a very strong significant effect on IT capability ($\beta = 0.429$, $t = 3.890$, $p < 0.01$) and it offers enough evidence to reject the null hypothesis $p < 0.01$. It also proves that MO has a strong significant effect on IT capability. This result is similar to the finding offered by Wang *et al.* (2013) who argued that marketing as a broad area which can improve the dynamic capability of organizations. It is also in line with previous studies of Hooley *et al.* (2005), Murray *et al.* (2011), Ngo and O'Cass (2012) and by Fang *et al.* (2014) who modelled MO with organizational capabilities, management capability and customer-linking capability, marketing capabilities and market-sensing capability and customer-linking capability.

This result explains that when MFIs employ the activities of MO, IT capability can be leveraged, which leads to efficient IT usage and better customer service. It suggests that when organizations gather information, disseminate it and respond to the customer and changing market, IT capability can be more effective.

5.2.6 The Mediating Effect of IT Capability on the Relationship between TQM and MFIs Performance

The result of bootstrapping analysis shows that IT capability mediates significantly the link between TQM and MFIs performance. According to the criterion of Zahu *et al.* (2010), IT capability is a partial (complementary) mediator on the relationship

between TQM and MFIs performance. Although most authors such as and Akgün *et al.* (2014) and Jiménez-Jiménez *et al.* (2015) support for the full mediation effect of IT capability, however, it is aline with other ones such as Yusr *et al.* (2012) who found marketing capabilities is a partial mediator between TQM and innpvation performance.

For testing the mediating effect of IT capability on the link between TQM practices and MFIs performance, the leadership management, customer focus and training have changed the mediating result where the full mediating results are found. In addition, for quality culture, the only partial mediation effect was found. These results are of the major finding in the study as the IT capability becomes the mediator to these three TQM practices.

It is quite logical that in this modern world, the IT capability is required for the implementation of leadership management practices, customer focus initiatives and training activities. The leadership management practices can be effectively implemented with the IT capability where such capability makes the leaders look better in terms of their ability and image of their organizations in the competitive environment. Similarly for the customer focus initiatives can be facilitated through IT capability because it can assist in customer determination and satisfaction. However, the partial mediating effect of IT capability on the relationship between quality culture and MFIs performance indicates that quality culture has an indirect effect and at the same time it has a direct effect on the MFIs performance.

Although the mediating results for strategic planning, continuous improvement and benchmarking were not confirmed, such results show that the IT capability independently influencing the MFIs performance. Treating the IT capability as an independent variable is similar to most findings and suggestions by many researchers in the IT area.

5.2.7 The Mediating Effect of IT Capability on the Relationship between MO and MFIs Performance

Similarly, the result of bootstrapping analysis found that IT capability is a significant mediator on the relationship between MO and MFIs performance. The result also shows that IT capability mediates partially (complementary) the relationship between these two constructs. This result is not in line with the study of Murray *et al* (2011) who found that marketing capabilities is a full mediator on the relationship between MO and performance. However, it is in line with other studies which found only partial mediating effects of organization capabilities such as marketing capability, and innovation capability (Ngo & O'Cass, 2012) and both market-sensing capability and customer-linking capability (Fang *et al.*, 2014) on the link between these two variables.

For testing the mediating effect of IT capability on the relationship between MO activities and MFs performance, an interesting finding was found where the full mediating effect is discovered for the intelligence generation. The MFIs need to have IT capability to ensure the effectiveness of intelligence generation to affect the MFIs performance.

This also means that the results provide empirical evidence on the significant role of direct and indirect effect of the MO on the MFIs performance. It can be concluded that IT capability and MO can be deployed together in order to take the advantages of the both constructs and improve the overall performance of MFIs.

An interesting result was found by the additional analysis of the effect of MO as a mediator on the link between TQM and the performance of MFIs. Based on the result, MO is a partial mediator for TQM (as a composite variable) to influence the MFIs performance.

This result was supported by the authors, such as Douglas and Judge (2001) and Ehigie and McAndrew (2005) who argued that the desired outcomes of TQM can be gained when it is compiled together with other organizational resources. Specifically, Wang *et al.* (2012) supported this argument claiming that both TQM and MO complement each other to meet the customers' needs and satisfy them.

More importantly, the result shows that the full mediating effect of MO is confirmed for the two practices of TQM, which do not have direct effect and indirect effect via IT capability on the MFIs performance, strategic planning and benchmarking. It is quite logical in service organizations such as MFIs where much focus is given to the customer, the MO activities such as gathering information about customer, regulations, technological developments, political situations and the economy, disseminating this information within the MFIs and take actions based on it can assist in strategic planning itself. Similarly for benchmarking, it is very important to employ other local and international MFIs practices with the help of MO activities as

a successful approach of a microfinance institution cannot be employed exactly by another. Therefore, MO activities assist the MFIs to modify these approaches or experiences in order to guarantee the success.

For the indirect effect of training and continuous improvements on the MFIs performance, MO was found a partial mediator. This indicates that enriching training programmes with knowledge about market trends and responding to the market changes appropriately help in making training is more effective. MO activities also can assist MFIs management to improve the products and services continuously and effectively by providing knowledge about the market trends, disseminating this knowledge among staff and taking appropriate actions. This explains why MO was found as a partial mediator for continuous improvement. However, neither the full not the partial mediation effect of MO was established for leadership management, customer focus and quality culture.

Thus, this study provides empirical evidence on the direct effect of TQM and MO on MFIs performance. It also proves the indirect effect of TQM practices (full or partial mediating effects) on the MFIs performance through IT capability and MO. Furthermore, the indirect effect (full or partial mediating effect) of MO was established via IT capability. It is suggested that integrating TQM, MO and IT capability can result in a better MFIs performance.

Last but not least, the results concerning the mediating effect of IT capability on the relationship between TQM and MO with the MFIs performance support the theoretical view of Eisenhardt and Martin, (2000) and Morgan *et al.* (2009) who argue that obtaining competitive advantage and achieving superior performance by a

firm can be realized when capabilities acquire, integrate and deploy resources appropriately to make them more effective in taking the advantage of opportunities in the market. This result also supports the claim of Lu *et al.*, (2010) who suggest linking resources and capabilities together for better organization and capabilities can be employed as mediators on the mentioned relationships. In brief, the results of this study provide an empirical evidence to prove that integrating IT capability, TQM and MO contributes to MFIs performance improvement. This is in line with the RBV, capability theory and complementarity theory.

5.3 Contributions of the Study

In general, the findings of the study have significantly contributed to both the theory and practice. The following sub-sections present the contributions.

5.3.1 Theoretical Contribution of the Study

The theoretical contribution of this study comes from the model explaining the relationship between TQM, MO with the MFIs performance, and the mediating effect of IT capability on the mentioned relationship. Literature review reveals that the studies regarding the variables of the study carried out in the business field. These studies focus only on the four main perspectives; of the balanced scorecard, namely financial, customer, internal process and finally learning and growth perspective, the social perspective is included in this study in measuring the MFIs performance, which actually concerns on the business and the social objectives. Therefore, this study addresses the gap in the literature by adopting IT capability as a

mediator on the relationship between both TQM and MO with the performance of MFIs.

Regard the microfinance industry; this study contributes to the current existing literature by responding to the call for more research works on the relationship between TQM and MO, and organizational performance, as the link is still not established. Thus, this study adds to narrow the gap in the literature related to this relationship. The outcomes of the study confirm the significant direct effect of TQM, MO and IT capability on the MFIs performance with support theory generation. Moreover, this study shows the performance of MFIs can be improved by incorporating these three variables and, their significant role as a composite construct supports and contributes to the RBV theory, capability theory and complementarity theory.

Examining the TQM, MO and IT capability as aggregated variables and examining the effect of both TQM and MO as multidimensional constructs on the performance of MFIs for deeper understanding and narrowing the gap in the literature, the study provides more insights about the significance role of each dimension of the variables on the MFIs performance. The study reveals that management strategic interventions such as TQM and MO should be implemented as the holistic strategies rather than separate practices or activities, as figured out from the outcomes of the analysis, that reveal not all the TQM and MO dimensions were found significant for explaining the MFIs performance.

The present study also provides empirical evidence in the area of the study by revealing the significant effect of organization resources in building the organization

capabilities. The findings of the study show that high levels of TQM practices and MO activities lead to the efficient IT capability within the organizations. These findings provide support to the RBV theory, which postulates that organizations with a set of resources can strengthen unique capabilities and obtaining sustained competitive advantage and superior performance.

Another theoretical contribution claimed by the study was related to the proven fact that IT capability is a mediator to the relationship between both TQM and MO with the performance of MFIs. This also is an additional empirical evidence in the domain of RBV theory, capability theory and complementarity theory, providing a broader theoretical perspective regarding the role of organization resources (here TQM and MO) and capabilities (here IT capability) and how they can be deployed to foster organization performance. It proves the premises of these theories in the form of organization resources influence, their integration and deployment with capabilities and how they complement each other to improve organization performance.

This study is one of the scarce studies carried out in the developing countries, particularly in MENA countries and in the context of microfinance even is scarcer as the majority of studies related to TQM, MO and IT capability have been conducted in developed countries such as the USA and UK (Najeh & Kara-Zaitri, 2007; Al-Amri & Bon, 2012; Al-Swidi & Mahmood, 2012; Shin & Aiken, 2012; Fening *et al.*, 2013).

In this regard, the partial mediating effect of IT capability revealed on the link between both TQM and MO with the performance of MFIs suggests that IT

capability was associated with these variables and it affects the MFIs performance. It was evidenced that TQM and MO contribute to IT capability and the improvement of TQM and MO goes together with the improvement of IT capability. This result also shows that the direct and indirect effect of TQM and MO on the performance of the MFIs and IT capability can be considered as a mechanism to explain the relationship but not to a great extent.

The current study has valuable contribution as it validates the measurements of the study variables in the context of microfinance sector. The literature reveals that the scales of these variables are established, valid and reliable in the service sector and in developed countries. Moreover, this study is one of a few studies that utilized the Smart PLS-SEM to validate the measurement model and structural model, which contributes the methodological aspect significantly. This is on top of the use of SPSS to test for the hypotheses with a graphical representation of results.

5.3.2 Practical Contribution of the Study

According to the findings of the study, the present study has important practical implications for the MFIs managers, practitioners and policy makers. It provides significant insights to them explaining a roadmap that helps in understanding the most influential factors on the MFIs performance in Yemen. This certainly contributes to improve the MFIs performance, which is compatible with the Yemeni government initiatives in fighting poverty and the country's vision 2025. Due to the current critical situation in Yemen, the poverty rate has been increasing so that the need for microfinance services will increase as well. Moreover, the needs and

preferences of customers have become different which strategic interventions such as TQM and MO accompanied by IT capability are needed to identify their needs and satisfy them.

The findings of the study provide insights into how MFIs managers and practitioners can enhance the performance of MFIs and gain competitive advantage in the market. This can be obtained through proper implementation of TQM, conducting MO activities effectively and building IT capability. The MFIs managers should pay attention to organization resources such as TQM and MO along with IT capability as an organizational capability in order to ensure long-term success and gain superior performance. In addition, TQM practices, MO and IT capability should be integrated effectively to guarantee better MFIs performance.

More importantly, the findings raise the awareness among the MFIs managers and practitioners about the important role of TQM practices and MO activities in building IT capability within their institutions. In other words, the managers of MFIs should take into account that TQM strategy and MO are aligned effectively with IT capability. Consequently, IT capability can be more effective in operating daily and routine works, manage information properly, serve customers better and foster the overall performance. This proves that IT is a crucial factor for all organizations, including MFIs to gain advantages over rivals.

The findings of this study also suggest that IT capability is an important factor that enhances the indirect effect of both TQM and MO on the performance of MFIs. However, the effect of IT capability does not rise to the level of claiming that TQM

and MO affect significantly the performance of MFIs only when IT capability exists. The results indicate the managers to focus more on TQM strategy and MO activities as they have a direct effect on the MFIs performance and improve IT capability. It also provides more insights and understanding among MFIs managers about the importance of the direct effect of IT capability on MFIs performance and increase the indirect effect of TQM and MO though this effect is not absolute.

The MFIs managers should allocate the necessary resources such as IT training programs, IT infrastructure budget and pay more attention to effectively use IT in the MFIs operations. The policymakers also can include quality principles, marketing skills and IT skills in the curricula. Other stakeholders such as international organizations and donors can provide technical assistance which helps MFIs to establish an effective IT system. Therefore, all these efforts will help the Yemeni government to improve the nation's economy through fighting poverty and unemployment.

5.4 Limitations and Recommendations for Future Research

Like any other research works, this study is not without limitation, though this study has provided various contributions, including theoretical and practical contributions. These limitations are evidenced when the author interprets the findings of the study. The limitations as well as the opportunities for future research works are provided below.

Generally, the scope of the study was limited to the microfinance sector in Yemen; however, it is possible to generalize these findings on similar industries. Moreover, the levels of TQM strategy implementation, MO activities; IT capability as well as organizational performance within the sector are viewed differently from the other service sector. This limitation opens for the opportunity of future research works in other sectors such banking system, manufacturing, education in order to draw conclusions. Thus, generalization can be made for the service sector in Yemen. Moreover, the findings of this study also cannot be generalized to other countries in the MENA region due to different levels of orientations towards applying these strategies and technology advancement in the countries. It was highly recommended to further investigate the study model in other Arab countries for obtaining more insights and generalization.

Note that the data was collected from the branch managers of MFIs, which have different legal status from the branch managers of small and medium banks, agricultural bank, programs and so on. These institutions have different level of emphasis on TQM practices, MO activities and IT capabilities, which might lead to different conclusions. Thus, conducting comparative studies would reveal a clear understanding about the nature and effect of TQM practices, MO activities and IT capability on the performance of these institutions.

With regard to the methodology for the study, this study used a cross-sectional research design to test the hypothesized relationships at a one point of time, Al-Swidi and Mahmood (2012) regarded this as a methodological limitation. This type of study is argued for not considering the dynamic changes in the environment and the

psychological changes of the respondents that can occur. In this study, the effects of organization strategies (TQM, MO and IT capability) are long-term in nature, and thus, this study recommends examining the study model utilizing longitudinal approach to validate the obtained results.

With the context of examining the mediating effect of IT capability to the relationship between both TQM and MO and MFIs performance, as Zhou *et al.* (2005) point out that capabilities are the glue that integrate organization resources with each other and enable these organizations to establish them effectively, the capabilities can be incorporated together with resources and used as mediators on the link between these resources and organization performance. The partial mediating effect of IT capability on the mentioned relationship is revealed in this study instead of full mediating effect. This is expected to be due to different levels of technology emphasis and used by MFIs in Yemen. Thus, there is a need to test for the mediating effect of IT capability on these variables in specific categories such as banks and programs operating in microfinance. Testing the mediating of IT capability on the variables of the study or with other organization resources in different sectors with high or less technology-oriented firms might provide different conclusions. The study also suggests future research works to expand the study model by adding more organization resources such as entrepreneurial orientation and learning orientation, which the interactions of these resources with the variables of the study might show more insights.

5.5 Conclusion

This study reveals that TQM, MO strategies and IT capability had been recognized as the most important resources and capabilities that can help organizations to foster performance and gain sustained competitive advantage. These factors were proposed to affect significantly the performance of MFIs and examining the interaction effect of TQM, MO and IT capability on the performance of MFIs, represented by both business and social perspective is the major contribution of the study.

Moreover, the finding of the partial mediating effect of IT capability on the relationship between both TQM and MO and MFIs performance offers a significant finding with regard to the theory validation and expansion, to RBV theory, capability theory and complementarity theory within the context of MFIs performance. The partial mediating effect of IT capability on the mentioned relationships suggests that the effect of TQM, MO and IT capability to be integrated together to enhance the performance of MFIs and TQM and MO can improve the capabilities of IT. The indirect effect of TQM and MO on MFIs performance through IT capability was also established even though it cannot rise to the absolute effect.

In summary, the current study had provided several contributions, particularly, to the methodology and practice. It had provided empirical evidence on the effect of TQM, MO and IT capability on MFIs performance, explaining the way how this performance can be enhanced.

REFERENCES

- Ab Wahid, R., Corner, J., & Tan, P. L. (2011). ISO 9000 maintenance in service organisations: tales from two companies. *International Journal of Quality & Reliability Management*, 28(7), 735-757.
- Abdel Baki, R., Zain, S., & Cordier, C. (2010). MIX Microfinance World: 2010 Arab Microfinance Analysis & Benchmarking Report. Retrieved June 23, 2012 from http://www.themix.org/sites/default/files/2010%20Arab%20Microfinance%20Analysis%20Benchmarking%20Report%20-Final_3.pdf
- Abdul Subhan, Q., Mehmood, M. R. & Abdul Satar (2013). Innovation in Small and Medium Enterprises (SME's) and its impact on Economic Development in Pakistan. *Proceedings of 6th International Business and Social Sciences Research Conference 3 – 4 January, 2013, Dubai, UAE, ISBN: 978-1-922069-18-4*.
- Agyapong, G. K. (2014). Market Orientation in the Microfinance Industry: Related Literature. *International Journal of Management Sciences*, 4(9), 388-396.
- Ahire, S.L., & O'Shaughnessy, K.C. (1998). The role of top management commitment in quality management: An empirical analysis of the auto parts industry. *International Journal of Quality*, 3(1), 5–37.
- Ahire, S.L., Golhar, D.Y., Waller, M.A., (1996). Development and validation of TQM implementation constructs. *Decision Sciences*, 27, 23–56.
- Ahlin, C. and Jiang, N. (2008). Can Micro-credit Bring Development? *Journal of Development Economics*, 86, 1–21.

- Ahmad, M. F., Zakuan, N., Jusoh, A., Tasir, Z., & Takala, J. (2013). Meta-analysis of the relationship between TQM and Business Performance. In *IOP Conference Series: Materials Science and Engineering*, 46(1), 012020. IOP Publishing.
- Ahn, M. J., & York, A. S. (2011). Resource-based and institution-based approaches to biotechnology industry development in Malaysia. *Asia Pacific Journal of Management*, 28(2), 257-275.
- Akgün, A. E., Ince, H., Imamoglu, S. Z., Keskin, H., & Kocoglu, İ. (2014). The mediator role of learning capability and business innovativeness between total quality management and financial performance. *International Journal of Production Research*, 52(3), 888-901.
- Al-Amri, A. A. H., & Bon, A. T. B. (2012). Measuring The Total Quality Management In The Yemeni Universities: From the Perspectives of Faculty Members. *International Journal of Research & Reviews in Applied Sciences*, 10(1).
- Al-Ansaari, Y., Bederr, H., & Chen, C. (2015). Strategic orientation and business performance: An empirical study in the UAE context. *Management Decision*, 53(10), 2287-2302.
- Al-Batuly, A., Al-Hawri, M., Cicowiez, M., Lofgren, H., & Pournik, M. (2012). Achieving the MDGs in Yemen: an assessment. *World Bank Policy Research Working Paper*, (6013). Retrieved Januray 19, 2013 from <http://ssrn.com/abstract=2029437>
- Al-Dhaafri, H. S., Al-Swidi, A. K., & Yusoff, R. Z. B. (2016). The mediating role of total quality management between the entrepreneurial orientation and the organizational performance. *The TQM Journal*, 28(1), 89-111.

- Al-Dhaafri, H. S., Bin Yusoff, R. Z., & Al-Swidi, A. K. (2013). The Effect of Total Quality Management, Enterprise Resource Planning and the Entrepreneurial Orientation on the Organizational Performance: The Mediating Role of the Organizational Excellence-A Proposed Research Framework. *International Journal of Business Administration*, 4(1), 66-85.
- AL-Dmour, H., H., Basheer, E., & Amin, A. (2012). The effect of market orientation on service innovation/a study on the information and communication technology (ICT) sector in Jordan. *International Journal of Humanities & Social Science*, 2(19), 232.
- Ali, A., & Alam, M.A., (2010). Role and Performance of Micro-credit in Pakistan. *International Journal of Business*, 1-43.
- Almarri, K., & Gardiner, P. (2014). Application of Resource-based View to Project Management Research: Supporters and Opponents. *Procedia-Social and Behavioral Sciences*, 119, 437-445.
- Alnasser, A., Yusoff, R. Z., & Islam, R. (2013). Relationship between Hard Total Quality Management Practices and Organizational Performance in Municipalities. *American Journal of Applied Sciences*, 10(10), 1214.
- Al-Qudah, K. A. (2012). The impact of total quality management on competitive advantage of pharmaceutical manufacturing companies in Jordan. *Perspectives of Innovations, Economics and Business, PIEB*, (3/ (12), 59-75.
- Al-Saraireh, S. I. (2013).The Role of Investment in Information Technology on the Performance of Industrial Companies Listed on Amman Financial Market. *International Journal of Business and Social Science*, 4(12).

- Al-Shami, S. S. A., Majid, I. B. A., Rashid, N. A., & Hamid, M. S. R. B. A. (2013). Conceptual framework: The role of microfinance on the wellbeing of poor people cases studies from Malaysia and Yemen. *Asian Social Science*, 10(1), p230.
- Alshebami, A. S., & Khandare, D. M. (2014). Microfinance in Yemen “Challenges and Opportunities”. *International Journal in Management & Social Science*, 2(12), 400-413.
- Al-Swidi, A. K., & Mahmood, R. (2011). Yemeni banking system: Critical issues and future recommended strategies. *European Journal of Social Sciences*, 20(4), 637-655.
- Al-Swidi, A. K., & Mahmood, R. (2012). Total quality management, entrepreneurial orientation and organizational performance: The role of organizational culture. *African Journal of Business Management*, 6(13), 4717-4727.
- Al-Swidi, A.K. and Al-Hosam, A. (2012). The Effect of Entrepreneurial Orientation on the Organizational Performance: A Study on the Islamic Banks in Yemen Using the Partial Least Squares Approach. *Arabian Journal of Business and Management Review (Oman Chapter)*, 2(1), 73-84.
- Altinkemer, K., Ozcelik, Y., & D.O, Z. (2011). Productivity and Performance Effects of Business Process Re-engineering: A firm-Level Analysis. *Journal of Management Information Systems*, 27(4), 129-161.
- Altuntaş, G., Semerciöz, F., & Eregez, H. (2013). Linking Strategic and Market Orientations to Organizational Performance: The Role of Innovation in Private Healthcare Organizations. *Procedia-Social and Behavioral Sciences*, 99, 413-419.

- Al-Zamany, Y., Hoddell, S. E. F., & Savage, B. M.(2002). Understanding the difficulties of implementing quality management in Yemen. *The TQM Magazine*, 14(4), 240-247.
- Ambrosini, V., & Bowman, C. (2009). What are dynamic capabilities and are they a useful construct in strategic management? *International Journal of Management Reviews*, 11(1), 29-49.
- Amit, R., & Schoemaker, P. J. (1993). Strategic assets and organizational rent. *Strategic management journal*, 14(1), 33-46.
- Andrews, R., Boyne, G., & Walker, R. M. (2011). The impact of management on administrative and survey measures of organizational performance. *Public Management Review*, 13(2), 227-255.
- Ardalan, O., Vafai, F., & Pairo, H. (2013). The Role of Stakeholder Management and Its Effect on shareholder value and social issue. *Journal of American Science*, 9(7s).
- Armendariz, B., D'Espallier, B., Hudon, M., & Szafarz, A. (2013). Subsidy uncertainty and microfinance mission drift. Retrieved December 4, 2013 from <http://ssrn.com/abstract=1731265>
- Arumugam, V. C., Mojtahedzadeh, R., & Malarvizhi, C. A. (2011). Critical success factors of total quality management and their impact on performance of Iranian Automotive Industry. In *International Conference on Innovation, Management and Service IPEDR* (Vol. 14, No. 33, pp. 312-316).

- Asian Development Bank (2012). Framework of Inclusive Growth Indicators 2012 Key Indicators for Asia and the Pacific Special Supplement. Retrieved July 23, 2013 from <http://www.seachangecop.org/sites/default/files/documents/2012%2008%20AD%20Key%20Indicators%20-%20Inclusive%20Growth%20Indicators.pdf>
- Assefa, E., Hermes, N., & Meesters, A. (2013). Competition and the performance of microfinance institutions. *Applied Financial Economics*, 23(9), 767-782.
- Ayuub, S. (2013). Impact of Microfinance on Poverty Alleviation. A Case Study of NRSP in Bahawalpur of Pakistan. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 3(1), 119-135.
- Baidoun, S. (2003). An empirical study of critical factors of TQM in Palestinian organizations. *Logistics information management*, 16(2), 156-171.
- Baker, W. E., & Sinkula, J. M. (2009). The Complementary Effects of Market Orientation and Entrepreneurial Orientation on Profitability in Small Businesses. *Journal of Small Business Management*, 47(4), 443-464.
- Barney, J. B., & Arian, A. M. (2001). The resource-based view: Origins and implications. *The Blackwell handbook of strategic management*, 124-188.
- Barney, J. B., & Clark, D. N. (2007). *Resource-based theory: Creating and sustaining competitive advantage*. Oxford: Oxford University Press.
- Barney, J., Wright, M., & Ketchen, D. J. (2001). The resource-based view of the firm: Ten years after 1991. *Journal of management*, 27(6), 625-641.
- Barney, J.B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.

- Baron, R. M., & Kenny, D. a. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173–1182.
- Bartlett, J. E., Kotrlik, J. W., & Higgins, C. C. (2001). Organizational research: Determining appropriate sample size in survey research appropriate sample size in survey research. *Information Technology, Learning, and Performance Journal*, 19(1), 43-50.
- Barua, A., Sophie Lee, C. H., & Whinston, A. B. (1996). The calculus of reengineering. *Information Systems Research*, 7(4), 409-428.
- Bassellier, G., Benbasat, I., & Reich, B. H. (2003). The influence of business managers' IT competence on championing IT. *Information Systems Research*, 14(4), 317-336.
- Basu, A., Blavy, R. and Yulek, M. (2004). Microfinance in Africa: Experience and Lessons from Selected African Countries. *International Monetary Fund (IMF) Working Paper*, No. WP/04/174.
- Basu, R. (2014). Managing quality in projects: An empirical study. *International Journal of Project Management*, 32(1), 178-187.
- Bayazit, O. (2003). Total quality management (TQM) practices in Turkish manufacturing organizations. *The TQM Magazine*, 15(5), 345-350.
- Bayraktar, E., Tatoglu, E., & Zaim, S. (2008). An instrument for measuring the critical factors of TQM in Turkish higher education. *Total Quality Management*, 19(6), 551-574.
- Beck, T., & Demirguc-Kunt, A. (2006). Small and medium-size enterprises: Access to finance as a growth constraint. *Journal of Banking & Finance*, 30(11), 2931-2943.

- Beckford, J. (1998). *Quality: A Critical Introduction*. Routledge, London.
- Ben Abdelkader, I., Hathroubi, S., Jemaa, B., & Mekki, M. (2012). Microfinance Institutions' Efficiency in the MENA region: a Bootstrap-DEA approach.
- Bennett, J., Duncan, D., Rothmann, I., Zeitlyn, S., & Hill, G. (2010). *Evaluation of DFID Country Programmes: Yemen*. Department for International Development.
- Berman, S. L., Wicks, A. C., Kotha, S., & Jones, T. M. (1999). Does stakeholder orientation matter? The relationship between stakeholder management models and a firm financial performance. *Academy of Management Journal*, 42(5), 488-506.
- Beske, P. (2012). Dynamic capabilities and sustainable supply chain management. *International Journal of Physical Distribution & Logistics Management*, 42(4), 372-387.
- Bharadwaj, A. (2000). A resource-based perspective on information technology capability and firm performance: An empirical investigation. *MIS Quarterly*, 24, 169-196.
- Bharadwaj, S., Bharadwaj, A., & Bendoly, E. (2007). The performance effects of complementarities between information systems, marketing, manufacturing, and supply chain processes. *Information systems research*, 18(4), 437-453.
- Bhatt, G. D., & Grover, V. (2005). Types of Information Technology Capabilities and their role in competitive Advantage: An Empirical Study. *Journal of Management Information Systems*, 22(2), 253-277.
- Bhattacharjee, A. (2012). *Social Science Research: Principles, Methods, and Practices*. Textbooks Collection. Book 3. Retrieved from http://scholarcommons.usf.edu/oa_textbooks/3

- Bi, X., & Zhang, H. (2008). Empirical Research on Relationship between Information Technology Capability and Firm Performance: the Evidence from Listed Companies and Information Power 500 in China. Paper presented at the *International Conference on Computer Science and Software Engineering*, China.
- Black, J. A., & Boal, K. B. (1994). Strategic resources: Traits, configurations and paths to sustainable competitive advantage. *Strategic management journal*, 15(S2), 131-148.
- Boateng, G. O., Boateng, A. A., & Bampoe, H. S. (2015). Microfinance and Poverty Reduction in Ghana: Evidence from Policy Beneficiaries. *Review of Business & Finance Studies*, 6(1), 99-108.
- Bon, A. T., & Mustafa, E. (2013). Impact of Total Quality Management on Innovation in Service Organizations: Literature Review and New Conceptual Framework. *Procedia Engineering*, 53, 516-529.
- Boon, O. K., Arumugam, V., & Hwa, T. S. (2005). Does soft TQM predict employees' attributes? *The TQM Magazine*, 17(3), 279-289.
- Borges, M., Hoppen, N., & Luce, F. B. (2009). Information technology impact on market orientation in e-business. *Journal of Business Research*, 62(9), 883-890.
- Boso, N., Story, V. M., & Cadogan, J. W. (2013). Entrepreneurial orientation, market orientation, network ties, and performance: Study of entrepreneurial firms in a developing economy. *Journal of Business Venturing*, 28(6), 708-727.
- Bou-Llusar, J. C., Escrig-Tena, A. B., Roca-Puig, V., & Beltrán-Martín, I. (2009). An empirical assessment of the EFQM Excellence Model: Evaluation as a TQM framework relative to the MBNQA Model. *Journal of Operations Management*, 27(1), 1-22.

- Brah, S. A., & Lim, H. Y. (2006). The effects of technology and TQM on the performance of logistics companies. *International Journal of Physical Distribution & Logistics Management*, 36(3), 192-209.
- Brah, S. A., Wong, J. L., & Rao, B. M. (2000). TQM and business performance in the service sector: a Singaporean study. *International Journal of operations & Production Management*, 20(11), 1293-1312.
- Brandsma, J., & Burjorjee, D. (2004). *Microfinance in the Arab States: Building inclusive financial sectors*. United Nations Capital Development Fund, United States of America.
- Brau, J. C., & Woller, G. M. (2004). Microfinance: A comprehensive review of the existing literature. *Journal of Entrepreneurial Finance, JEF*, 9(1), 1-27.
- Brown, J., & Fraser, M. (2006). Approaches and perspectives in social and environmental accounting: an overview of the conceptual landscape. *Business Strategy and the Environment*, 15(2), 103-117.
- Budzier, A., & Flyvbjerg, B. (2011). Why Your IT Project Might Be Riskier than You Think. *Harvard Business Review*, 89(9), 23-25.
- Burjorjee, D. & Jennings, M. (2008). *Microfinance Gender Study: A Market Study of Women Entrepreneurs in Yemen*, Social Fund for Development, Sana'a.
- Burli, S. B., Kotturshettar, B. B., & Dalmia, R. V. (2012). Multiple Performance Measures: Six TQM Practices. *SCMS Journal of Indian Management*, 69-79.
- Retrieved September 2, 2013 from <http://www.scms.edu.in/jim/pdf/2012/SCMS%20Journal%20of%20Indian%20Management%20January%20-%20March%202012%20Issue.pdf#page=71>.

- Byrne, B. M. (2010). *Structural Equation Modeling with AMOS; Basic Concepts, Application and Programming* (2nd ed.). Routledge Taylor and Francis Group New York.
- Cano, C.R., Carrillat, F. A., & Jaramillo, F. (2004). A meta-analysis of the relationship between market orientation and business performance: evidence from five continents. *International Journal of research in Marketing*, 21(2), 179-200.
- Carbonell, P., & Rodríguez Escudero, A. I. (2010). The effect of market orientation on innovation speed and new product performance. *Journal of Business & Industrial Marketing*, 25(7), 501-513.
- Cavana, R. Y., Delahaye, B. L., & Sekaran, U. (2001). *Applied business research qualitative and quantitative methods* (p. 472). Milton: John Wiley.
- CGAP (2006). *Microfinance consensus guidelines: Good practice guidelines for funders of microfinance* (2nd ed). Washington, DC. Retrieved July 15, 2013 from <http://www.microfinancegateway.org/gm/document-1.9.2746/donorguidelines.pdf>
- CGAP (2013). What is microfinance?. Retrieved on July 30, 2013 from <http://www.microfinancegateway.org/p/site/m/template.rc/1.26.12263/>
- Chakravarty, A., Grewal, R., & Sambamurthy, V. (2013). Information technology competencies, organizational agility, and firm performance: Enabling and facilitating roles. *Information Systems Research*, 24(4), 976-997.
- Chandra, P. V. (2013). A Study on Implementation of Total Quality Management in Businesses. *International Journal of Engineering Science and Innovative Technology (IJESIT)*, 2(3).

- Chao, M. C. H., & Spillan, J. E. (2010). The journey from market orientation to firm performance: A comparative study of US and Taiwanese SMEs. *Management Research Review*, 33(5), 472-483.
- Chen, J. S., & Tsou, H. T. (2012). Performance effects of IT capability, service process innovation, and the mediating role of customer service. *Journal of Engineering and Technology Management*, 29(1), 71-94.
- Chenhall, R. H. (2005). Integrative strategic performance measurement systems, strategic alignment of manufacturing, learning and strategic outcomes: an exploratory study. *Accounting, Organizations and Society*, 30(5), 395-422.
- Chi, J., & Sun, L. (2015). IT and Competitive Advantage: A Study from Micro Perspective. *Modern Economy*, 6(03), 404.
- Chin, K. S., & Sofian, S. (2011). The Impact of human capital and total quality management on corporate performance: A review. *Interdisciplinary Journal of Contemporary Research in Business*, 3(3), 1091-1100.
- Chin, W. W. (1998a). The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.), *Modern Methods for Business Research* (pp. 295–358). Mahwah, NJ: Lawrence.
- Chin, W. W. (2010). *How to write up and report PLS analyses*. In: Vinzi, V.E., Chin, W. W., Henseler, J. & Wang, H. (Eds.), *Handbook of Partial Least Squares*, first ed. Springer, Berlin, pp. 655-690.
- Chin, W.W. (1998b). Issues and opinion on structural equation modeling. *MIS Quarterly*, 22(1), 7–16.
- Chong, V. K., & Rundus, M. J. (2004). Total quality management, market competition and organizational performance. *The British Accounting Review*, 36, 155-172.

- Christopher, I. F. (2010). Impact of Microfinance on Small and Medium-Sized Enterprises in Nigeria. In *International conference on Innovation and management*.
- Coakes, S. J. & Steed, L. G. (2003). *SPSS: analysis without anguish: version 11.0 for Windows*. Brisbane: Jacaranda Wiley.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Cohen, J. (1992). A power primer. *Psychological bulletin*, 112(1), 155.
- Combs, J. G., Crook, T. R., & Shook, C. L. (2005). The dimensionality of organizational performance and its implications for strategic management research. *Research methodology in strategy and management*, 2, 259-286.
- Conca, F. J., Llopis, J., & Tarí, J. J. (2004). Development of a measure to assess quality management in certified firms. *European journal of operational research*, 156(3), 683-697.
- Cooper, D. R. & Schindler, P. S. (2014). *Business Research Methods* (12th ed.). McGraw Hill.
- Corbett, L. M., & Rastrick, K. N. (2000). Quality performance and organizational culture: A New Zealand study. *International Journal of Quality & Reliability Management*, 17(1), 14-26.
- Cordier, C., Abdel Baki, R., & Khaled, M. (2010). 2009 Arab Microfinance Analysis & Benchmarking Report. *A report from Microfinance Information Exchange (MIX), Sanabel, and Consultative Group to Assist the Poor (CGAP)*. Retrieved July 16, 2012 from <http://www.cgap.org/sites/default/files/CGAP-MIX-Arab-Microfinance-Analysis-and-Benchmarking-Report-2009-%20May-2010.pdf>.

- Cosic, R., Shanks, G., & Maynard, S. (2012). Towards a business analytics capability maturity model. In *ACIS 2012: Location, location, location: Proceedings of the 23rd Australasian Conference on Information Systems 2012*(pp. 1-11). ACIS.
- Costa, M., & Lorente, A. R. (2008). Does quality management foster or hinder innovation? An empirical study of Spanish companies. *Total Quality Management, 19*(3), 209-221.
- Crabtree, A. D., & DeBusk, G. K. (2008). The effects of adopting the balanced scorecard on shareholder returns. *Advances in Accounting, 24*(1), 8-15.
- Criado, F., & Calvo-Mora, A. (2009). Excellence profiles in Spanish firms with quality management systems. *Total Quality Management, 20*(6), 655-679.
- Crosby, P. B. (1979). *Quality is free*. New York: Mc Graw Hill.
- Cull, R., Davis, L. E., Lamoreaux, N. R. and Rosenthal, J. (2006). Historical Financing of Small and Medium-size Enterprises." *Journal of Banking and Finance, 30*, 3017-3042.
- Cull, R., Demirgüç-Kunt, A., & Morduch, J. (2009). Microfinance meets the market. *Journal of Economic Perspectives, 23*(1), 167–192.
- D'Espallier, B., Hudon, M., & Szafarz, A. (2013). Unsubsidized microfinance institutions. *Economics Letters*.
- Daft, R. (1983). *Organization theory and design*. New York: West Publishing.
- Das, A., Paul, H., & Swierczek, F. W. (2008). Developing and validating total quality management (TQM) constructs in the context of Thailand's manufacturing industry. *Benchmarking: An International Journal, 15*(1), 52-72.
- Das, A., Ray, S.C., & Nag, A.(2009). Labor-use efficiency in Indian banking: A branch-level analysis. *Omega, 37*, 411- 425.

- Davenport, T. H. & Prusak, L. (2000). *Working knowledge: how organizations manage what they know*. Harvard Business School Press, Boston.
- Day, G. S. (1990). *Marketing Driven Strategy: Process For Creating Value*. New York, Free Press.
- Day, G. S. (1994). The capabilities of market-driven organizations. *The Journal of Marketing*, 37-52.
- Deming, W. E. (1986). *Out of the crisis* Cambridge. *Massachusetts: Massachusetts Institute of Technology*.
- Demirbag, M., Tatoglu, E., Tekinkus, M., & Zaim, S. (2006). An analysis of the relationship between TQM implementation and organizational performance: evidence from Turkish SMEs. *Journal of Manufacturing Technology Management*, 17(6), 829-847.
- Dervitsiotis, K. N. (2003). Beyond stakeholder satisfaction: aiming for a new frontier of sustainable stakeholder trust. *Total Quality Management and Business Excellence*, 14(5), 515-528.
- Deshpandé, R., Farley, J. U., & Webster Jr, F. E. (1993). Corporate culture, customer orientation, and innovativeness in Japanese firms: a quadrad analysis. *The journal of Marketing*, 75(1), 23-37.
- Douglas, T. J., & Judge, W. Q. (2001). Total quality management implementation and competitive advantage: the role of structural control and exploration. *Academy of Management Journal*, 44(1), 158-169.
- Dubey, R. (2015). An insight on soft TQM practices and their impact on cement manufacturing firm's performance: Does size of the cement manufacturing firm matter?. *Business Process Management Journal*, 21(1), 2-24.

- Durrani, M. K. K., Usman, A., Malik, M. I., & Ahmad, S. (2011). Role of Micro Finance in Reducing Poverty: A Look at Social and Economic Factors. *International Journal of Business and Social Science*, 2(21), 138-144.
- Dwairi, M., Bhuian, S.N., & Jurkus, A. (2007). Revisiting the pioneering market orientation model in an emerging economy. *European Journal of Marketing*, 41(7/8), 713-721.
- Economist Intelligence Unit (2013). Global microscope on the microfinance business environment 2013. Retrieved August 2, 2013 from http://www.citigroup.com/citi/citizen/community/data/EIU_Microfinance_2013_roof_08.pdf.
- Economou, V. P., & Chatzikonstantinou, P. G. (2009). Gaining Company's Sustained Competitive Advantage, Is Really a Necessary Precondition for Improved Organizational Performance? The Case of TQM. *European Research Studies Journal*, 12(3), 83-100.
- Ehigie, B. O., & McAndrew, E. B. (2005). Innovation, diffusion and adoption of total quality management (TQM). *Management Decision*, 43(6), 925-940.
- Ehtesham, U. M., Muhammad, T. M., & Muhammad, S. A. (2011). Relationship between Organizational Culture and Performance Management Practices: A Case of University in Pakistan. *Journal of Competitiveness*, 1(4), 78-86.
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: what are they? *Strategic management journal*, 21(10-11), 1105-1121.
- El Shafeey, T., & Trott, P. (2014). Resource-based competition: three schools of thought and thirteen criticisms. *European Business Review*, 26(2), 122-148.

- El Shenawy, E., Baker, T., & Lemak, D. J. (2007). A meta-analysis of the effect of TQM on competitive advantage. *International Journal of Quality & Reliability Management*, 24(5), 442-471.
- Elijah, O. A. (2007). *Effects of Economic Globalisation on Employment Trend and Wages in Developing Countries: Lessons from Nigeria Experiences* (No. 7433). Agecon Search.
- Ellis, P. D. (2006). Market Orientation and Performance: A Meta-Analysis and Cross-National Comparisons. *Journal of Management Studies*, 43(5), 1089-1107.
- Engelke, W. (2012). Joint Social and Economic Assessment: Republic of Yemen. Retrieved November 2, 2013 from <https://openknowledge.worldbank.org/bitstream/handle/10986/16169/730050BR10Quic0C0disclosed010010120.pdf?sequence=1>
- Falk, R. F., & Miller, N. B. (1992). *A primer for soft modeling*, Akron, OH, USA: The University of Akron Press.
- Fang, S. R., Chang, E., Ou, C. C., & Chou, C. H. (2014). Internal market orientation, market capabilities and learning orientation. *European Journal of Marketing*, 48(1/2), 170-192.
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41, 1149-1160.
- Feigenbaum, A. (1983). *Quality productivity and competitive position*. Cambridge, MA: Center for Advance Engineering study.
- Feigenbaum, A.V. (1991). *Total Quality Control*. McGraw-Hill, New York, NY.

- Felton, A. P. (1959). Making the marketing concept Work. *Harvard Business Review*, 37(4), 55-65.
- Fening, F. A., Amaria, P., & Frempong, E. O. (2013). Linkages between Total Quality Management and Organizational Survival in Manufacturing Companies in Ghana. *International Journal of Business and Social Science*, 4(10), 1-14.
- Finkelstein, S., & Hambrick, D. C. (1996). *Strategic Leadership: Top executives and their effects on organizations*. New York: West.
- Flynn, B.B., Schroeder, R.G., Sakakibara, S., (1994). A framework for quality management research and an associated measurement instrument. *Journal of Operations Management*, 11, 339–366.
- Foley, A., & Fahy, J. (2009). Seeing market orientation through a capabilities lens. *European Journal of Marketing*, 43(1/2), 13-20.
- Fornell, C. & Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- Fornell, C., & Cha, J. (1994). Partial least squares. *Advanced methods of marketing research*, 407, 52-78.
- Fotopoulos, C. V., & Psomas, E. L. (2010). The structural relationships between TQM factors and organizational performance. *The TQM Journal*, 22(5), 539-552.
- Freeman, R. E. (1984). *Strategic management: A stakeholder approach*, Boston: Pitman.
- Fryer, K.J., Antony, J. and Douglas, A., (2007). Critical success factors of continuous improvement in the public sector: a literature review and some key findings. *The TQM Magazine*, 19(5), 497-517.

- Galbreath, J. (2005). Which resources matter the most to firm success? An exploratory study of resource-based theory. *Technovation*, 25(9), 979-987.
- Gao, G. Y., Zhou, K. Z., & Yim, C. K. B. (2007). On what should firms focus in transitional economies? A study of the contingent value of strategic orientations in China. *International Journal of Research in Marketing*, 24(1), 3-15.
- Garengo, P., Biazzo, S., & Bititci, U. S. (2005). Performance measurement systems in SMEs: a review for a research agenda. *International journal of management reviews*, 7(1), 25-47.
- George, D., & Mallery, P. (2006). *SPSS for windows step by step: A simple guide and reference*. Allyn Bacon, Boston.
- Ghadiri, A., Bahari, M. D., Bafrani, F. A., Alami, M., Farzaneh, M., & Timachi, M. (2013). The survey of relationship between total quality management and financial performance. *Strategies*, 5(2).
- Ghalib, A. K., Malki, I., & Imai, K. S. (2011). The Impact of Microfinance and its Role in Easing Poverty of Rural Households: Estimations from Pakistan (No. DP2011-28). Retrieved May 23, 2012 from <http://www.rieb.kobe-u.ac.jp/academic/ra/dp/English/DP2011-28.pdf>
- Ghani, U., & Mahmood, Z. (2011). Factors influencing performance of microfinance firms in Pakistan: Focus on market orientation. *International Journal of Academic Research*, 3(5), 125-132.
- Gharakhani, D., Rahmati, H., Farrokhi, M. R., & Farahmandian, A. (2013). Total quality management and organizational performance. *American Journal of Industrial Engineering*, 1(3), 46-50.

- Ghobakhloo, M., Hong, T. S., Sabouri, M. S., & Zulkifli, N. (2012). Strategies for successful information technology adoption in small and medium-sized enterprises. *Information*, 3(1), 36-67.
- Ghosh, D., & Wu, A. (2012). The effect of positive and negative financial and nonfinancial performance measures on analysts' recommendations. *Behavioral Research in Accounting*, 24(2), 47-64.
- Gibb, J., & Haar, J. (2007). IT competency predicting market and development performance: Moderated by organizational size. In *Polytechnic University of Valencia, Proceedings of European and Mediterranean Conference on Information Systems (EMCIS2007)*, pp. 24-26.
- Goetsch, D. L., & Davis, S. B. (2010). *Quality management for organizational excellence*. Pearson.
- Goldman, A., & Grinstein, A. (2010). Stages in the development of market orientation publication activity: A longitudinal assessment. *European Journal of Marketing*, 44(9/10), 1384-1409.
- Goodhue, D., Lewis, W., & Thompson, R. (2006). PLS, small sample size, and statistical power in MIS research. In *System Sciences, 2006. HICSS'06. Proceedings of the 39th Annual Hawaii International Conference on* (Vol. 8, pp. 202b-202b). IEEE.
- Goodman, J., O'Brian, P., & Segal, E. (2000). Selling quality to the CFO. *Quality Progress*, 56.
- Gore Jr, E. W. (1999). Organizational culture, TQM, and business process reengineering: An empirical comparison. *Team performance management: an international journal*, 5(5), 164-170.

- Gorla, N., Somers, T. M., & Wong, B. (2010). Organizational impact of system quality, information quality, and service quality. *The Journal of Strategic Information Systems*, 19(3), 207-228.
- Gounaris, S. P. (2006). Internal-market orientation and its measurement. *Journal of business research*, 59(4), 432-448.
- Grameen Bank (2011). Grameen Bank at a glance. Retrieved May 6, 2013 from http://www.grameeninfo.org/index.php?option=com_content&task=view&i=26&Itemid=175.
- Grant, R. (1991). The resource-based theory of competitive advantage: implications for strategy formulation. *California Management Review*, 33, 114-135.
- Greener, S. (2008). *Business research methods*. BookBoon.
- Hackman, J. R., & Wageman, R. (1995). Total quality management: Empirical, conceptual, and practical issues. *Administrative science quarterly*, 309-342.
- Hair Jr, J. F., Black, W. C., Babin, B. J., & Andersen, R. E. (2010). *Multivariate data analysis* (7th ed). Upper Saddle River, NJ: Pearson Prentice Hall.
- Hair, J. F., Black, W. C., Babin, B. J., Andersen, R. E., & Tatham, R. (2006). *Multivariate data analysis* (6th ed). Upper Saddle River, N J: Pearson Prentice Hall.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Thousand Oaks: Sage Publications. Retrieved from <http://www.sagepub.com/books/Book237345>
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a Silver Bullet. *The Journal of Marketing Theory and Practice*, 19(2), 139–152.

- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Editorial Partial Least Squares Structural Equation Modeling: Rigorous Applications, Better Results and Higher Acceptance. *Long Range Planning*, 46, 1-12.
- Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science*, 40(3), 414-433.
- Hair, J., Money, A., Page, M., & Samouel, P. (2007). *Research Methods for Business*. USA: John Wiley and Sons.
- Hajipour, B., Rahimi, F., & Hooshmand, M. (2012). Market Orientation: Review and New Research Agenda. *Journal of Management Research*, 5(1), 92-111.
- Hamadu, D., Obaji, R., & Ogbojafor, B. (2011). Intelligence Information Generation, Dissemination, and Responsiveness in the Performance of Insurance Business in Nigeria. *Journal of Marketing Development and Competitiveness*, 5(7), 53-62.
- Hartarska, V. (2005). Governance and performance of microfinance institutions in Central and Eastern Europe and the newly independent states. *World development*, 33(10), 1627-1643.
- Hartarska, V. (2009). The impact of outside control in microfinance. *Managerial Finance*, 35(12), 975-989.
- Hartarska, V., & Nadolnyak, D. (2008). An impact analysis of microfinance in Bosnia and Herzegovina. *World Development*, 36(12), 2605-2619.
- Hasan, A. (2010). Assessing the Impact of IT Competency on Organizational Learning Capability of Indonesian Manufacturing Firms. *Jurnal Teknik Industri*, 12(2), pp-81.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.

- Hayes, A. F., & Preacher, K. J. (2014). Statistical mediation analysis with a multicategorical independent variable. *British Journal of Mathematical and Statistical Psychology*, 67(3), 451-470.
- Hayes, A. F., Preacher, K. J., & Myers, T. A. (2011). Mediation and the estimation of indirect effects in political communication research. *Sourcebook for political communication research: Methods, measures, and analytical techniques*, 434-465.
- Helfat, C., Finkelstein, S., Mitchell, W., Peteraf, M., Singh, H., Teece, D., & Winter, S. (2007). Dynamic capabilities: Understanding strategic change in organizations. *Malden M.A: Blackwell*.
- Helm, S., Eggert, A., & Garnefeld, I. (2010). Modeling the impact of corporate reputation on customer satisfaction and loyalty using partial least squares. In *Handbook of partial least squares* (pp. 515-534). Springer Berlin Heidelberg.
- Hemmatfar, M., Salehi, M., & Bayat, M. (2010). Competitive advantages and strategic information systems. *International Journal of Business and Management*, 5(7), 158.
- Henseler, J., & Fassott, G. (2010). Testing moderating effects in PLS path models: An illustration of available procedures. In *Handbook of partial least squares* (pp. 713-735). Springer Berlin Heidelberg.
- Henseler, J., & Sarstedt, M. (2013). Goodness-of-fit indices for partial least squares path modeling. *Computational Statistics*, 28(2), 565-580.
- Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The Use of Partial Least Squares Path Modeling in International Marketing. *Advances in International Marketing*, 20(1), 277-320.

- Hermes, N., Lensink, R., & Meesters, A. (2011), Outreach and efficiency of microfinance institutions. *World Development*, 39(6), 938–948.
- Heskett, J. L., Jones, T. O., Sasser Jr., W., & EarlSchlesinger, L. A. (1994). Putting the service-profit chain to work. *Harvard Business Review*, 72(2), 164.
- Hiatt, S. R. and Woodworth, W. P. (2006). Alleviating Poverty through Microfinance: Village Banking Outcomes in Central America. *The Social Science Journal*, 43, 471-477.
- Homaid, A. A., Minai, M. S., & Rahman, H. A. (2015). TQM and Performance Linkage in the Microfinance Institutions: The Mediating Role of IT Capability. *Asian Social Science*, 11(21), 213.
- Hooley, G. J., Greenley, G. E., Cadogan, J. W., & Fahy, J. (2005). The performance impact of marketing resources. *Journal of Business Research*, 58(1), 18-27.
- Hoopes, D. G., Madsen, T. L., & Walker, G. (2003). Guest editors' introduction to the special issue: why is there a resource-based view? Toward a theory of competitive heterogeneity. *Strategic Management Journal*, 24(10), 889-902.
- Houston, F. S. (1986). The marketing concept: what it is and what it is not. *The Journal of Marketing*, 81-87.
- Huang, C. Y. (2007). The Effect of Investment in Information Technology on the Performance of Firms in the Rubber Industry. *International Journal of Management*, 24(3).
- Hubbard, G. (2006). Sustainable organization performance: Towards a practical measurement system. *Monash Business Review*, 2(3), 1-19.
- Huhtala, J. P., Sihvonen, A., Frösén, J., Jaakkola, M., & Tikkanen, H. (2014). Market orientation, innovation capability and business performance: Insights from the global financial crisis. *Baltic journal of management*, 9(2), 134-152.

- Hunt, S. D., & Davis, D. F. (2012). Grounding Supply Chain Management in Resource-Advantage Theory: In Defense of a Resource-Based View of the Firm. *Journal of Supply Chain Management*, 48(2), 14-20.
- Iacobucci, D., Saldanha, N., & Deng, X. (2007). A meditation on mediation: Evidence that structural equations models perform better than regressions. *Journal of Consumer Psychology*, 17(2), 139-153.
- Idris, F. (2011). Total quality management (TQM) and sustainable company performances: Examining the relationship in Malaysian firms. *International Journal of Business and Society*, 12(1), 31-52.
- IFC (2007). *Assessment of MSE Financial Needs in Yemen Final Report December 2007*.
- In'airat, M. H., & Al-Kassem, A. H. (2014). Total Quality Management in Higher Education: A Review. *International Journal of Human Resource Studies*, 4(3), 294-307.
- Iqbal, T., Khan, B. A., Nadeem Talib, D., & Khan, N. (2012). TQM and Organization Performance: The Mediation and Moderation Fit. *Life Science Journal*, 9(4).
- Irani, Z., Beskese, A., & Love, P. E. D. (2004). Total quality management and corporate culture: constructs of organisational excellence. *Technovation*, 24(8), 643-650.
- Irfan, S. M., & Kee, D. M. H. (2013). Critical Success Factors of TQM and its Impact on Increased Service Quality: A Case from Service Sector of Pakistan. *Middle East Journal of Scientific Research*, 15(1).
- Ishikawa, K. (1985). *What is total quality control? The Japanese way*. New York, Englewood Cliffs: Prentice-Hall.

- Ivatury, G., & Pasricha, N. (2005). Funding Microfinance Technology. *CGAP, Donor Brief*, (23).
- Jaafreh, A. B., & Al-abadallat, A. Z. (2012). The Effect of Quality Management Practices on Organizational Performance in Jordan: An Empirical Study. *International Journal of Financial Research*, 4(1), p93.
- Jacobs, R., Mannion, R., Davies, H. T., Harrison, S., Konteh, F., & Walshe, K. (2013). The relationship between organizational culture and performance in acute hospitals. *Social Science & Medicine*, 76, 115-125.
- Jaworski, B. J., & Kohli, A. K. (1993). Market orientation: antecedents and consequences. *The Journal of marketing*, 53-70.
- Jegede, C., Kehinde, J., & Akinlabi, B. (2011). Impact of Microfinance on Poverty Alleviation in Nigeria: An Empirical Investigation. *European Journal of Humanities and Social Sciences*, 2(1), 97-111.
- Jiménez-Jiménez, D., Martínez-Costa, M., Martínez-Lorente, A. R., & Rabeh, H. A. D. (2015). Total quality management performance in multinational companies: A learning perspective. *The TQM Journal*, 27(3), 328-340.
- Jing, F. F., & Avery, G. C. (2008). Missing Links in Understanding the Relationship between Leadership and Organizational Performance. *International Business & Economics Research Journal*, 7(5), 67-78.
- Johannessen, J. A., Olaisen, J., & Olsen, B. (1999). Strategic Use of Information Technology for Increased Innovation and Performance. *Information Management and Computer Security* 7(1), 5–22.
- Jones, B., & Grimshaw, D. (2012). *Training and skills to improve innovation in firms*. Manchester.

- Jones, J. P., & Seraphim, D. (2008). TQM implementation and change management in an unfavourable environment. *Journal of Management Development*, 27(3), 291-306.
- Julian, C. C., Mohamad, O., Ahmed, Z. U., & Sefnedi, S. (2014). The market orientation–performance relationship: The empirical link in export ventures. *Thunderbird International Business Review*, 56(1), 97-110.
- Julian, C. C., Wangbenmad, C., Mohamad, O., & Ahmed, Z. U. (2013). The empirical link between market orientation, new product development and performance in export ventures. Retrieved December 7, 2014 from http://epubs.scu.edu.au/cgi/viewcontent.cgi?article=1715&context=bus_pubs.
- Juran, J. M. (1969). *Managerial breakthrough: A new concept of the manager's job*. New York, NY: McGraw-Hill.
- Juran, J. M. (1986). The quality trilogy. *Quality Progress*, 9(8), 19-24.
- Juran, J.M. (1988). *On planning For Quality*. London: Collier Macmillan.
- Jusoh, D., Ibrahim, N., & Zainuddin, Y. (2008). The performance consequence of multiple –performance measures Usage: Evidence from the Malaysian manufacturers. *International Journal of Productivity and Performance Management*, 57(2), 119-136.
- Kai, C., & Xiaofan, W. (2010). The Effects of Market Orientation on Performance in Property Service Industry. In *Management and Service Science (MASS), 2010 International Conference on* (pp. 1-4). IEEE.
- Kanji, G. K., & Barker, R. L. (1990). Implementation of total quality management. *Total Quality Management*, 1(3), 375-390.
- Kanji, G. K., & Wallace, W. (2000). Business excellence through customer satisfaction. *Total Quality Management*, 11(7), 979-998.

- Kaplan, R. S. (2008). Conceptual foundations of the balanced scorecard. *Handbooks of management accounting research*, 3, 1253-1269.
- Kaplan, R. S., & Norton, D. P. (2008). *The execution premium: linking strategy to operations for competitive advantage*. Harvard Business Press.
- Kaplan, R.S. & Norton, D.P. (1993). Putting the balanced scorecard to work. *Harvard Business Review*, 9(10), 134-47.
- Kaplan, R.S., & Norton, D.P. (1996). Using the Balanced Scorecard as a strategic management system. *Harvard Business Review*, 74(1), 75-85.
- Karia, N., & Asaari, M. H. A. H. (2006). The effects of total quality management practices on employees' work-related attitudes. *The TQM magazine*, 18(1), 30-43.
- Karimi Mazidi, A. R., Amini, A., & Latifi, M. (2014). The impact of information technology capability on firm performance; a focus on employeecustomer profit chain. *Iranian Journal of Management Studies*, 7(1), 95-120.
- Kariuki, B. M., & Mburu, D. K. (2013). Role of Lean Manufacturing on Organization Competitiveness. *Industrial Engineering Letters*, 3(10), 81-91.
- Karuppusami, G., & Gandhinathan, R. (2006). Pareto analysis of critical success factors of total quality management: A literature review and analysis. *The TQM magazine*, 18(4), 372-385.
- Kato, M. P., & Kratzer, J (2013). Empowering Women through Microfinance: Evidence from Tanzania. *Journal of Entrepreneurship Perspectives*, 2(1), 31-59.
- Kaur, P., & Sharma, S. K. (2014). Evaluating the Relationship and Influence of Critical Success Factors of TQM on Business Performance: Evidence from SMEs of Manufacturing Sector. *IUP Journal of Operations Management*, 13(4), 17.

- Kaynak, H. (2003). The relationship between total quality management practices and their effects on firm performance. *Journal of Operations Management*, 21, 405-435.
- Keelson, S. A. (2014). The moderating role of organizational capabilities and internal marketing in market orientation and business success. *Review of Business & Finance Studies*, 5(1), 1-17.
- Khaled, M. (2011). Building a Successful Business Model for Islamic Microfinance. In *Global Microcredit Summit Commissioned Workshop Paper*.
- Khan, R. E. A., & Noreen, S. (2012). Microfinance and women empowerment: A case study of District Bahawalpur (Pakistan). *African Journal of Business Management*, 6(12), 4514–4521.
- Khanam, S., Siddiqui, J. & Talib, F. (2013). Role of Information Technology in Total Quality Management: A Literature Review. *International Journal of Advanced Research in Computer Engineering and Technology*, 2(8), 2433-2445.
- Khanna, H. K., Sharma, D. D., & Laroiya, S. C. (2011). Identifying and ranking critical success factors for implementation of total quality management in the Indian manufacturing industry using TOPSIS. *Asian Journal on Quality*, 12(1), 124-138.
- Khavul, S. (2010). Microfinance: creating opportunities for the poor?. *The Academy of Management Perspectives*, 24(3), 58-72.
- Kim, G., Shin, B., Kim, K. K., & Lee, H. G. (2011). IT capabilities, process-oriented dynamic capabilities, and firm financial performance. *Journal of the Association for Information Systems*, 12(7), 487-517.
- Kinde, B. A. (2012). Financial Sustainability of Microfinance Institutions (MFIs) in Ethiopia. *European Journal of Business and Management*, 4(15), 1-10.

- Kipasha, E. F. (2013). Performance of Microfinance Institutions in Tanzania: Integrating Financial and Non-financial Metrics. *European Journal of Business and Management*, 5(4), 94-105.
- Kirby, J. (2005). Toward a theory of high performance. *Harvard business review*, 83(7), 30.
- Kirca, A. H., Jayachandran, S., & Bearden, W. (2005). Market orientation: a meta-analytic review and assessment of its antecedents and impact on performance. *Journal of Marketing*, 69(2), 24-41.
- Klefsjö, B., Bergquist, B., & Garvare, R. (2008). Quality management and business excellence, customers and stakeholders: Do we agree on what we are talking about, and does it matter? *The TQM Journal*, 20(2), 120-129.
- Kline, R. B. (1998). *Principles and Practice of Structural Equation Modeling*. New York: The Guilford Press.
- Kmieciak, R., Michna, A., & Meczynska, A. (2012). Innovativeness, empowerment and IT capability: evidence from SMEs. *Industrial Management & Data Systems*, 112(5), 707-728.
- Kober, R., Subraamanniam, T., & Watson, J. (2012). The impact of total quality management adoption on small and medium enterprises' financial performance. *Accounting & Finance*, 52(2), 421-438.
- Kohli, A. K., & Jaworski, B. J. (1990). Market orientation: the construct, research propositions, and managerial implications. *The Journal of Marketing*, 54(2), 1-18.
- Kohli, A. K., Jaworski, B. J., & Kumar, A. (1993). MARKOR: A measure of market orientation. *Journal of Marketing Research (JMR)*, 30(4), 467-477.

- Koveos, P., & Randhawa, D. (2004). Financial services for the poor: assessing microfinance institutions. *Managerial Finance*, 30(9), 70-95.
- Kraaijenbrink, J., Spender, J. C., & Groen, A. J. (2010). The resource-based view: a review and assessment of its critiques. *Journal of management*, 36(1), 349-372.
- Kumar, V., Choisine, F., de Grosbois, D., & Kumar, U. (2009). Impact of TQM on company's performance. *International journal of quality & reliability management*, 26(1), 23-37.
- Kumar, V., Jones, E., Venkatesan, R., & Leone, R. P. (2011). Is market orientation a source of sustainable competitive advantage or simply the cost of competing?. *Journal of Marketing*, 75(1), 16-30.
- Kyereboah-Coleman, A., & Osei, K. A. (2008). Outreach and profitability of microfinance institutions: the role of governance. *Journal of Economic Studies*, 35(3), 236-248.
- Lafourcade, A. L., Isern, J., Mwangi, P., & Brown, M. (2005). Overview of the outreach and financial performance of microfinance institutions in Africa. *Microfinance Information Exchange, Washington, DC*.
- Lakshman, C. (2006). A theory of leadership for quality: Lessons from TQM for leadership theory 1. *Total Quality Management & Business Excellence*, 17(1), 41-60.
- Lam, S. Y., Lee, V. H., Ooi, K. B., & Lin, B. (2011). The relationship between TQM, learning orientation and market performance in service organizations: An empirical analysis. *Total Quality Management & Business Excellence*, 22(12), 1277-1297.
- Lanao-Flores, I. & Serres, P. (2009). Microfinance and non-financial services: An impossible marriage?. *Private Sector Development*, 3(3), 1-6.

- Ledgerwood, J. (1999). *Microfinance handbook: An institutional and financial perspective*. The World Bank publications, USA.
- Ledgerwood, J., Earne, J., & Nelson, C. (Eds.). (2013). *The New Microfinance Handbook: A Financial Market System Perspective*. World Bank Publications.
- Lewis, B. R., Templeton, G. F., & Byrd, T. A. (2005). A methodology for construct development in MIS research. *European Journal of Information Systems*, 14(4), 388-400.
- Li, E. Y., Chen, J. S., & Huang, Y. H. (2006). A framework for investigating the impact of IT capability and organizational capability on firm performance in the late industrializing context. *International Journal of Technology Management*, 36(1), 209-229.
- Liang, T. P., You, J. J., & Liu, C. C. (2010). A resource-based perspective on information technology and firm performance: a meta-analysis. *Industrial Management & Data Systems*, 110(8), 1138-1158.
- Liao, S.H., Chang, W. J., Wu, C. C. & Katrichis, J.M. (2011). A survey of market orientation research (1995-2008). *Industrial Marketing Management*, 40, 301310.
- Lim, S., & Trimi, S. (2014). Impact of Information Technology Infrastructure Flexibility on the Competitive Advantage of Small and Medium Sized-Enterprises. *Journal of Business and Management*, 3(1), 1-12.
- Lin, B. W. (2007). Information technology capability and value creation: Evidence from the US banking industry. *Technology in Society*, 29(1), 93-106.

- Liu, P., Zhao, R. Y., Wang, W. L., & Xiao, J. (2013). Information technology capability and firm performance: A meta-analysis. In *Service Systems and Service Management (ICSSSM), 2013 10th International Conference on* (pp. 719-724). IEEE.
- Liu, Y., Lu, H., & Hu, J. (2008). IT capability as moderator between IT investment and firm performance. *Tsinghua Science & Technology*, 13(3), 329-336.
- Logotri (2006). Building Sustainable Microfinance System: A Growth Catalyst for the Poor. *Local Government Training and Research Institute, Society for Development Studies*.
- Lu, Y., Zhou, L., Bruton, G., & Li, W. (2010). Capabilities as a mediator linking resources and the international performance of entrepreneurial firms in an emerging economy. *Journal of International Business Studies*, 41(3), 419-436.
- Lützenkirchen, C., Weistroffer, C., & Speyer, B. (2012). *Microfinance in evolution. An industry between crisis and advancement*. Deutsche Bank Research.
- MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the product and resampling methods. *Multivariate behavioral research*, 39(1), 99-128.
- Maddocks, W. O. (2011). How Can Microfinance Programs Help the Struggle Against Social Problems Such as Begging, Child Labor, Prostitution, Violence Against Women, Criminality, Gangs, and Drug Addiction?. *2011 Global Microcredit Summit Commissioned Workshop Paper November 14-17, 2011 – Valladolid, Spain*.

- Mahmoud, M. A., & Yusif, B. (2012). Market orientation, learning orientation, and the performance of nonprofit organizations (NPOs). *International Journal of Productivity and Performance Management*, 61(6), 624-652.
- Mahmoud, M.A., Kastner, A., & Akyea, K. (2011). Market orientation as a competitive tool: empirical evidence from 'quartile one' banks in Ghana. *Journal of Financial Services Marketing*, 16 (3/4), 316-34.
- Mahmud, N., & Hilmi, M. F. (2014). TQM and Malaysian SMEs performance: The mediating roles of organization learning. *Procedia-Social and Behavioral Sciences*, 130, 216-225.
- Makambe, U. (2015). Perspectives on Knowledge Management: A Literature Review. In *Information and Knowledge Management*, 5(1), 88-97.
- Malhotra, N. K., Hall, J., Shaw, M. & Oppenheim, P. (2006). *Marketing research: An applied orientation* (3rd ed.). Frenchs Forest: Prentice Hall.
- Mansour, K. (2011). *Small and Micro Enterprises Development in Yemen and Future Prospects*. Social Fund for Development, annual report, 2011.
- Martín-Castilla, J. I., & Rodríguez-Ruiz, Ó. (2008). EFQM model: knowledge governance and competitive advantage. *Journal of Intellectual Capital*, 9(1), 133-156.
- Mata, F. J., Fuerst, W. L., & Barney, J. B. (1995). Information technology and sustained competitive advantage: A resource-based analysis. *MIS quarterly*, 487-505.
- Matsuno, K., Mentzer, J. T., & Rentz, J. O. (2005). A conceptual and empirical comparison of three market orientation scales. *Journal of Business Research*, 58(1), 1-8.

- McNamara, C. (1972). The present status of the marketing concept. *Journal of Marketing*, 36(1): 50-57.
- Meftah Abusa, F., & Gibson, P. (2013). Experiences of TQM elements on organisational performance and future opportunities for a developing country. *International Journal of Quality & Reliability Management*, 30(9), 920-941.
- Mehmood, S., Qadeer, F., & Ahmed, A. (2014). Relationship between TQM Dimensions and Organizational Performance. *Pakistan Journal of Commerce and Social Sciences*, 8(3), 662-679.
- Mehra, S., & Ranganathan, S. (2008). Implementing total quality management with a focus on enhancing customer satisfaction. *International Journal of Quality & Reliability Management*, 25(9), 913- 927.
- Melville, N., Kraemer, K., & Gurbaxani, V. (2004). Review: Information technology and organizational performance: An integrative model of IT business value. *MIS quarterly*, 28(2), 283-322.
- Mersland, R. and Strøm, R. Ø (2014). *Microfinance Institutions: Financial and Social Performance*. Palgrave Macmillan.
- Michelli, J. (2008). *The New Gold Standard: 5 Leadership Principles for Creating a Legendary Customer Experience Courtesy at the Ritz Carlton Hotel Company*. New York: McGraw-Hill.
- Milgrom, P., & Roberts, J. (1995). Complementarities and fit strategy, structure, and organizational change in manufacturing. *Journal of accounting and economics*, 19(2), 179-208.
- Mills, J., Platts, K., & Bourne, M. (2003). Applying resource-based theory: Methods, outcomes and utility for managers. *International Journal of Operations & Production Management*, 23(2), 148-166.

- Ministry of Planning and International Cooperation (MOPIC). (2004). Policies and programs of development for small and medium enterprises in the Republic of Yemen. Retrieved March 22, 2013 from http://www.mpicyemen.org/2006/nhdr/arabic/nhdr_rp/nhdr/nhdr4.pdf.
- Minoja, M. (2012). Stakeholder Management Theory, Firm Strategy, and Ambidexterity. *Journal of Business Ethics*, 109(1), 67-82.
- Mitra, A. (1987). *Fundamentals of Quality Control and Improvement*. Prentice-Hall, Englewood.
- Morgan, N. A., Vorhies, D. W., & Mason, C. H. (2009). Market orientation, marketing capabilities, and firm performance. *Strategic Management Journal*, 30(8), 909-920.
- Morgan, R. E., & Berthon, P. (2008). Market Orientation, Generative Learning, Innovation Strategy and Business Performance Inter-Relationships in Bioscience Firms. *Journal of Management Studies*, 45(8), 1329-1353.
- Motwani, J. (2001). Measuring critical factors of TQM. *Measuring Business Excellence*, 5(2), 27-30.
- Mueller, F. (1996). Human Resources as Strategic Assets: An Evolutionary Resource-Based Theory. *Journal of Management studies*, 33(6), 757-785.
- Munizu, M. (2013). The Impact of Total Quality Management Practices towards Competitive Advantage and Organizational Performance: Case of Fishery Industry in South Sulawesi Province of Indonesia. *Pakistan Journal of Commerce & Social Sciences*, 7(1).
- Murphy, G. B., Trailer, J. W., & Hill, R. C. (1996). Measuring performance in entrepreneurship research. *Journal of business research*, 36(1), 15-23.

- Murray, J. Y., Gao, G. Y., & Kotabe, M. (2011). Market orientation and performance of export ventures: the process through marketing capabilities and competitive advantages. *Journal of the Academy of Marketing Science*, 39(2), 252-269.
- Mustafa, A. K., & Saat, M. M. (2013). Performance Measurement Characteristics: A new set for Microfinance Institutions. *Interdisciplinary Journal of Contemporary Research in Business*, 4(10).
- Mustafa, E. M., & Bon, A. T. (2013). Validating Measurement Model for Total Quality Management Constructs on Optimization of Service Organizations using Confirmatory Factor Analysis. *International economics*, 7(8), 13.
- Nair, A. (2006). Meta-analysis of the relationship between quality management practices and firm performance-implications for quality management theory development. *Journal of Operations Management*, 24, 948-975.
- Najeh, R.I., & Kara-Zaitri, C. (2007). A comparative study of critical quality factors in Malaysia, Palestine, Saudi Arabia, Kuwait and Libya. *Total Quality Management & Business Excellence*, 18,189–200.
- Nanayakkara, G., & Iselin, E. R. (2012). An Exploratory Study of the Performance of Microfinancing Institutions Using the Balanced Scorecard Approach. *International Journal of Business and Information*, 7 (2).
- Narver, J. C., & Slater, S. F. (1990). The effect of a market orientation on business profitability. *The Journal of Marketing*, 20-35.
- Neely, A. (1999). The performance measurement revolution: Why now and what next?. *International Journal of Operations and Production Management*, 19(2), 205-228.

- Neely, A. D., Adams, C., & Kennerley, M. (2002). *The Performance Prism: The scorecard for measuring and managing business success*: Financial Times Prentice Hall London. Retrieved June 3, 2012 from <http://210.55.20.100/news/Events/Tertiary%20Services%20Conference/Tertiary%20Conference/PDF's/2009/General%20Papers/NM%20Performance%2520Prism.pdf>
- New Economy Magazine (2013). *Yemen Microfinance Model*. Retrieved July 14, 2013 from <http://www.theneweconomy.com/strategy/yemeni-microfinance-models>.
- Ngo, L. V., & O'Cass, A. (2012). In Search of Innovation and Customer-related Performance Superiority: The Role of Market Orientation, Marketing Capability, and Innovation Capability Interactions. *Journal of Product Innovation Management*, 29(5), 861-877.
- Nitin, S., Dinesh, K., Paul, S. T., & Sahib, F. (2010). TQM for manufacturing excellence: Factors critical to success. *International Journal of Applied Engineering Research*, Dindigul 2(1). Retrieved May 15, 2013 from <http://185.53.130.48/jarvol1no12010/voltwo/EIJAER2224.pdf>
- Noor, N. A. M., & Kumar, D. (2014). ECO Friendly 'Activities' VS ECO Friendly 'Attitude': Travelers Intention to Choose Green Hotels in Malaysia. *World Applied Sciences Journal*, 30(4), 506-513.
- O'brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality & Quantity*, 41(5), 673-690.
- Oaklands, J. (1993). *Total Quality Management: The Route to Improving Performance*. Oxford.

- Oehri, O., Fausch, J., & Liechtenstein, H. (2008). Microfinance Investment Funds— Analysis of Portfolio Impact. In *University of Liechtenstein, Gevena papers on inclusiveness, World Microfinance Forum, Geneva*.
- Ogunnaike, O. O., Akinbode, M., & Onochie, P. (2014). Structural Equation Modeling of Market Orientation and Staff Loyalty in Education Marketing. *Information and Knowledge Management*, 4(6), 20-27.
- Ong, C. S., & Chen, P. (2013). Information technology capability-enabled performance, future performance, and value. *Industrial Management & Data Systems*, 113(5), 669-682.
- Osarenkhoe, A. (2008). What characterises the culture of a market-oriented organisation applying a customer-intimacy philosophy & quest. *Journal of Database Marketing & Customer Strategy Management*, 15(3), 169-190.
- Owen, D. (2006). Emerging issues in sustainability reporting. *Business Strategy and the Environment*, 15(4), 217-218.
- Pakdel, N., & Monroy, C. R. (2010). Microfinance in MENA region: a partial success. In *4th International Conference on Industrial Engineering and Industrial Management* (pp. 422-431).
- Pallant, J. (2005). *SPSS survival manual: a step by step guide to data analysis using SPSS for windows* (2nd ed.). Maidenhead: Open University Press.
- Pavlou, P. A. & Fygenon, M. (2006). Understanding and predicting electronic commerce adoption: An extension of the theory of planned behavior. *Management Information Systems Quarterly*, 30(1), 115-143

- Pebrianto, A. (2013). The Influence of Information Technology Capability, Organizational Learning, and Knowledge Management Capability on Organizational Performance (A Study of Banking Branches Company in Southern Kalimantan Province). In *Information and Knowledge Management*, 3(11), 112-120.
- Penrose, E. (2009). *The Theory of the Growth of the Firm*. Oxford University Press.
- Perdomo-Ortiz, J., Gonzalez-Benito, J., & Galende, J. (2006). Total quality management as a forerunner of business innovation capability. *Technovation*, 26, 1170–1185.
- Pérez-Aróstegui, M. N., Bustinza-Sánchez, F., & Barrales-Molina, V. (2015). Exploring the relationship between information technology competence and quality management. *BRQ Business Research Quarterly*, 18(1), 4-17.
- Pérez-López, S., & Alegre, J. (2012). Information technology competency, knowledge processes and firm performance. *Industrial Management & Data Systems*, 112(4), 644-662.
- Pérez-López, S., & Junquera, B. (2013). The relation between IT competency and knowledge management processes and its mediators. *Tourism & Management Studies*, 9(1), 109-115.
- Peschel, D. (2008). Total quality management and the Malcolm Baldrige National Quality Award: Benefits and directions for banking institutions. *Business Renaissance*, 3(4), 49-66.
- Pesic, M. A. (2007). Six Sigma Philosophy Aand Resource-Based Theory of Competitiveness: An Integrative Approach. *Economics and Organization*, 4(2), 199–208.

- Peterson, R. A., & Kim, Y. (2013). On the relationship between coefficient alpha and composite reliability. *Journal of Applied Psychology*, 98, 194–198.
- Powell, T. C. (1995). Total quality management as competitive advantage: A review and empirical study. *Strategic Management Journal*, 16(1), 15-37.
- Prajogo, D. I., & Hong, S. W. (2008). The effect of TQM on performance in R&D environments: A perspective from South Korean firms. *Technovation*, 28(12), 855–863.
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, and Computers*, 36, 717-731.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in simple and multiple mediator models. *Behavior Research Methods*, 40, 879-891.
- Priem, R. L., & Butler, J. E. (2001). Is the resource-based “view” a useful perspective for strategic management research?. *Academy of management review*, 26(1), 22-40.
- Protcko, E., & Dornberger, U. (2014). The impact of market orientation on business performance—the case of Tatarstan knowledge-intensive companies (Russia). *Problems and Perspectives in Management*, 12(4), 225-231.
- Pryor, M. G., Toombs, L., Anderson, D., & White, J. C. (2010). What management and quality theories are best for small businesses. *Journal of Management and Marketing Research*, 3(1), 1-12.

- Qu, R. (2013). Market Orientation and Organizational Performance Linkage in Chinese Hotels: The Mediating Roles of Corporate Social Responsibility and Customer Satisfaction. *Asia Pacific Journal of Tourism Research*, (ahead-of-print), 1-18.
- Rai, A. (2012). The Role and Impact of Information and Communication Technologies (ICT) in Microfinance. *International Journal of Management and Strategy*, 3(4), 1-11.
- Rai, A., Patnayakuni, R., & Seth, N. (2006). Firm performance impacts of digitally enabled supply chain integration capabilities. *MIS Quarterly*, 30(2), 225-246.
- Raju, P. S., Lonial, S. C., & Crum, M. D. (2011). Market orientation in the context of SMEs: A conceptual framework. *Journal of Business Research*, 64(12), 1320-1326.
- Rao, M. (2005). Micro-Finance and ICTs: Exploring Mutual Benefits and Synergy. Retrieved May 29, 2013 from http://www.amic.org.sg/Resources/Research_Materials/Media_and_Millennial_Development_Goals/Microfinance%20and%20ICTs%20Exploring%20Mutual%20Benefits%20and%20Synergy.pdf
- Ravichandran, T., & Lertwongsatien, C., (2005). Effect of information systems resources and capabilities on firm performance: a resource-based perspective. *Journal of management information systems*, 21(4), 237-276.
- Ray, G., Muhanna, W. A., & Barney, J. B. (2005). Information technology and the performance of the customer service process: A resource-based analysis. *MIS Quarterly*, 625-652.

- Reinartz, W. J., Heinlein, M., & Henseler, J. (2009). An empirical comparison of the efficacy of covariance based and variance based SEM. *International Journal of Research in Marketing*, 26(4), 332-344.
- Richard, P. J., Devinney, T. M., Yip, G. S., & Johnson, G. (2009). Measuring organizational performance: Towards methodological best practice. *Journal of management*, 35(3), 718-804.
- Ringim, K. J., Razalli, M. R., & Hasnan, N. (2012). Moderating effect of Information technology (IT) capability on the relationship between business process reengineering factors and organizational performance of Bank. *African Journal of Business Management*, 6(16), 5551-5567.
- Ringle, Christian M., Wende, Sven, & Becker, Jan-Michael. (2014). SmartPLS 3.0 Hamburg: SmartPLS. Retrieved August 13, 2014 from <http://www.smartpls.com>
- Robinson, M. S. (1995). *Introducing Savings Mobilization in Microfinance: When and How?*. Microfinance Network, Cavite, Philippines, and HIID, USA.
- Rohaizan, R., & Tan, P. Y. (2011). The Practices of TQM Among MS: ISO 9000 Certified Company. *3rd International Conference on Information and Financial Engineering IPEDR*, 12: IACSIT Press, Singapore.
- Rojas-Méndez, J. I., & Rod, M. (2013). Chilean wine producer market orientation: comparing MKTOR versus MARKOR. *International Journal of Wine Business Research*, 25(1), 27-49.
- Ross, J., Beath, C., & Goodhue, D. (1996). Develop long-term competitiveness through information technology assets. *Sloan Management Review*, 38(1), 31-42.

- Roy, A., & Goswami, C. (2013). A scientometric analysis of literature on performance assessment of microfinance institutions (1995-2010). *International Journal of Commerce and Management*, 23(2), 148-174.
- Rubin, P. H. (1973). The expansion of firms. *The Journal of Political Economy*, 936-949.
- Ruekert, R. W. (1992). Developing a market orientation: an organizational strategy perspective. *International journal of research in marketing*, 9(3), 225-245.
- Sadikoglu, E., & Olcay, H. (2014). The Effects of Total Quality Management Practices on Performance and the Reasons of and the Barriers to TQM Practices in Turkey. *Advances in Decision Sciences*, 2014.
- Šafránková, M., & Srnec, K. (2010). Providing of microcredits requires a specific approach of microfinance institutions. *Agricultura Tropica et Subtropica*, 43, 4.
- Said, J., Hui, W. S., Taylor, D., & Othman, R. (2009). Customer-Focused Strategies and Information Technology Capabilities: For Service Quality of Malaysian Local Authorities. *International Review of Business Research Papers*, 5(3), 241-256.
- Salaheldin, S. I. (2009). Critical success factors for TQM implementation and their impact on performance of SMEs. *International journal of productivity and performance management*, 58(3), 215-237.
- Sánchez-Rodríguez, C., & Martínez-Lorente, A. R. (2011). Effect of IT and quality management on performance. *Industrial Management & Data Systems*, 111(6), 830-848.
- Saraph, J. V., Benson, P. G., & Schroeder, R. G. (1989). An instrument for measuring the critical factors of quality management. *Decision Sciences*, 20 (4), 810-828.

- Saravanan, R., & Rao, K. S. P. (2006). Development and validation of an instrument for measuring total quality service. *Total Quality Management & Business Excellence*, 17(6), 733-749.
- Sassenberg, K., Matschke, C., & Scholl, A. (2011). The impact of discrepancies from ingroup norms on group members' well-being and motivation. *European Journal of Social Psychology*, 41(7), 886-897.
- Savescu, F. (2011). The Role of Marketing in Microcredit Institutions. *Review of Management & Economic Engineering*, 10(2).
- Sayeda, B., Rajendran, C., & Lokachari, P. S. (2010). An empirical study of total quality management in engineering educational institutions of India: perspective of management. *Benchmarking: An International Journal*, 17(5), 728-767.
- Schneiderman, A. M. (1999). Why balanced scorecards fail. *Journal of Strategic Performance Measurement*, 2(S 6), 11.
- Sekaran, U. (2003). *Research methods for business: A skill building approach* (4th ed.). New York: John Wiley & Sons, Inc
- Sekaran, U., & Bougie, R. (2010). *Research methods for business* (5th ed.). UK: John Wiley & Sons Ltd.
- Shao, Z., Feng, Y., Hu, Q., & Liu, Y. (2009). A conceptual model for studying the influence of charismatic leadership on ERP implementation lifecycle. In *System Sciences, 2009. HICSS'09. 42nd Hawaii International Conference on* (pp. 1-9). IEEE.
- Shin, S. (2012). Decomposed approach of market orientation and marketing mix capability: Research on their relationships with firm performance in the Korean context. *International Business Research*, 5(1), p22.

- Shin, S., & Aiken, K. D. (2012). The mediating role of marketing capability: evidence from Korean companies. *Asia Pacific Journal of Marketing and Logistics*, 24(4), 658-677.
- Shoham, A., Rose, G. M., & Kropp, F. (2005). Market orientation and performance: a meta-analysis. *Marketing Intelligence & Planning*, 23(5), 435-454.
- Shoham, A., Ruvio, A., Vigoda-Gadot, E., & Schwabsky, N. (2006). Market orientations in the nonprofit and voluntary sector: A meta-analysis of their relationships with organizational performance. *Nonprofit and Voluntary Sector Quarterly*, 35(3), 453-476.
- Sila, I., & Ebrahimpour, M. (2002). An investigation of the total quality management survey based research published between 1989 and 2000: A literature review. *International journal of Quality and Reliability Management*, 19(7), 902-970.
- Sila, I., & Ebrahimpour, M. (2005). Critical linkages among TQM factors and business results. *International journal of operations & production management*, 25(11), 1123-1155.
- Sin, L. Y. M., Tse, A. C. B., Yau, O. H. M., Chow, R., & Lee, J. S. Y. (2003). Market profitability in small industrial firms. *Journal of Marketing Theory Practice*, 5(3), 55-76.
- Sin, L. Y., Tse, A. C., Heung, V., & Yim, F. H. (2005). An analysis of the relationship between market orientation and business performance in the hotel industry. *International Journal of Hospitality Management*, 24(4), 555-577.
- Sinclair, D. & Zairi, M. (2000). Performance Measurement: A Critical Analysis of the Literature With Respect to Total Quality Management. *International Journal of Management Reviews*, 2(2), 145-168.

- Singh, A. K., & Sushil. (2013). Modeling enablers of TQM to improve airline performance. *International Journal of Productivity and Performance Management*, 62(3), 250-275.
- Singh, S. (2009). How market orientation and outsourcing create capability and impact business performance. *Thunderbird International Business review*, 51(5), 457-471.
- Singla, N., Khanduja, D., & Singh, T. P. (2011). TQM for manufacturing excellence: Factors critical to success. *International Journal of Applied Engineering Research, Dindigul*, 2(1), 219-233.
- Sit, W. Y., Ooi, K. B., Lin, B., & Yee-Loong Chong, A. (2009). TQM and customer satisfaction in Malaysia's service sector. *Industrial Management & Data Systems*, 109(7), 957-975.
- Slater SF & Narver JC (1993). Product-market strategy and performance: An analysis of the Miles and Snow strategy types. *European Journal of Marketing*, 27 (10), 33-51.
- Slater, S. F., & Narver, J. C. (1995). Market orientation and the learning organization. *The Journal of Marketing*, 63-74.
- Slater, S. F., Olson, E. M., & Hult, G. T. M. (2006). The moderating influence of strategic orientation on the strategy formation capability–performance relationship. *Strategic Management Journal*, 27(12), 1221-1231.
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. *Sociological methodology*, 13(1982), 290-312.

- Social Fund For Development (2010). *DFID Yemen Social Fund for Development - Impact Evaluation final report*. Retrieved from <http://www.sfd-yemen.org/uploads/issues/2010%20Impact%20Evaluation%20Report-20120924-113801.pdf>
- Sohani, N., & Sohani, N. (2012). Developing interpretive structural model for quality framework in higher education: Indian context. *Journal of Engineering, Science and Management Education*, 5(2), 495-501.
- Sokro, E. (2012). Analysis of the relationship that exists between organisational culture, motivation and performance. *Analysis*, 3, 106.
- Stangor, C. (2014). *Research methods for the behavioral sciences*. Cengage Learning.
- StataCorp, L. (2013). Stata multivariate statistics reference manual. *Release*. Retrieved Februray 4, 2013 from <http://www.stata.com/manuals13/mv.pdf>.
- Steurer, R. (2006). Mapping stakeholder theory anew: from the 'stakeholder theory of the firm' to three perspectives on business–society relations. *Business Strategy and the Environment*, 15(1), 55-69.
- Strategic Vision 2025. Yemen's Strategic Vision 2025. Retrieved January 3, 2013 from <http://www.yemenwater.org/wp-content/uploads/2013/06/Vision2025.pdf>
- Straub, D., Boudreau, M. C., & Gefen, D. (2004). Validation guidelines for IS positivist research. *The Communications of the Association for Information Systems*, 13(1), 63.
- Suppiah, V. & Sandhu, M. S. (2011). Organisational Culture's Influence on Tacit Knowledge-sharing Behaviour. *Journal of Knowledge Management*, 15 (3), 462-477.

- Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics*. (5th ed.) (p. 1008). Pearson Education. Inc.
- Taleghani, M., Gilaninia, S., & Talab, S. M. (2013). Relationship between Market Orientation Culture and Business Performance. *Interdisciplinary Journal of Contemporary Research in Business*, 5(1).
- Talib, F. & Rahman, Z. (2010). Critical success factors of total quality management in service organization: a proposed model. *Service Marketing Quarterly*, 31(3), 363-80.
- Talib, F., Rahman, Z., & Qureshi, M. N. (2011). Pareto analysis of total quality management factors critical to success for service industries. Paper presented at 5th International Quality Conference, Center for Quality. Retrieved March 6, 2013 from <http://www.cqm.rs/2011/cd/5iqc/pdf/088.pdf>
- Talib, F., Rahman, Z., & Qureshi, M. N. (2013). An empirical investigation of relationship between total quality management practices and quality performance in Indian service companies. *International Journal of Quality & Reliability Management*, 30(3), 280-318.
- Talwar, B. (2009). Comparative study of core values of excellence models vis-a`-vis human values. *Measuring Business Excellence*, 13(4), 34-46.
- Talwar, B. (2011). Business excellence models and the path ahead.... *The TQM Journal*, 23(1), 21-35.
- Tangen, S. (2004). Performance measurement: from philosophy to practice. *International Journal of Productivity and Performance Management*, 53(8), 726-737.
- Tari, J. J. (2005). Components of successful total quality management. *The TQM Magazine*, 17(2), 182-194.

- Tavanti, M. (2013). Before microfinance: The social value of microsavings in Vincentian poverty reduction. *Journal of business ethics*, 112(4), 697-706.
- Taylor, W. A., & Wright, G. H. (2003). A longitudinal study of TQM implementation: factors influencing success and failure. *Omega*, 31(2), 97-111.
- Teece, D. J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic management journal*, 28(13), 1319-1350.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic management journal*, 18(7), 509-533.
- Teh, P. L., Yong, C. C., Arumugam, V., & Ooi, K. B. (2009). Does total quality management reduce employees' role conflict?. *Industrial Management & Data Systems*, 109(8), 1118-1136.
- Tenenhaus, M., Esposito, V., Chatelin, Y. M., & Lauro, C. (2005). PLS Path Modeling. *Computational Statistics and Data Analysis*, 28, 159- 205.
- Thai Hoang, D., Igel, B., & Laosirihongthong, T. (2006). The impact of total quality management on innovation: Findings from a developing country. *International journal of quality & reliability management*, 23(9), 1092-1117.
- The World Factbook (2012). Retrieved April 7, 2013 from <https://www.cia.gov/library/publications/the-world-factbook/geos/ym.html>.
- Theodosiou, M., Kehagias, J., & Katsikea, E. (2012). Strategic orientations, marketing capabilities and firm performance: An empirical investigation in the context of frontline managers in service organizations. *Industrial Marketing Management*, 41(7), 1058-1070.
- Thomsett, M.C (2005). *Getting Started in Six Sigma Comprehensive Coverage*. Hoboken NJ: John Wiley & Sons Inc.

- Thouin, M., Hoffman, J. J., & Ford, E. W. (2008). The Effect of Information Technology (IT) Investments on Firm-Level Performance in the Healthcare Industry. *Health Care Management Review*, 33(1), 60-69.
- Tippins, M. J., & Sohi, R. S. (2003). IT Competency and firm performance: Is organizational learning a missing link? *Strategic Management Journal*, 24, 745-761.
- Todorut, A. V. (2013). The need of total quality management in higher education. *Procedia-Social and Behavioral Sciences*, 83, 1105-1110.
- Topalović, S. (2015). The Implementation of Total Quality Management in Order to Improve Production Performance and Enhancing the Level of Customer Satisfaction. *Procedia Technology*, 19, 1016-1022.
- Tsai, Y. (2011). Relationship between organizational culture, leadership behavior and job satisfaction. *BMC health services research*, 11(1), 98.
- Türker, B. A. Ş. (2002). A Quality Measurement Framework for Turkish Firms: Validation of an Instrument. *Ege Academic Review*, 2(1), 118-128.
- Uinzi, V. E., Chin, W. W., Henseler, J., & Wang, H. (2010). *Handbook of Partial Least Squares: Concepts, Methods and Applications*. Springer Heidelberg Dordrecht London New York.
- Ul Hassan, M., Mukhtar, A., Qureshi, S. U., & Sharif, S (2012). Impact of TQM Practices on Firm's Performance of Pakistan's Manufacturing Organizations. *International Journal*, 2(10).
- UNCDF (2006). *Building Inclusive Financial Sectors for Development: Executive Summary*. New York: UNCDF.

- Untachai, S. (2008). Market Orientation and Performance within Community Enterprises in Upper Northeastern Region of Thailand. Paper presented at *EDU-COM International Conference*.
- Upadhyay, Y., & Baber, R. (2013). Market Orientation and Organizational Performance in Tourism and Travel Industry. *Journal of Business and Management, 10(2)*, 17-26.
- Urbach, N., & Ahlemann, F. (2010). Structural equation modeling in information systems research using partial least squares. *Journal of Information Technology Theory and Application, 11(2)*, 5-40.
- Valerie, F. (2012). Re-discovering the PLS approach in management science. *M@n@gement, 15(1)*, 101-123.
- Valmohammadi, C. (2011). The impact of TQM implementation on the organizational performance of Iranian manufacturing SMEs. *The TQM Journal, 23(5)*, 496-509.
- Verardi, V., & Croux, C. (2008). Robust regression in Stata. Available at SSRN 1369144.
- Vieira, V. A. (2010). Antecedents and Consequences of market orientation: a Brazilian meta-analysis and an international mega-analysis. *BAR. Brazilian Administration Review, 7(1)*, 40-58.
- Visconti, R. M., & Quirici, M. C. (2014). The Impact of Innovation and Technology on Microfinance Sustainable Governance. *Corporate Ownership & Control, 11(1)*, 420-428.
- Vorhies, D. W., Morgan, R. E., & Autry, C. W. (2009). Product-market strategy and the marketing capabilities of the firm: impact on market effectiveness and cash flow performance. *Strategic Management Journal, 30(12)*, 1310-1334.

- Voss, G. B., & Voss, Z. G. (2000). Strategic orientation and firm performance in an artistic environment. *Journal of marketing*, 64(1), 67-83.
- Vouzas, F. & Psychogios, A.G. (2007). Assessing managers' awareness of TQM. *The TQM Magazine*, 19(1), 62-75.
- Wade, M., & Hulland, J. (2004). Review: The resource-based view and information systems research: Review, extension, and suggestions for future research. *MIS quarterly*, 28(1), 107-142.
- Wall, T. D., Michie, J., Patterson, M., Wood, S. J., Sheehan, M., Clegg, C. W. & West, M. (2004). On the validity of subjective measures of company performance. *Personnel Psychology*, 57(1): 95-118.
- Wang, C. H., & Chen, S. C. (2011). The Effect of the link Total Quality Management and Market orientation On Hotel performance. *Total Quality Management*, 1(H2), H3.
- Wang, C. H., Chen, K. Y., & Chen, S. C. (2012). Total quality management, market orientation and hotel performance: the moderating effects of external environmental factors. *International Journal of Hospitality Management*, 31(1), 119-129.
- Wang, C. L., & Ahmed, P. K. (2007). Dynamic capabilities: A review and research agenda. *International journal of management reviews*, 9(1), 31-51.
- Wang, E. T., Hu, H. F., & Hu, P. J. H. (2013). Examining the role of information technology in cultivating firms' dynamic marketing capabilities. *Information & Management*, 50(6), 336-343.

- Waweru, N. (2010). The appropriateness of performance measurement systems in the services sector: case studies from the microfinance sector in Kenya. Paper presented during the American Accounting Association, *Management Accounting Section Conference*, 6-9 January.
- Waweru, N., & Spraakman, G. (2012). The use of performance measures: case studies from the microfinance sector in Kenya. *Qualitative Research in Accounting & Management*, 9(1), 44-65.
- Weerakoon, T. S. (1996). Organizational Performance: A Stakeholder Concept. In *International Research Conference on Quality Management Proceeding* (pp. 80-90).
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic management journal*, 5(2), 171-180.
- Weston Jr, F. C. (1993). Weighing 'soft' and 'hard' benefits of information technology. *Manufacturing Systems*, 11(7), 120-121.
- Wetzels, M., Odekerken-Schroder, G., & Oppen, C. V. (2009). Using PLS path modeling for assessing hierarchical models: Guidelines and empirical illustration. *MIS Quarterly* 33(1), 177-195.
- World Bank (2012). *Yemen - Joint social and economic assessment for the Republic of Yemen*. Washington, DC: World Bank. Retrieved September 18, 2013 from <http://documents.worldbank.org/curated/en/2012/08/17060779/yemen-joint-social-economic-assessment-republic-yemen-vol-1-2>
- World Bank (2015a). Business Environment Snapshot for Yemen. Retrieved May 25, 2015 from <http://rru.worldbank.org/besnapshots/BecpProfilePDF.aspx?economy=yemen>

World Bank (2015b). Microfinance and Financial Inclusion. Retrieved April 3, 2013
from

<http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:20433592~menuPK:34480~pagePK:64257043~piPK:437376~theSitePK:4607,00.html>

.

World Bank (2015d). Poverty Overview. Retrieved May 25, 2015 from
<http://www.worldbank.org/en/topic/poverty/overview>.

World Bank (2015e). Yemen Overview. Retrieved 31 August, 2015 from
<http://www.worldbank.org/en/country/yemen/overview>.

Yemen Country Profile. (2008). Library of Congress – Federal Research Division.
Retrieved September January, 2012, from
<http://lcweb2.loc.gov/frd/cs/profiles/Yemen.pdf>.

Yemen Country Profile. (2009). Retrieved March 12, 2013, from
<http://www.fco.gov.uk/en/about-the-fco/country-profiles/middle-east-north-africa/yemen?profile=geography&pg=5>.

Yin, R. K. (2013). *Case study research: Design and methods*. Sage publications.

YMN (2012a). The Yemen Microfinance Network Annual Report 2012. Retrieved
March 25, 2013, from
http://www.ngodirectory.org/yemen/sites/default/files/licences/user-last-login-raw/annual_report_for_sending_via_email_english.pdf

YMN (2012b). YMN's Members "SEEP" Report For fourth quarter 2012. Retrieved
March 20, 2013, from <http://www.yemennetwork.org/page/view/51/153>.

- Yu, C., & Xin-quan, G. (2011). The empirical study on the relationship between information technology capability and innovation performance: The moderating role of learning commitment. In *E-Business and E-Government (ICEE), 2011 International Conference on* (pp. 1-4). IEEE.
- Yunoh, M. N. M., & Ali, K. A. M (2015). Total Quality Management Approach for Malaysian SMEs: Conceptual Framework. *International Journal of Business and Social Science*, 6(1).
- Yusof, A., & Ali, J. (2000). Managing culture in organization. *Malaysian Management Journal*, 35(2), 60-65.
- Yusr, M. M., Mokhtar, S. S. M. & Othman, A. R. (2014). The Effect of TQM Practices on Technological Innovation Capabilities: Applying on Malaysian Manufacturing Sector. *International Journal for Quality Research*, 8(2), 197–216.
- Yusr, M. M., Othman, A. R., & Mokhtar, S. S. M. (2012). Assessing the Mediating Role of Marketing Capability in the Relationship between TQM Practices and Innovation Performance Dynamic Capabilities Approach. *International Journal of Business and Social Science*, 3(23), 165-176.
- Yusuf, Y., Gunasekaran, A., & Dan, G. (2007). Implementation of TQM in China and organisation performance: an empirical investigation. *Total quality management*, 18(5), 509-530.
- Zairi, M. (2013). The TQM legacy–Gurus’ contributions and theoretical impact. *The TQM Journal*, 25(6), 659-676.
- Zakuan, N. M., Yusof, S. M., Laosirihongthong, T., & Shaharoun, A. M. (2010). Proposed relationship of TQM and organisational performance using structured equation modelling. *Total Quality Management*, 21(2), 185-203.

- Zebal, M. A., & Goodwin, D. R. (2012). Market orientation and performance in private universities. *Marketing Intelligence & Planning*, 30(3), 339-357.
- Zehir, C., Ertosun, Ö. G., Zehir, S., & Müceldilli, B. (2012). Total Quality Management Practices' Effects on Quality Performance and Innovative Performance. *Procedia-Social and Behavioral Sciences*, 41, 273-280.
- Zhang, M., Sarker, S., & McCullough, J. (2008). Measuring information technology capability of export-focused small or medium sized enterprises in China: Scale development and validation. *Journal of Global Information Management (JGIM)*, 16(3), 1-25.
- Zhang, Z., Waszink, A., & Wijngaard, J. (2000). An instrument for measuring TQM implementation for Chinese manufacturing companies. *International Journal of Quality & Reliability Management*, 17(7), 730-755.
- Zhao, X., Lynch, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, 37, 197-206.
- Zhou, K. Z., Yim, C. K., & Tse, D. K. (2005). The effects of strategic orientations on technology-and market-based breakthrough innovations. *Journal of marketing*, 69(2), 42-60.
- Zhu, Z., & Nakata, C. (2007). Reexamining the link between customer orientation and business performance: the role of information systems. *The Journal of Marketing Theory and Practice*, 15(3), 187-203.
- Zikmund, W. G. (2003). *Business Research Methods*. Oklahoma: South-Western.
- Zikmund, W., Babin, B., Carr, J., & Griffin, M. (2012). *Business research methods*. Cengage Learning.

Zu, X. (2009). Infrastructure and core quality management practices: how do they affect quality? *International Journal of Quality & Reliability Management*, 26(2), 129-149.

Zuriekat, M., Salameh, R., & Alrawashdeh, S. (2011). Participation in performance measurement systems and level of satisfaction. *International Journal of Business and Social Science*, 2(8), 159-169



APPENDIXES



UUM

Universiti Utara Malaysia

Appendix 1

Questionnaire- English Version



Universiti Utara Malaysia

Yemeni Microfinance Institutions Performance Survey 2014

Dear Respondent,

I am a Doctorate student at the University Utara Malaysia, examining the performance of microfinance institution in Yemen. My research is pertaining to the effect of Total Quality Management, Strategic Orientations and Information Technology Capability on the performance of Yemeni Microfinance Institutions.

Attached is a set of questions related to this study. My study requires all managers to participate, as the total number is very limited, by responding to the questionnaire. Thus, please respond (answer) to the questions as accurately as possible. Your cooperation is very much appreciated.

Be assured that all your responses will be kept strictly confidential and will be used for research purposes. Once again, I would like to express my gratitude for your cooperation.

Yours sincerely,

Abdo Ali Homaid

Email: mfisurvey2014@gmail.com
Mobile: 00967738767681 (Yemen)
Mobile: 0060124014925 (Malaysia)

Section I: Personal and institution Information

In this section, these questions are related to personal and institution information. Kindly tick (✓) in the appropriate answer and be assured that your responses are strictly confidential.

1. Job title: Branch Manager Other specify.....
2. Gender: Male Female
3. Age: < 30 30-39 40-49
 50-59 > 60
4. Number of years serving in the current position:
 < 1 year 1 - 5years > 5 years
5. Number of years this branch in operation:
 < 1 year 1 - 3 years > 3 years
6. Branch location:
 In the state capital In the suburbs In the rural
7. Legal status of the institution (branch):
 Program Foundation Small and Medium Bank
 Company Agricultural Bank
8. Types of financing provided by the institution (branch):-
 Islamic finance only regular finance only Both Islamic and regular finance
9. The operation services provided by the institution (branch): (You can choose more than one)
 Loans Savings Money transfer Insurance
 Currency Exchange Others specify.....
10. Does your institution (branch) have a specific officer in charge of quality?
 Yes No

Note: Quality can be defined as the degree to which products and/or service delivered is considered as value-added and excellent that can reach customer satisfaction.

Section II: Total Quality Management

This section describes statements about the Total Quality Management success factors in your institution. Please read these statements carefully and circle the number that most appropriately reflects your opinion.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

No.	Statements	Scale				
		1	2	3	4	5
LM1	Top management always encourage staff to be involved in quality management and improvement activities.	1	2	3	4	5
LM2	Top management empowers staff to solve quality problem.	1	2	3	4	5
LM3	Top management allocates adequate resources for staff education and training.	1	2	3	4	5
LM4	Top management learn quality-related concepts and skills.	1	2	3	4	5
LM5	Top management is actively involved in quality management and improvement process.	1	2	3	4	5
CF1	Our activities mainly focus on satisfying our customers.	1	2	3	4	5
CF2	It is very important to satisfying our customers and exceeding their expectations.	1	2	3	4	5
CF3	Our senior executives always emphasize on the importance of customers.	1	2	3	4	5
SP1	Our institution sets and reviews our short and long-term goals through a comprehensive planning process.	1	2	3	4	5
SP2	In our institution, strategic plans are linked to quality principles.	1	2	3	4	5
SP3	Our institution has a written strategy covering business operations which is clearly articulated and agreed by top management.	1	2	3	4	5
SP4	The mission of our institution is communicated and supported by our staff.	1	2	3	4	5
SP5	We always consider donors' capability and other stakeholders' needs when we develop our plans, policies and objectives.	1	2	3	4	5
TR1	Staff training is provided to help them understand microfinance basics and our institution's operation.	1	2	3	4	5
TR2	Our staff has sufficient knowledge of the basic aspects of microfinance sector.	1	2	3	4	5
TR3	Our staff understands the basic processes used to create and develop products/ services.	1	2	3	4	5
		1	2	3	4	5

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
--------------------------	-----------------	----------------	--------------	-----------------------

No.	Statements	Scale				
		1	2	3	4	5
TR4	Our staff is involved on-the-job training.	1	2	3	4	5
TR5	Both managers and supervisors participate in specialist training (e.g. financial analysis of MFIs, product developmentetc.)	1	2	3	4	5
CI1	Our staff is given an opportunity to suggest changes and modifications to existing operation processes.	1	2	3	4	5
CI2	Our institution encourages continual evaluation and improvement of all its products, services and processes.	1	2	3	4	5
CI3	Our institution has received recent compliments and recognition for improving its products/services/processes.	1	2	3	4	5
BM1	We visit other institutions, locally and internationally, to investigate their practices.	1	2	3	4	5
BM2	We conduct a research to find out the best practices of other institutions in microfinance industry.	1	2	3	4	5
BM3	We monitor competitors to find out the best practices in microfinance industry.	1	2	3	4	5
QC1	Our management and staff accept quality as a strategic weapon to obtain competitive advantage.	1	2	3	4	5
QC2	Our staff at all levels accepts the motto “service to customers” as the real purpose of their existence.	1	2	3	4	5
QC3	Our staff believes in doing things “right the first time and every time”.	1	2	3	4	5
QC4	Our staff has positive feelings such as “my institution” and “we work together to achieve common goals”.	1	2	3	4	5
QC5	Our staff is well-dressed and neat.	1	2	3	4	5
QC6	All work requirements such as offices, furniture and other furnishings are comfortable for the staff to work.	1	2	3	4	5
QC7	Housekeeping is considered as a priority and it occupies the highest order in our institution	1	2	3	4	5

Section III: Market Orientation

This section describes statements about Market Orientation in your institution (branch). Kindly read these statements carefully and circle the number that most appropriately reflects your opinion.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

No.	Statements	Scale				
		1	2	3	4	5
IG1	We generate a lot of information related to market trends (e.g., regulations, technology, politics and economy).	1	2	3	4	5
IG2	We are fast to detect fundamental changes in our target market environment (e.g., regulations, technology, politics and economy)	1	2	3	4	5
IG3	We periodically review the likely effect of changes in our business environment (e.g., regulations, , technology, politics and economy)	1	2	3	4	5
ID1	We disseminate all Information that can influence the way we serve our customers to the relevant personnel.	1	2	3	4	5
ID2	We often lose information about our customers in the system.	1	2	3	4	5
ID3	Information concerning competitors' activities often reaches relevant personnel too late to be of any use.	1	2	3	4	5
ID4	Important information related to target market trends (e.g. regulation, and technology) is often discarded as it makes its way along the communication chain.	1	2	3	4	5
RE1	We are fast to respond to important changes in our business environment (e.g., regulation and technology)	1	2	3	4	5
RE2	We are fast to respond to significant changes in our competitors' price strategies in target markets.	1	2	3	4	5
RE3	We are fast to respond to competitive actions that threaten us in our target markets.	1	2	3	4	5

Section V: Information Technology Capability

This section describes statements about IT Capability in your institution (branch). Kindly read these statements carefully and circle the number that most appropriately reflects your opinion.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

No.	Statements	Scale				
		1	2	3	4	5
ITK1	Our institution IT department staff is knowledgeable on IT operations.	1	2	3	4	5
ITK2	Our institution IT department staff is able to solve IT-related problems in the branch.	1	2	3	4	5
ITK3	Our institution IT department staff is knowledgeable on new computer-based innovations.	1	2	3	4	5
ITB1	Our institution has an independent Management Information System (MIS) department.	1	2	3	4	5
ITB2	In the MIS department, a manager is employed whose main duties include the management of our information technology.	1	2	3	4	5
ITB3	Our institution's branches are linked by a computer network through Wide Area Network (WAN).	1	2	3	4	5
ITP1	We routinely utilize computer-based systems to access information concerning our banking operations.	1	2	3	4	5
ITP2	We employ computer-based systems to analyze customer and market information.	1	2	3	4	5
ITP3	We frequently utilize decision-support system when managing customer information.	1	2	3	4	5
ITP4	We have set procedures for collecting customer information from online sources before disbursing a loan.(e.g. from SFD database)	1	2	3	4	5

Section IV: Microfinance Institutions Performance

This section describes statements about Microfinance Institutions Performance in your institution (branch). Kindly read these statements carefully and circle the number that most appropriately reflects your opinion.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

No.	Statements	Scale				
FP1	This institution (branch) is financially sustainable	1	2	3	4	5
FP2	This institution (branch)'s financial risk is low.	1	2	3	4	5
CP1	In this institution (branch), the level of the customer satisfaction has increased.	1	2	3	4	5
CP2	In this branch, the level of the staff satisfaction has increased.	1	2	3	4	5
PP1	In this institution (branch), the operating cost of doing business has decreased.	1	2	3	4	5
PP2	In this institution (branch), the average time to process a loan application has decreased.	1	2	3	4	5
LGP1	This institution (branch) has successfully improved the quality of service offered.	1	2	3	4	5
LGP2	This institution (branch) has utilized latest new innovations, methods and procedures for increasing effectiveness.	1	2	3	4	5
SOP1	This institution (branch) contributes to improving the lives of the poorest of the poor.	1	2	3	4	5
SOP2	This institution (branch) particularly benefits women.	1	2	3	4	5

THANKS A LOT FOR YOUR PATIENCE IN FILLING UP THIS QUESTIONNAIRE

Appendix 2 Questionnaire- Arabic Version



جامعة أوتارا الماليزية

إستبيان حول مؤسسات التمويل الأصغر في اليمن للعام 2014

عزيزي المشارك

بداية أود أن أعرفك بنفسي, أنا طالب دكتوراة في جامعة أوتارا الماليزية, وأقوم حاليا بإجراء دراسة عن أداء مؤسسات التمويل الأصغر في اليمن. بحثي يتعلق بمدى تأثير إدارة الجودة الشاملة و التوجهات الإستراتيجية وقدرات تكنولوجيا المعلومات على مؤسسات التمويل الأصغر في اليمن.

مرفقا بهذا مجموعة من الأسئلة التي تتعلق بهذه الدراسة. والتي تتطلب من جميع مدراء الفروع المشاركة في هذا الإستبيان عن طريق الإجابة على أسئلة الإستبيان كون إجمالي عدد المدراء محدود.

كما ننوه إلى أن جميع إجاباتكم سيتم الإحتفاظ بها بشكل سري وسوف تستخدم لأغراض البحث العلمي فقط.

مرة أخرى أعبر لكم عن مدى إمتناني وتقديري لتعاونكم.

عبده علي عبدالله حميد

إيميل: mfisurvey2014@gmail.com

موبايل: 00967738767681 (اليمن)

موبايل: 0060124014925 (ماليزيا)

القسم الأول : معلومات شخصية عن المجيب و المؤسسة (الفرع)

هذا القسم يحتوي على أسئلة تتعلق بشخصكم الكريم وعن المؤسسة (الفرع). الرجاء وضع علامة (✓) على الإجابة المناسبة وتؤكد لكم أن إجاباتكم ستعامل بسرية تامة.

1. الوظيفة (المركز الوظيفي): مدير الفرع غيره (الرجاء التحديد).....
 2. الجنس: ذكر أنثى
 3. العمر: > 30 سنة 39-30 سنة 49-40 سنة
 59-50 سنة < 60 سنة
 4. عدد سنوات الخدمة في المنصب الحالي:
 > 1 سنة 5-1 سنوات < 5 سنوات
 5. عمر الفرع:
 > 1 سنة 3-1 سنوات < 3 سنوات
 6. موقع البنك :
 في مركز المدينة في ضواحي المدينة في الريف
 7. الوضع القانوني للمؤسسة:
 برنامج مؤسسة بنك تمويل أصغر
 شركة بنك زراعي
 8. أنواع التمويل التي تقدمها المؤسسة (الفرع) :-
 تمويل إسلامي فقط تمويل تقليدي فقط تمويل إسلامي وتقليدي
 9. الخدمات العملية التي تقدمها المؤسسة (الفرع): (يمكنك اختيار أكثر من واحد)
 قروض (تمويلات) إيداعات حوالات
 تأمين صرف عملات غيره (الرجاء التحديد)....
 10. هل يوجد في مؤسستكم (فرعكم) موظف مسؤول عن الجودة؟
 نعم لا
- ملاحظة :- تعريف الجودة " هي الدرجة التي من خلالها يتم إعتبار المنتجات/ الخدمات المقدمة من المؤسسة متميزة و ذو قيمة بحيث تحقق رضا العملاء

القسم الأول: إدارة الجودة الشاملة

هذا القسم يوضح عبارات عن عوامل نجاح إدارة الجودة الشاملة في مؤسستكم (فرعكم).
الرجاء قراءة هذه العبارات بعناية فائقة ووضع دائرة حول الرقم الذي يعكس وجهة نظركم.

5	4	3	2	1
موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة

رقم	السؤال	المقياس				
1	الإدارة العليا دائما تشجع الموظفين على المشاركة في أنشطة إدارة الجودة والتحسين.	5	4	3	2	1
2	الإدارة العليا تفوض الموظفين في حل أي مشاكل تتعلق بالجودة.	5	4	3	2	1
3	الإدارة العليا تخصص موارد كافية لتعليم وتدريب الموظفين.	5	4	3	2	1
4	الإدارة العليا لديها فهم كامل بالمفاهيم والمهارات المتعلقة بالجودة.	5	4	3	2	1
5	الإدارة العليا تشارك بشكل فعال في إدارة الجودة وعملية التحسين.	5	4	3	2	1
6	أنشطتنا تركز بشكل أساسي على إرضاء عملائنا.	5	4	3	2	1
7	من المهم جدا العمل على إرضاء عملائنا بشكل يفوق توقعاتهم.	5	4	3	2	1
8	المدراء التنفيذيين لدينا يؤكدون دائما على أهمية العملاء.	5	4	3	2	1
9	نقوم بإعداد ومراجعة خطط قصيرة وطويلة المدى من خلال عملية تخطيط شاملة.	5	4	3	2	1
10	في مؤسستنا يتم ربط الخطط الإستراتيجية بمبادئ الجودة.	5	4	3	2	1
11	مؤسستنا لديها خطة إستراتيجية مكتوبة تغطي مختلف العمليات بشكل واضح تم وضعها وإعتمادها من قبل الإدارة العليا ومجمع عليها من قبل جميع المستويات	5	4	3	2	1
12	يتم نشر رسالة مؤسستنا عن طريق الموظفين.	5	4	3	2	1
13	عندما نقوم بتطوير خطط وسياسات وأهداف هذه المؤسسة يتم الأخذ في الاعتبار قدرات المانحين إضافة إلى المعنيين الآخرين.	5	4	3	2	1
14	يتم توفير التدريب للموظفين لمساعدتهم على فهم أساسيات التمويل الأصغر وعمل المؤسسة.	5	4	3	2	1
15	موظفينا لديهم معرفة كافية بالجوانب الأساسية لقطاع التمويل الأصغر.	5	4	3	2	1
16	موظفينا لديهم معرفة بالإجراءات الأساسية لتطوير المنتجات / الخدمات.	5	4	3	2	1

5	4	3	2	1
موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة

المقياس					السؤال	رقم
5	4	3	2	1	يتم إخضاع موظفينا للتدريب على رأس العمل.	17
5	4	3	2	1	المدراء والمشرفين يشاركون في دورات تدريبية تخصصية مثل (التحليل المالي لمؤسسات التمويل الأصغر - إدارة المخاطر - تطوير المنتج..... إلخ)	18
5	4	3	2	1	يتم إعطاء الموظفين فرصة لاقتراح التغييرات والتعديلات على عمليات التشغيل الحالية.	19
5	4	3	2	1	نشجع مؤسستنا التقييم المستمر و تطوير المنتجات و الخدمات والإجراءات.	20
5	4	3	2	1	تلقت مؤسستنا إشادة ومديح وذلك تقديرا للتحسين المستمر في منتجاتها/خدماتها/إجراءاتها.	21
5	4	3	2	1	نحن نقوم بزيارة مؤسسات التمويل الأصغر المحلية والعالمية للإطلاع على ممارساتها المختلفة لمقارنتها والإستفادة منها.	22
5	4	3	2	1	نحن نقوم ببحوث عميقة لغرض الإستكشاف والإستفادة من أفضل الممارسات التي تنتهجها مؤسسات التمويل الأصغر.	23
5	4	3	2	1	نحن نقوم بمراقبة المنافسين للتعرف على أفضل الممارسات في صناعة التمويل الأصغر للإستفادة منها.	24
5	4	3	2	1	يتفق مدراؤنا وموظفينا بأن "الجودة" سلاح إستراتيجي يمكننا من الحصول على ميزة تنافسية.	25
5	4	3	2	1	موظفينا في جميع المستويات يؤمنون بالهدف الحقيقي لوجود شعار "خدمة للعملاء".	26
5	4	3	2	1	يؤمن موظفينا بفعل الأشياء الصحيحة من أول مرة وفي كل مرة.	27
5	4	3	2	1	موظفينا لديهم شعور إيجابي تجاه المؤسسة على سبيل المثال "مؤسستي" و "نحن نعمل معا لتحقيق الأهداف المشتركة".	28
5	4	3	2	1	موظفينا لديهم مظهر مهني لائق وراقي لكنه ليس مبالغ فيه.	29
5	4	3	2	1	جميع متطلبات العمل مثل المكاتب، والأثاث والمفروشات الأخرى مريحة للموظفين أثناء العمل.	30
5	4	3	2	1	تعتبر المحافظة على ممتلكات المؤسسة مهمة جدا كونها تحتل أعلى المراتب في مؤسستنا.	31

القسم الثاني: التوجه التسويقي

هذا القسم يوضح عبارات عن التوجه التسويقي في مؤسستكم (فرعكم). الرجاء قراءة هذه العبارات بعناية فائقة ووضع دائرة حول الرقم الذي يعكس وجهة نظرکم.

5	4	3	2	1
موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة

رقم	السؤال	المقياس				
1	نحن نقوم بجمع الكثير من المعلومات عن توجهات السوق المتعلقة بالقوانين والتكنولوجيا والوضع السياسي والاقتصاد.	5	4	3	2	1
2	نحن نكتشف بسرعة أي تغييرات جذرية في بيئتنا السوقية المتعلقة بالقوانين والتكنولوجيا والوضع السياسي والاقتصاد.	5	4	3	2	1
3	نحن نستعرض بشكل دوري التأثيرات المحتملة للتغيرات في السوق على مؤسستنا المتعلقة بالقوانين والتكنولوجيا والوضع السياسي والاقتصاد.	5	4	3	2	1
4	نحن نقوم بتعميم كل المعلومات التي يمكن أن تؤثر على خدمة عملائنا إلى الموظفين المعنيين.	5	4	3	2	1
5	نحن غالبا ما تفقد معلومات تتعلق بعملائنا في النظام.	5	4	3	2	1
6	المعلومات المتعلقة بأنشطة المنافسين في كثير من الأحيان تصل إلى الموظفين المعنيين في وقت متأخر جدا بحيث لا يتم الاستفادة منها.	5	4	3	2	1
7	المعلومات المهمة المتعلقة باتجاهات السوق (مثل القوانين والتكنولوجيا) غالبا ما يتم إهمالها بسبب تنقلها خلال مراحل الإتصال المختلفة.	5	4	3	2	1
8	نحن نستجيب بسرعة للتغيرات المهمة في السوق (القوانين- الاقتصاد- التكنولوجيا).	5	4	3	2	1
9	نحن نستجيب بسرعة للتغيرات الكبيرة في الاستراتيجيات السعرية التي يتبعها منافسينا في الأسواق المستهدفة.	5	4	3	2	1
10	نحن نرد بسرعة على الإجراءات التنافسية التي تستهدف عملائنا.	5	4	3	2	1

القسم الثالث: قدرات تكنولوجيا المعلومات

هذا القسم يوضح عبارات عن قدرات تكنولوجيا المعلومات في مؤسستكم (فرعكم). الرجاء قراءة هذه العبارات بعناية فائقة ووضع دائرة حول الرقم الذي يعكس وجهة نظرکم.

5	4	3	2	1
موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة

المقياس	السؤال	رقم
5 4 3 2 1	موظفي نظم المعلومات لدينا على دراية (معرفة) تامة بالإنظمة التي تعتمد على الكمبيوتر في العمليات المصرفية.	1
5 4 3 2 1	موظفي نظم المعلومات لديهم القدرة على حل المشاكل المتعلقة بالنظام في الفرع.	2
5 4 3 2 1	موظفي نظم المعلومات على قدر كبير من المعرفة بالإبتكارات الجديدة المعتمدة على الكمبيوتر.	3
5 4 3 2 1	مؤسستنا لديها إدارة مستقلة تهتم بإدارة نظم المعلومات.	4
5 4 3 2 1	لدينا مدير مهمة الأساسية إدارة نظم وتكنولوجيا المعلومات في إدارة النظم.	5
5 4 3 2 1	يتم ربط فروع المؤسسة بشبكة واحدة (شبكة كمبيوتر) وبشكل مباشر يمكنها من تقديم الخدمات.	6
5 4 3 2 1	نحن عادة ما نستخدم النظم الحاسوبية للوصول إلى المعلومات المتعلقة بالعمليات المصرفية.	7
5 4 3 2 1	نحن نستخدم نظم المعلومات في تحليل المعلومات المتعلقة بالعملاء والسوق.	8
5 4 3 2 1	نحن نستخدم نظم المعلومات في الحصول على المعلومات المتعلقة بالعملاء عند عملية إتخاذ القرار.	9
5 4 3 2 1	نحن وضعنا إجراءات لجمع المعلومات عن العملاء المقترضين من مواقع تبادل المعلومات (قواعد بيانات الصندوق الإجتماعي للتنمية- البنك المركزي)	10

القسم الرابع: أداء مؤسسات التمويل الأصغر

هذا القسم يوضح عبارات عن أداء مؤسستكم (فرعكم) خلال الفترة الماضية. الرجاء قراءة هذه العبارات بعناية فائقة ووضع دائرة حول الرقم الذي يعكس وجهة نظركم.

5	4	3	2	1
موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة

المقياس					السؤال	رقم
5	4	3	2	1	يمكننا القول بأن هذه المؤسسة (الفرع) مستدام ماليا.	1
5	4	3	2	1	المخاطر المالية لهذه المؤسسة (الفرع) منخفضة جدا.	2
5	4	3	2	1	مستوى رضا العملاء زاد في هذه المؤسسة (الفرع)	3
5	4	3	2	1	مستوى رضا الموظفين زاد في هذه المؤسسة (الفرع)	4
5	4	3	2	1	الكلفة التشغيلية للعمليات المصرفية إنخفضت في هذه المؤسسة (الفرع)	5
5	4	3	2	1	معدل الوقت لصرف التمويل انخفض في هذه المؤسسة (الفرع).	6
5	4	3	2	1	يتم العمل على تطوير إجراءات من خلالها يتم تحسين جودة الخدمات المقدمة في هذه المؤسسة (الفرع) بنجاح.	7
5	4	3	2	1	يتم الإستفادة من أحدث الإبداعات والطرق والأساليب لزيادة الفعالية في هذه المؤسسة (الفرع).	8
5	4	3	2	1	تساهم هذه المؤسسة (الفرع) في تحسين معيشة (حياة) أفقر الفقراء.	9
5	4	3	2	1	تساهم هذه المؤسسة (الفرع) في دعم النساء بشكل خاص.	10

شكرا جزيلا على مشاركتكم في تعبئة هذا الإستبيان

Appendix 3

Total Quality Management Critical Success Factors

Comparison of various National Quality Awards

CSF	MBNQA	DP	EFQM	RGQA	IMCRBNO A	JQA	SAEA	GPNQA	ABEA	GQA	Frequency Of Occurrence
Top Management Support	√		√	√	√	√	√	√	√	√	09
Education & Training	√	√	√	√	√	√	√	√	√	√	10
Vision & Plan Statement				√							01
Customer Orientation	√	√	√	√	√	√	√	√	√	√	10
Supplier Quality Management	√	√					√				03
Employee Empowerment & Involvement	√	√	√	√	√	√	√	√	√	√	10
Process Flow Management	√	√	√	√	√	√	√	√	√	√	10
Reward & Recognition	√	√	√	√			√	√		√	7
Benchmark	√										01
Strategic Quality Planning	√	√	√	√	√	√	√	√	√	√	10
Information, Evaluation & Analysis	√	√			√	√	√	√	√		7
Product Design		√							√		02
Product Quality	√	√							√		03
Unity Of Purpose		√									01
Internal Quality Results	√	√	√	√	√	√	√	√	√	√	10
External Quality Results	√	√	√	√	√	√	√	√	√	√	10
Quality System Improvement	√	√									02
Organization		√									01
Standardization		√									01

Critical success factors of TQM according to measurement studies

The Author/ Year	No. of CSFs	Critical success factors of TQM
1. Saraph et al. (1989)	8	Top-management leadership, quality department, training, product/ service design, supplier quality management, process management, quality data reporting and employee relations.
2. Flynn et al. (1994)	11	Leadership, quality feedback, quality improvement rewards, teamwork, process design, supplier management, process control, cleanliness and customer interaction, and new product quality.
3. Ahire et al. (1996)	12	Top-management commitment, benchmarking, quality information use, employee involvement, training and education, empowerment, supplier quality management, statistical process control usage, design quality management, Customer focus, supplier performance, and product quality.
4. Zhang et al. (2000)	11	Leadership; supplier quality management; vision and plan statement; evaluation; process control and improvement; product design; quality system improvement; employee participation; recognition and reward; education and training and customer focus.
5. Motwani (2001)		Leadership, training, Customer Focus and Satisfaction, supplier quality management, Information and Analysis, And communication to improve quality.
6. Türker (2002)	8	Top management and quality policy, quality department, training, Product/service design, Supplier quality management, Process management, Quality data and reporting and Employee relations
7. Bayazit (2003)	6	Top management support, employee involvement and commitment, customer focus, quality education and training, teamwork, and use of statistical techniques.
8. Conca (2004)	8	Leadership, quality strategic planning, human resource management, supplier management, customer focus, process management, continuous improvement, learning.
9. Saravanan, & Rao (2006)	12	Top Management Commitment and Leadership, Benchmarking, Customer Focus and Satisfaction, Service Marketing, Social Responsibility, Human Resource Management (HRM), Employee Satisfaction, Service Culture, Services cape, Continuous Improvement, Technical System, Information and Analysis
10. Bayraktar et al. (2008)	11	Leadership, Vision, Measurement and evaluation, Process control and improvement, Program design, Quality system improvement, Employee involvement, Recognition and reward, Education and training, Student focus, Other stakeholders' focus.

11. Das et al. (2008)	9	Top management commitment, Supplier management, Continuous improvement, Product innovation, Benchmarking, Employee involvement, Reward and recognition, Education and training, Customer focus and Product quality.
12. Mustafa & Bon (2013)	7	Top management /Leadership, Customer Focus, Information & Analysis, Training, Continuous improvement, Employee involvement and Employee empowerment.
13. Talib et al. (2013)	17	Top-management commitment, Customer focus, Training and education, Continuous improvement, Supplier management, Employee involvement, Information and analysis, Process management, Quality systems, Benchmarking, Quality culture, Human resource management, Strategic planning, Employee encouragement, Teamwork, Product/ service design and Communication .



UUM
Universiti Utara Malaysia

Appendix 4 List of MFIs Branches in Yemen



Bridging the Gap

شبكة اليمن للتمويل الأصغر
Yemen Microfinance Network

20th February, 2014

To whom it may concern,

Subject: Microfinance Institutions Branches in the Republic of Yemen.

The Yemen Microfinance Network (YMN) is a member based association registered in 31st August 2009 under the Ministry of Social Affairs and Labor as a non-governmental organization (NGO), having its own board of directors consisting of the microfinance member institutions

YMN scope of work includes the following:

- 1- Training and capacity building for the microfinance industry.
- 2- Transparency in the microfinance sector
- 3- Information Exchange among microfinance players in the country
- 4- Promotion of the microfinance sector.
- 5- Research and development.

YMN member community currently includes 16 MF institutions from all around Yemen.

YMN is pleased to state its member microfinance institutions operating in Yemen together with the number of braches for each single MFI for research purposes according to the table below:

Universiti Utara Malaysia



المبنى رقم ٣، الدور الرابع، مجمع التجاري، شارع جدة
ص.ب- ١٦٠٧٢ - صنعاء - الجمهورية اليمنية
التفون: +٩٦٧ ١ 265 870 فاكس: +٩٦٧ ١ 265 868
info@yemennetwork.org

Building 3, 4th Floor, Commercial Complex, Hadda Street,
P.O. Box: 16072, Sana'a, Republic of Yemen
Tel.: +967 1 265 870 Fax: +967 1 265 868
www.yemennetwork.org



Bridging the Gap

No	Areas of operations	Areas of operations	No of branches till Dec 2013.
1.	Nama'a MF Program	Sana'a-Taiz-Aden-Ibb-Alhodiedah-Hajjah	11
2.	Alawael Microfinance Company	Taiz	3
3.	Azal Islamic Microfinance	Sana'a	3
4.	Hadhramout MF Program	Hodiedah, Seiyon, Tareem, Almokala- Almahrah-Shabwah	7
5.	National MF Foundation	Sana'a-Thamar-Yareem-Ibb- Taiz-Alqaeadah-Lahj-Hajjah-Alhodiedah-Abs.	19
6.	Aden MF Program	Aden-Lahj-Aldahlea	6
7.	Tadhamon Microfinance	Sana'a-Alhodiedah- Bajil- Aden-Taiz-Ibb-almokala- Amran- Abs-Aldinnah-Shabwah-Abyan	16
8.	Social Foundation for Sustainable Development	Sana'a	1
9.	Al-Amal MF Bank	Sana'a-Aden-Taiz-Ibb- Almokala-Alhodeidah-Hajjah-Thamar	19




Bridging the Gap		Sana'a-Aden-Taiz-Altorbah-Alqaeadah-Alhodiedah-Bait Alfaqeeh- Bajil-Ibb-Thamar-Hajjah	19
	Alkuraimi Islamic MF Bank		
11.	Woman Association Sustainable Development	Aden	1
12.	Al Khair Foundation For Social Development	Sana'a	1
13.	YLANG - Estathmer- Small and Micro Enterprise Development Program	Shabwah	1
14.	Al-Rayan Financing Program	Selyon- Saah	2
15.	CAC Bank	All governorates	54 Recently joined the microfinance industry by being a member of YMN.
16.	Union Microfinance Program	Abyan, Almukala, Alshihir,	3

Please be noted that the information provided in this letter are only to be used for research purposes and not for any other matter.

Notes:

- The number of branches continually increases due the rapid growth rate in the microfinance sector in Yemen.
- There are other MFIs existing in the Yemeni market besides the ones mentioned above, however we have only included those members at YMN.

Kind regards,


 Najah Almugahed

Managing Director

Yemen Microfinance Network



Appendix 5 Non-Response Bias Test

Group Statistics

BIAS		N	Mean	Std. Deviation	Std. Error Mean
LM	EARLY	77	4.07	.637	.073
	LATE	48	3.99	.759	.110
CF	EARLY	77	4.54	.569	.065
	LATE	48	4.38	.611	.088
SP	EARLY	77	4.11	.598	.068
	LATE	48	4.19	.757	.109
TR	EARLY	77	3.97	.589	.067
	LATE	48	4.02	.695	.100
CI	EARLY	77	4.12	.677	.077
	LATE	48	4.15	.740	.107
BM	EARLY	77	3.60	.973	.111
	LATE	48	3.87	1.005	.145
QC	EARLY	77	4.22	.445	.051
	LATE	48	4.20	.502	.072
IG	EARLY	77	3.75	.793	.090
	LATE	48	3.89	.787	.114
ID	EARLY	77	3.97	.482	.055
	LATE	48	4.04	.439	.063
RE	EARLY	77	3.63	.831	.095
	LATE	48	3.66	.800	.116
ITK	EARLY	77	4.16	.675	.077
	LATE	48	4.06	.651	.094
ITB	EARLY	77	4.46	.691	.079
	LATE	48	4.43	.699	.101
ITP	EARLY	77	4.16	.525	.060
	LATE	48	4.17	.598	.086
FP	EARLY	77	3.85	.672	.077
	LATE	48	3.97	.687	.099
CP	EARLY	77	4.07	.603	.069
	LATE	48	4.04	.552	.080
PP	EARLY	77	3.67	.586	.067
	LATE	48	3.76	.492	.071
LGP	EARLY	77	4.10	.612	.070
	LATE	48	4.07	.525	.076
SOP	EARLY	77	4.02	.860	.098
	LATE	48	4.11	.771	.111

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
LM	Equal variances assumed	1.196	.276	.636	123	.526	.080	.126	-.170	.330
	Equal variances not assumed			.611	86.994	.543	.080	.131	-.181	.341
CF	Equal variances assumed	.566	.453	1.469	123	.144	.158	.108	-.055	.371
	Equal variances not assumed			1.444	94.415	.152	.158	.109	-.059	.375
SP	Equal variances assumed	.424	.516	-.710	123	.479	-.087	.122	-.328	.155
	Equal variances not assumed			-.672	82.889	.503	-.087	.129	-.343	.170
TR	Equal variances assumed	.919	.340	-.406	123	.685	-.047	.116	-.277	.183
	Equal variances not assumed			-.391	87.560	.697	-.047	.121	-.287	.193
CI	Equal variances assumed	.127	.722	-.269	123	.788	-.035	.129	-.290	.221
	Equal variances not assumed			-.264	93.123	.793	-.035	.132	-.296	.227
BM	Equal variances assumed	.103	.749	-1.488	123	.139	-.270	.181	-.628	.089
	Equal variances not assumed			-1.477	97.361	.143	-.270	.183	-.632	.093
QC	Equal variances assumed	1.035	.311	.175	123	.861	.015	.086	-.155	.185
	Equal variances not assumed			.170	90.860	.865	.015	.088	-.161	.191
IG	Equal variances assumed	.028	.867	-.965	123	.336	-.140	.145	-.428	.147
	Equal variances not assumed			-.967	100.487	.336	-.140	.145	-.428	.148
ID	Equal variances assumed	1.907	.170	-.880	123	.380	-.075	.086	-.245	.094
	Equal variances not assumed			-.900	106.879	.370	-.075	.084	-.241	.091
RE	Equal variances assumed	.302	.584	-.201	123	.841	-.030	.151	-.329	.268

	Equal variances not assumed			-.203	102.733	.840	-.030	.149	-.327	.266
ITK	Equal variances assumed	.174	.677	.798	123	.427	.098	.122	-.145	.340
	Equal variances not assumed			.804	102.545	.423	.098	.121	-.143	.338
ITB	Equal variances assumed	.002	.965	.248	123	.804	.032	.128	-.221	.284
	Equal variances not assumed			.248	99.013	.805	.032	.128	-.222	.286
ITP	Equal variances assumed	.949	.332	-.103	123	.918	-.011	.102	-.212	.191
	Equal variances not assumed			-.100	90.134	.920	-.011	.105	-.219	.198
FP	Equal variances assumed	1.018	.315	-1.032	123	.304	-.129	.125	-.376	.118
	Equal variances not assumed			-1.027	98.212	.307	-.129	.125	-.377	.120
CP	Equal variances assumed	2.276	.134	.234	123	.815	.025	.107	-.188	.238
	Equal variances not assumed			.239	106.506	.811	.025	.105	-.184	.234
PP	Equal variances assumed	1.892	.171	-.876	123	.383	-.089	.102	-.290	.112
	Equal variances not assumed			-.912	112.493	.364	-.089	.098	-.282	.104
LGP	Equal variances assumed	1.605	.208	.235	123	.815	.025	.107	-.186	.236
	Equal variances not assumed			.243	111.144	.808	.025	.103	-.179	.229
SOP	Equal variances assumed	.546	.461	-.563	123	.574	-.086	.152	-.387	.215
	Equal variances not assumed			-.577	107.939	.565	-.086	.148	-.380	.208

Appendix 6
Outliers Result

N	MAH_1	N	MAH_1	N	MAH_1	N	MAH_1
1	39.18376	35	79.08694	69	71.44999	103	52.07244
2	49.0914	36	71.9919	70	77.63944	104	45.80358
3	41.73207	37	97.08926	71	69.07791	105	36.95115
4	36.96378	38	103.37232	72	67.95212	106	50.01113
5	34.12971	39	99.83546	73	73.54678	107	49.92502
6	56.96196	40	92.45439	74	81.95745	108	50.79572
7	34.99547	41	80.50968	75	45.59695	109	35.60298
8	51.38944	42	70.40973	76	42.20342	110	40.99246
9	45.58131	43	69.57523	77	51.6984	111	38.56952
10	44.93443	44	80.3421	78	41.78409	112	42.20342
11	42.4479	45	82.35839	79	32.71984	113	43.76303
12	41.70088	46	80.52454	80	45.50378	114	41.78409
13	45.80358	47	74.73286	81	44.49259	115	32.71984
14	36.95115	48	88.07406	82	39.38655	116	45.50378
15	51.42846	49	87.05939	83	45.16238	117	47.33177
16	64.75316	50	80.55235	84	52.28279	118	45.96098
17	50.79572	51	99.14901	85	49.98286	119	56.04605
18	35.60298	52	77.3996	86	43.19585	120	49.15515
19	40.99246	53	87.37369	87	56.57734	121	49.98286
20	81.27161	54	86.35036	88	46.65402	122	43.19585
21	57.21	55	70.42806	89	51.1928	123	55.56333
22	60.42878	56	70.57398	90	98.28285	124	39.93945
23	75.10549	57	92.68652	91	75.3384	125	51.7462
24	72.78136	58	65.35534	92	39.18376		
25	81.08249	59	78.95639	93	43.62122		
26	57.23549	60	71.33041	94	51.75505		
27	99.85467	61	94.65309	95	36.96378		
28	54.03812	62	62.97757	96	31.46072		
29	85.83555	63	47.63409	97	43.01043		
30	92.19792	64	64.6088	98	35.28223		
31	80.33965	65	80.69982	99	46.76165		
32	83.93848	66	93.07213	100	69.86749		
33	94.545	67	83.95485	101	44.93443		
34	76.23652	68	66.6999	102	42.4479		

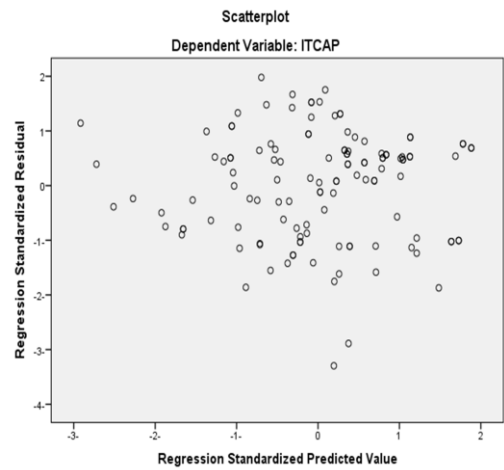
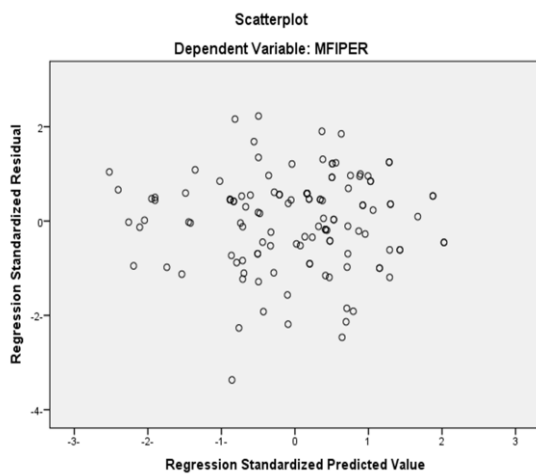
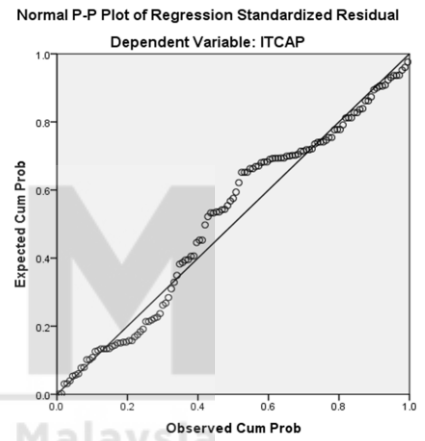
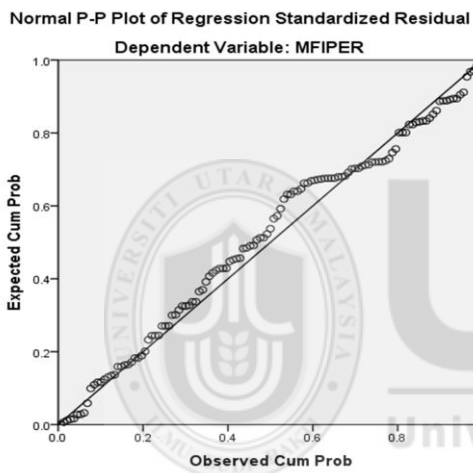
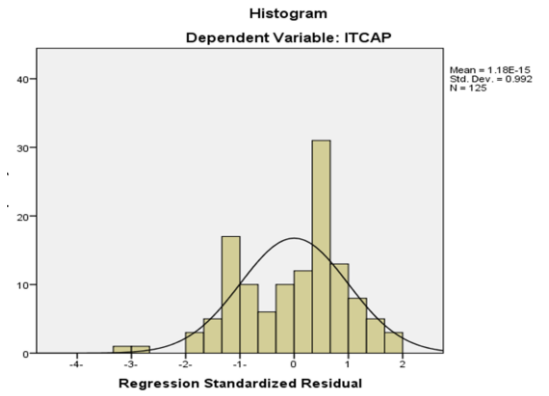
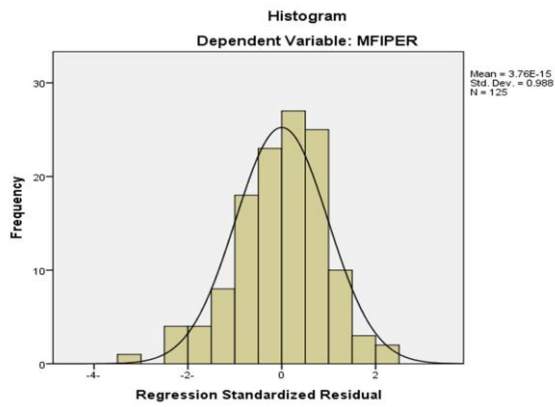
Appendix 7
Skewness and Kurtosis Results for Normality Test

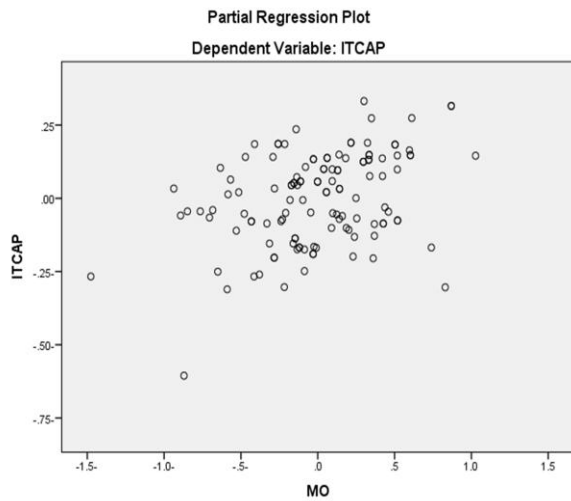
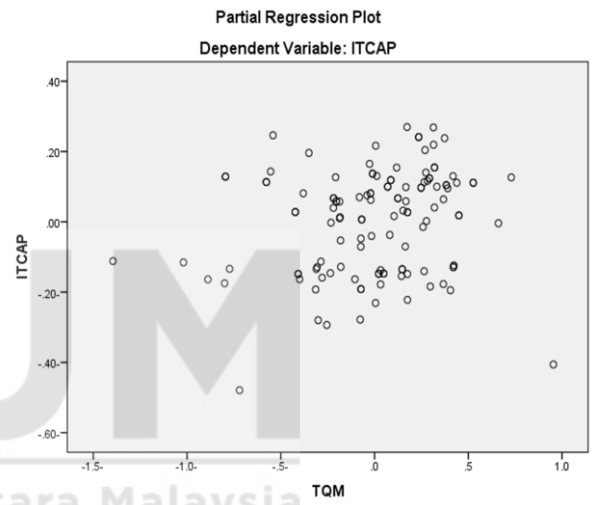
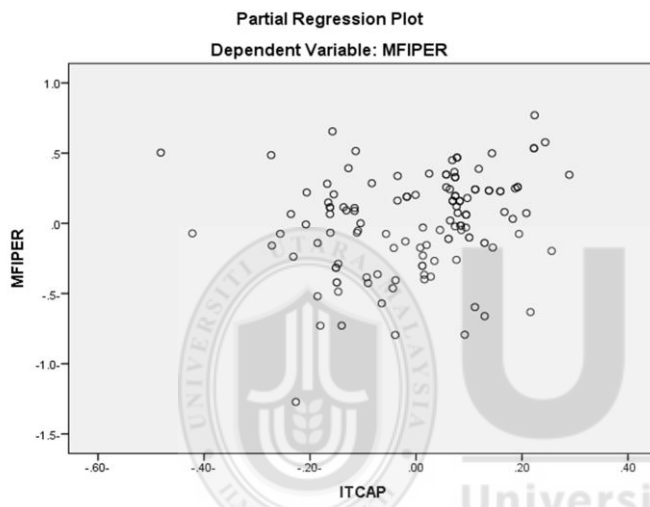
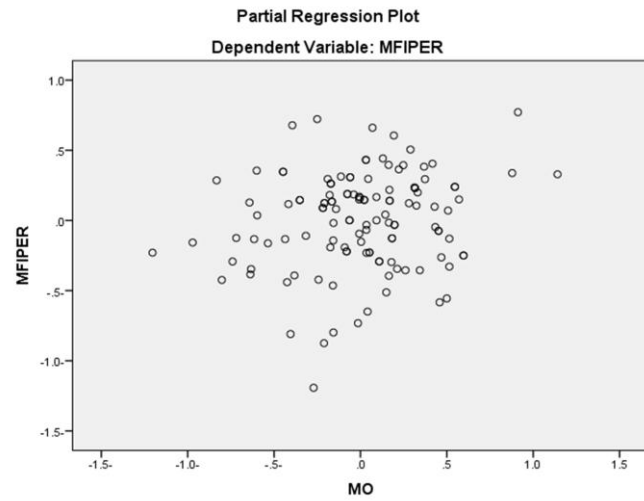
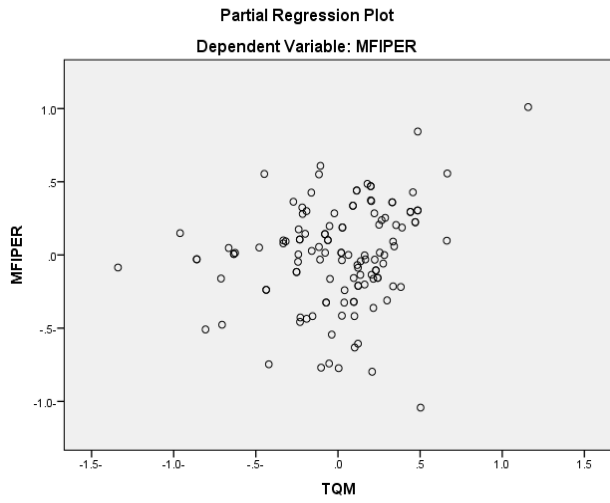
Descriptive Statistics

	N	Mean	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
LM	125	4.04	-1.230	.217	1.656	.430
CF	125	4.48	-1.324	.217	2.104	.430
SP	125	4.14	-.920	.217	1.470	.430
TR	125	3.99	-.962	.217	.970	.430
CI	125	4.13	-1.318	.217	3.034	.430
BM	125	3.70	-.733	.217	.199	.430
QC	125	4.21	-.519	.217	-.484	.430
IG	125	3.80	-.690	.217	.615	.430
ID	125	3.99	-.291	.217	.292	.430
RE	125	3.65	-.504	.217	-.093	.430
ITK	125	4.12	-.701	.217	.364	.430
ITB	125	4.45	-1.033	.217	.006	.430
ITP	125	4.16	-.506	.217	.340	.430
FP	125	3.90	-.459	.217	.100	.430
CP	125	4.06	-.444	.217	.539	.430
PP	125	3.71	.211	.217	-.034	.430
LGP	125	4.09	-.103	.217	-.199	.430
SOP	125	4.05	-1.211	.217	2.008	.430
Valid N (listwise)	125					

Appendix 8

Linearity Test





Appendix 9

Multicollinearity Test

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1 (Constan)	2.213	.273		8.093	.000					
TQM	.215	.084	.255	2.560	.012	.505	.227	.189	.549	1.823
MO	.153	.079	.205	1.943	.054	.506	.174	.143	.488	2.049
ITCAP	.534	.212	.232	2.523	.013	.479	.224	.186	.639	1.565

a. Dependent Variable: MFIPER

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	-.345	.113		-3.064	.003					
TQM	.079	.035	.216	2.253	.026	.502	.200	.163	.571	1.750
MO	.142	.031	.437	4.564	.000	.578	.382	.330	.571	1.750

a. Dependent Variable: ITCAP