CRM IMPACTS ON SMEs PERFORMANCE IN MALAYSIAN FOOD MANUFACTURING INDUSTRY

SITI HAJAR BINTI MOHAMAD

DOCTOR OF PHILOSOPHY

2015
Faculty of Technology Management and Technopreneurship

CRM IMPACTS ON SMEs PERFORMANCE IN MALAYSIAN FOOD MANUFACTURING INDUSTRY

Siti Hajar Binti Mohamad

Doctor of Philosophy

2015
CRM IMPACT ON SMEs PERFORMANCE IN MALAYSIAN FOOD MANUFACTURING INDUSTRY

SITI HAJAR MOHAMAD

A thesis submitted
in fulfillment of the requirements for the degree of Doctor of Philosophy

Faculty of Technology Management and Technopreneurship

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

2015
DECLARATION

I declare that this thesis entitled “CRM Impacts on SMEs Performance in Malaysian Food Manufacturing Industry” is the result of my own research except as cited in the references. The thesis has not been for any degree and is not concurrently submitted in candidature of any other degree.

Signature : …………………………………

Name : SITI HAJAR BT MOHAMAD

Date : 18TH AUGUST 2015
I hereby declare that I have read this thesis and in my opinion this thesis is sufficient in terms of scope and quality as a partial fulfillment of Doctor of Philosophy.

Signature  :  ……………………………………………………………
Supervisor Name  :  DR. NORFARIDATUL AKMALIAH OTHMAN
Date  :  18TH AUGUST 2015
DEDICATION

I dedicate this thesis to my beloved parents Mohamad Lateh and Siti Khadijah Abdul Latif for their endless love and support. To all my siblings Mardiah, Khasmadi, Zahira, Mokhzani, Hafizullah, Mutalib, Hakim, Farhana and Hidayah who has giving me inspiration to take on this journey. Finally, not to forget my fiancée Mohd Sani who has provided me with an upbringing environment and allowing me to pursuit my study without any misgiving.
ABSTRACT

Customer relationship management (CRM) has been successfully implemented in the service industry as well as in large organizations. However, the application of CRM in Small and Medium Enterprises (SMEs) are still arguable. This study aims to investigate the potential of CRM practices in enhancing the performance of SMEs. This study will focus on the management aspects of CRM. The quantitative approach was used to collect data from Malaysian food manufacturers and 2,805 companies have been targeted. There were 453 surveys were returned and 364 surveys used for Structural Equation Modelling analysis. The results indicated that technological CRM resources are not significant with the market orientation and marketing performance. Meanwhile, other constructs namely infrastructural CRM resources, key customer focus and relationship marketing are significant. The results illustrated that market orientation mediated the relationship between infrastructural CRM resources, relationship marketing and market turbulence with marketing performance. In addition market turbulence is a significant moderator toward market orientation and marketing performance, however it is not a significant moderator for market orientation and financial performance. As a result, this test proved the greater support of market performance rather than financial performance. Therefore, this study establishes the latest CRM model that has included infrastructural CRM resources and relationship marketing that is relevant for SMEs in improving their marketing performance. In a managerial point of view, this study provides a valid and applicable solution for small firms to enable companies to adopt and implement CRM in their organization. Subsequently, practical contribution shows that companies implementing CRM will have better performance in term of infrastructural CRM resources, relationship marketing and market orientation. Finally, the CRM model developed as a result of this study is easily adapted to other industries such as the textile industries, herbal industries and craft industries. Further research may be conducted to enhance the CRM model on SMEs in other countries.
ABSTRAK

ACKNOWLEDGEMENTS

This dissertation would not have been possible without the invaluable guidance, support, love and encouragement of many individuals. First, I would like to take this opportunity to express my deepest gratitude to my main supervisor, Dr. Norfaridatul Akmaliah Othman for her supervision, care support, tolerance and encouragement throughout all these years. Academically, she always provides me constructive and insightful advices for my research work.

Second, I acknowledge my second supervisor Associate Professor Dr. Izaidin Abdul Majid and my beloved third supervisor Dr. Juhaini Jabar for being members of my thesis committee and commenting on my thesis. Personally, both of them also takes up the role of family member, friend and teammate to enlighten my personal growth. I am indebted to them for their source of ideas, motivation and inspiration to enable me to complete the research study successfully.

Third, I express my sincere thanks to Dr. Sobhi Ishak and Dr. Juhaini Jabar again for their invaluable statistical analysis support related to structural equation modeling of this thesis. I thank Malaysian Ministry of Education for the financial support and opportunity to bring an aspiration to reality.

I am indebted to my dear friends, Dr. Saodah, Zalizah, Mastura, Fairus, Maizura and many others for providing me emotional and spiritual support so that I have enough
confidence to face the challenges during the preparation of thesis. I am grateful to have them to share my bits and pieces in my life.

Last but not least, I am grateful for Allah’s provision of joys, challenges, and grace for growth in allowing me to complete this thesis.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>DECLARATION</th>
<th>APPROVAL</th>
<th>DEDICATION</th>
<th>ABSTRACT</th>
<th>ABSTRAK</th>
<th>ACKNOWLEDGEMENTS</th>
<th>TABLE OF CONTENTS</th>
<th>LIST OF TABLES</th>
<th>LIST OF FIGURES</th>
<th>LIST OF APPENDICES</th>
<th>LIST OF ABBREVIATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>i</td>
<td>ii</td>
<td>iii</td>
<td>v</td>
<td>viii</td>
<td>xi</td>
<td>xiii</td>
<td>xiv</td>
<td></td>
</tr>
</tbody>
</table>

## CHAPTER

1. **INTRODUCTION**
   - 1.1 Research background 1
   - 1.2 Problem statement 1
   - 1.3 Research objectives 5
   - 1.4 Research questions 6
   - 1.5 Scope of the study 7
   - 1.6 Significance of the study 9
   - 1.7 Definitions used in this study 11
   - 1.8 The organization of the thesis 12

2. **LITERATURE REVIEW**
   - 2.0 Introduction 15
   - 2.1 Overview of CRM 15
   - 2.2 Definitions and perspective of CRM 16
   - 2.3 The role of CRM 18
     - 2.3.1 CRM as strategic tools and practices 18
   - 2.4 Utilization of CRM and its benefits 20
   - 2.5 CRM practices 22
     - 2.5.1 CRM models: a review of the theories 23
   - 2.6 Obstacles to achieving CRM 44
     - 2.6.1 The moderating effect of market turbulence 45
   - 2.7 The impact of CRM in organizations 47
     - 2.7.1 Financial performance 49
     - 2.7.2 Marketing performance 49
   - 2.8 CRM in Malaysia 54
     - 2.8.1 The Malaysian FMI 55
     - 2.8.2 SMEs in the Malaysian FMI 57
     - 2.8.3 Issues of CRM in the FMI 59
   - 2.9 Summary 62
### 3. RESEARCH FRAMEWORK AND HYPOTHESES

3.0 Introduction

3.1 Focus of the research

3.2 Research questions

3.3 Research framework and research hypotheses

3.4 Research hypotheses

3.4.1 CRM practices and market orientation

3.4.2 CRM practices and organizational performance

3.4.3 Market orientation and organizational performance

3.4.4 Mediating role of market orientation

3.4.5 Moderating effect of market turbulence

3.5 Summary

### 4. RESEARCH METHODOLOGY

4.0 Introduction

4.1 Research paradigm

4.2 Operationalization of variables

4.2.1 Measurement for demographic profile

4.2.2 Measurement for organizational performance

4.2.3 Measurement for mediation of market orientation

4.2.4 Measurement for moderator of market turbulence

4.3 Questionnaire research instrument

4.3.1 Pilot testing of questionnaire

4.3.2 Final questionnaire

4.4 Population and sampling

4.4.1 Key informant

4.4.2 Data collection process

4.4.3 Non-response bias

4.4.4 Missing data

4.4.5 Check for outliers

4.4.6 Distribution of respondents

4.5 Data analysis procedure

4.5.1 Scale reliability and validity

4.5.2 Structural equation modelling

4.5.3 Estimation procedure

4.6 Assessment of statistical fit

4.7 Summary

### 5. ANALYSIS AND RESULTS

5.0 Introduction

5.1 Sample size

5.2 Participant characteristics

5.3 Missing data

5.4 Multivariate normality and outliers

5.5 Test for non-response bias

5.5.1 The use of sample profile

5.6 Factor analysis

5.6.1 Resource availability
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.6.2</td>
<td>Marketing capability</td>
<td>151</td>
</tr>
<tr>
<td>5.6.3</td>
<td>Organizational performance</td>
<td>163</td>
</tr>
<tr>
<td>5.6.4</td>
<td>Market orientation</td>
<td>171</td>
</tr>
<tr>
<td>5.6.5</td>
<td>Market turbulence</td>
<td>176</td>
</tr>
<tr>
<td>5.6.6</td>
<td>Summary of CFA result</td>
<td>178</td>
</tr>
<tr>
<td>5.7</td>
<td>Model modification</td>
<td>178</td>
</tr>
<tr>
<td>5.7.1</td>
<td>Theoretical consideration</td>
<td>179</td>
</tr>
<tr>
<td>5.7.2</td>
<td>The modified model</td>
<td>181</td>
</tr>
<tr>
<td>5.8</td>
<td>Full measurement model</td>
<td>183</td>
</tr>
<tr>
<td>5.9</td>
<td>Item parcelling</td>
<td>186</td>
</tr>
<tr>
<td>5.10</td>
<td>Reliability and validity of constructs</td>
<td>187</td>
</tr>
<tr>
<td>5.11</td>
<td>Structural model and hypotheses testing</td>
<td>189</td>
</tr>
<tr>
<td>5.12</td>
<td>Testing for mediation role of market orientation</td>
<td>192</td>
</tr>
<tr>
<td>5.12.1</td>
<td>Analysis result of mediating relationship – infrastructural CRM resources</td>
<td>194</td>
</tr>
<tr>
<td>5.12.2</td>
<td>Analysis result of mediating relationship – technological CRM resources</td>
<td>196</td>
</tr>
<tr>
<td>5.12.3</td>
<td>Analysis result of mediating relationship – key customer focus</td>
<td>198</td>
</tr>
<tr>
<td>5.12.4</td>
<td>Analysis result of mediating relationship – relationship marketing</td>
<td>200</td>
</tr>
<tr>
<td>5.12.5</td>
<td>Summary of mediation analysis result</td>
<td>202</td>
</tr>
<tr>
<td>5.13</td>
<td>Testing for moderation effect of market turbulence</td>
<td>202</td>
</tr>
<tr>
<td>5.14</td>
<td>Summary</td>
<td>204</td>
</tr>
</tbody>
</table>

6. DISCUSSIONS
6.0 Introduction                                  206
6.1 Discussion of the results                     206
6.2 Summary                                       209

7. CONCLUSION AND RECOMMENDATIONS
7.0 Introduction                                  214
7.1 Summary                                       214
7.2 Research contributions to knowledge           216
7.3 Research contributions to practitioners       219
7.4 Limitations of the study                      221
7.5 Future research directions                    222
7.6 Conclusion                                    223

REFERENCES

APPENDICES
# LIST OF TABLES

<table>
<thead>
<tr>
<th>TABLE</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Summary of research objectives, questions and hypotheses</td>
<td>91</td>
</tr>
<tr>
<td>4.1</td>
<td>The summary of demographic profile questions</td>
<td>96</td>
</tr>
<tr>
<td>4.2</td>
<td>Items measuring of resource-based view</td>
<td>99</td>
</tr>
<tr>
<td>4.3</td>
<td>Item measurement of relationship marketing theory</td>
<td>101</td>
</tr>
<tr>
<td>4.4</td>
<td>Items measurement of organizational performance</td>
<td>104</td>
</tr>
<tr>
<td>4.5</td>
<td>Items measurement of market orientation</td>
<td>106</td>
</tr>
<tr>
<td>4.6</td>
<td>Items measurement of market turbulence</td>
<td>107</td>
</tr>
<tr>
<td>4.7</td>
<td>Small and medium enterprises according the gross output and number of establishment by industry in 2010</td>
<td>111</td>
</tr>
<tr>
<td>4.8</td>
<td>Frequency of respondents by food manufacturing sector</td>
<td>116</td>
</tr>
<tr>
<td>4.9</td>
<td>Distribution of respondents by firm size and industry type</td>
<td>119</td>
</tr>
<tr>
<td>4.10</td>
<td>Summary of the research methodology applied in this study</td>
<td>127</td>
</tr>
<tr>
<td>4.11</td>
<td>Summary of data analysis processes and assessment of fit indices</td>
<td>127</td>
</tr>
<tr>
<td>5.1</td>
<td>Respondent’s firm size</td>
<td>131</td>
</tr>
<tr>
<td>5.2</td>
<td>Type of food manufacturing sector of population</td>
<td>132</td>
</tr>
<tr>
<td>5.3</td>
<td>Respondent’s annual sales turnover</td>
<td>132</td>
</tr>
<tr>
<td>5.4</td>
<td>Cases with missing values</td>
<td>134</td>
</tr>
<tr>
<td>5.5</td>
<td>Non-response bias assessments</td>
<td>137</td>
</tr>
</tbody>
</table>
5.6 Non-response bias assessments for sample profile
5.7 Assessments of statistical fit
5.8 Descriptive statistics of resource availability items
5.9 Exploratory factor analysis of resource availability items
5.10 Exploratory factor analysis of resource availability items
5.11 Discriminant validity using factor pattern and structure coefficients for resource availability items
5.12 Factor analysis for resource availability items
5.13 Descriptive statistics of marketing capability items
5.14 Exploratory factor analysis of marketing capability items 1
5.15 Exploratory factor analysis of marketing capability items 2
5.16 Exploratory factor analysis of marketing capability items 3
5.17 Factor analysis for marketing capability items
5.18 Discriminant validity using factor pattern and structure coefficients for marketing capability items
5.19 Descriptive statistics of organizational performance items
5.20 Exploratory factor analysis of organizational performance items
5.21 Exploratory factor analysis of marketing and financial performance items
5.22 Factor analysis for organizational performance items
5.23 Discriminant validity using factor pattern and structure coefficients for organizational performance items
5.24 Descriptive statistics of market orientation items
5.25 Factor analysis for market orientation items
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>CRM model developed by Keramati et al. (2010)</td>
<td>24</td>
</tr>
<tr>
<td>2.2</td>
<td>CRM model developed by Sin et al. (2005)</td>
<td>24</td>
</tr>
<tr>
<td>3.1</td>
<td>Research framework and hypotheses for elements of CRM practices and organizational performance through market orientation and market turbulence</td>
<td>68</td>
</tr>
<tr>
<td>4.1</td>
<td>Percentage share of SMEs in the manufacturing industry by sub-sectors</td>
<td>112</td>
</tr>
<tr>
<td>5.1</td>
<td>Years in operation</td>
<td>131</td>
</tr>
<tr>
<td>5.2</td>
<td>Total of CRM practices in organization</td>
<td>133</td>
</tr>
<tr>
<td>5.3</td>
<td>Scree plot of resource availability items</td>
<td>146</td>
</tr>
<tr>
<td>5.4</td>
<td>Standardized parameters estimated in one-factor congeneric validation model for infrastructural CRM resources ( n = 200 )</td>
<td>147</td>
</tr>
<tr>
<td>5.5</td>
<td>Standardized parameters estimated in two-factor validation model for resource availability ( n = 200 )</td>
<td>148</td>
</tr>
<tr>
<td>5.6</td>
<td>Scree plot of marketing capability items</td>
<td>153</td>
</tr>
<tr>
<td>5.7</td>
<td>Standardized parameters estimated in one-factor congeneric validation model for key customer focus ( n = 200 )</td>
<td>157</td>
</tr>
</tbody>
</table>
5.8 Standardized parameters estimated in one-factor congeneric validation model for relationship marketing (n = 200) 158
5.9 Standardized parameters estimated in two-factor validation model for marketing capability (n = 200) 160
5.10 Scree plot of organizational performance items 165
5.11 Standardized parameters estimated in one-factor congeneric validation model for financial performance (n = 200) 168
5.12 Standardized parameters estimated in two factor validation model for organizational performance (n = 200) 169
5.13 Scree plot of market orientation items 173
5.14 Standardized parameters estimated in one-factor congeneric validation model for market orientation (n = 200) 173
5.15 Scree plot of market turbulence items 177
5.16 Initial model 182
5.17 Modified model 182
5.18 Full measurement model for elements of customer relationship management and its impact on Malaysian food manufacturer industry (N=364) 184
5.19 Standardized parameters estimated in structural equation model for elements of CRM practices and its impact toward Malaysian food manufacturer industry performance (N = 364) 190
5.20 Results of a path analysis for the elements and impacts of customer relationship management of Malaysian food manufacturers 191
5.21 Mediating relationship 193
<table>
<thead>
<tr>
<th>APPENDIX</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Invitation letter</td>
<td>288</td>
</tr>
<tr>
<td>B</td>
<td>Research instrument</td>
<td>289</td>
</tr>
<tr>
<td>C</td>
<td>Missing data analysis</td>
<td>293</td>
</tr>
<tr>
<td>D</td>
<td>Multivariate normality</td>
<td>295</td>
</tr>
</tbody>
</table>
LIST OF ABBREVIATIONS

CRM  - Customer relationship management
RBV  - Resources-based view
RMT  - Relationship marketing theory
MOT  - Market orientation theory
SMEs - Small and medium enterprises
MATRADE - Malaysian External Trade Development Corporation
FMI   - Food manufacturing industry
SHRM - Strategic human resources management
GDP   - Gross domestic product
χ²   - Chi-square
p    - Significant value
df   - Degree of freedom
RMSEA - Root mean square error of approximation
SRMR - Standardized root-mean-square
GFI   - Goodness of fit index
NFI   - Normal fit index
TLI   - Tucker Lewis index
CFI   - Comparative fit index
GOF   - Goodness-of-fit
SEM   - Structural equation modeling
AMOS - Analysis of moment structures
EM    - Expectation-maximization
MCAR - Missing completely at random
cr    - Critical ratio
Sig   - Significant
CHAPTER 1

INTRODUCTION

This chapter discusses the research background, problem statement, research objectives, research questions, and the scope and significance of the study. It also underlines the need for more research on the practices of customer relationship management (CRM) in developing countries, as CRM can allow organizations to remain competitive and to achieve higher organizational performance. Additionally, this chapter examines the impact of CRM practices on organizational performance in the food manufacturing industry (FMI). Finally the organization of the thesis are presented in this chapter.

1.1 Research background

In recent years, many organizations have identified the need to become more customer orientated in the rapid global competition (Bull, 2003). As a consequence, CRM has increased its effort to meet the organizational strategies agenda (Bull, 2003). This study, CRM has emphasized management field rather than marketing field. The CRM could be responsible to improve the performance of small and medium enterprises (SMEs).

CRM is defined as a managerial strategy that helps firms to identify, attract, analyse and manage the customers details in order to retain the relationship with firms
and customers (Hung et al., 2010; Sin et al., 2005). As CRM is part of marketing, it manages customers where the main role is to reduce cost of retaining customers as well as increase organization profitability.

The practice of CRM is different based on their political, cultural, technological and industrial situations. Day (2003) posits that customer relationship management have been regarded as important compared to common transactional exchanges due to their ability to create sustainable competitive advantages and superior business performance.

In the case of Malaysia, CRM research has already implemented at its beginning level by many researchers; especially for the SMEs, due to the limited scope and depth reflected in the empirical and generalizable research (Reddick, 2011; Labus and Stone, 2010; Lo et al., 2010; Mitussis et al., 2006; Sin et al., 2005). In Malaysia, SMEs known as non-performance sectors due to the lacking and limited capability to success. In inevitably, this sector (SMEs) need an improvement to overcome their weakness in order to maintain the nation’s development. According to Department of statistics (DOS (2011), 99.2% of Malaysian establishments can be classed as SMEs.

However, SMEs’ business and marketing approaches may differ to those of larger organizations. In Malaysian manufacturing sector, SMEs are the second largest contributor to the country’s gross domestic production (GDP), contributing 4.8% in the year 2012; this is expected to grow to 28.5% of GDP by 2020, with total investments of RM412.2 billion (IMP3, 2006-2020). SMEs is also an important component of the Malaysian economy; even though their marketing strategies are inferior from those of large organizations, they are no less important. Improving customer relationships and building unique strengths and competitive advantage are becoming more important for SMEs to be more competitive in the industry.
Initially, CRM has proven a successful marketing strategy in marketing and financial performance (i.e. Akroush et al., 2011; Keramati et al., 2010; Sin et al., 2005). However, the studies had focused on CRM in the larger corporations of service industry in the developed countries. Hence, CRM could be applied to explore the marketing strategy in the context of Malaysian SMEs firm as reported by Akroush et al. (2011) and Tereso and Bernardino (2011). It has the potential to improve their business value and capabilities.

The importance of CRM in the SMEs could be seen as to overcome the sector’s lacking in manufacturing activities, slowly in grabbing the resources in commodity industry as to compare to larger industries. Thus, to gain more competitive advantage over rivals and to improve business value, SMEs need to integrate CRM practices into their business operations. Managing the aspect of CRM in SMEs organizations is very important, in creating interaction between the organization and its customers in order to develop business solutions according to the customers’ specific problems and demands (Choy et al., 2002).

Additionally, research on CRM in Malaysia has focused on technology and relationship management (Ab Hamid and Kassim, 2004), knowledge management (Sulaiman et al., 2011), CRM barriers (Kavosh et al., 2011), CRM technology (Samsudin et al., 2011), the critical success factors of CRM (Arab et al., 2010), customer relationships (Labus and Stone, 2010) and CRM systems, mostly in the service industry (Rababah et al., 2011).

Nevertheless, studies on the CRM practices in SMEs firm is quite limited. Therefore, it is important to conduct a research on CRM in the Malaysian SMEs and to investigate the enterprises’ capabilities pertaining the customer relationship management activities. As the study is focusing on FMI, the research is crucial in developing the
understanding of CRM elements that could improve the organizational performance. Consequently, the implementation of CRM will be easier in food manufacturer firms if they have good marketing strategy.

There are two factors which influence the marketing strategy on CRM practices. The factors are market orientation and market turbulence. Market orientation has been addressed as a mediator construct as it is an important resource in the creation of competitive advantage in business (Liyun et al., 2008). Narver and Slater (1990) argued that market orientation is an organizational culture that helps businesses to create added value for customers. Accordingly, this study could address the short coming of CRM in Malaysian SMEs in FMI.

Market turbulence is chosen as a relevant moderator variable in this analysis, since prior research has recognized its influence on the relationship between the marketing strategy and performance outcomes (Sin et al., 2005). Thus, market turbulence is a perfect moderator in this study in order to answer the research question and to fill up the research gap.

The previous researcher had used factor analysis and regression analysis in their CRM studies. However, this study will apply the powerful tool of Structural Equation Modelling (SEM). The primary purpose of choosing SEM rather than factor analysis or multiple regression analysis in SPSS is, the SEM is more accurate and would be able to give the best result where the relationship model should portray some underlying theory. SEM also enabled two multivariate procedures of factor analysis and multiple regression to be combined (Hair et al., 2010).

Not only does SEM aim to analyse latent constructs, in particularly the analysis of causal links between latent constructs, but also it is efficient for other types of analyses including estimating variance and covariance, test hypotheses, conventional linear