ENTREPRENEURIAL ORIENTATION, ABSORPTIVE CAPACITY, MARKET ORIENTATION AND TECHNOLOGICAL INNOVATION CAPABILITIES OF SMES IN KURDISTAN, IRAQ

By

ABDULQADIR RAHOME AHMED AL-JANABI

DOCTOR OF PHILOSOPHY
UNIVERSITI UTARA MALAYSIA
January 2016
ENTREPRENEURIAL ORIENTATION, ABSORPTIVE CAPACITY, MARKET ORIENTATION AND TECHNOLOGICAL INNOVATION CAPABILITIES OF SMES IN KURDISTAN, IRAQ

By

ABDULQADIR RAHOME AHMED AL-JANABI

Thesis Submitted to
Othman Yeop Abdullah Graduate School of Business,
University Utara Malaysia,
in Fulfillment of the Requirement for the Degree of Doctor of Philosophy
Kolej Perniagaan
(College of Business)
Universiti Utara Malaysia

PERAKUAN KERJA TESIS / DISERTASI
(Certification of thesis / dissertation)

Kami, yang bertandatangan, memperakuan bahawa
(We, the undersigned, certify that)

ABDULQADIR RAHOMEH AHMED

calon untuk ijazah (candidate for the degree of)

DOCTOR OF PHILOSOPHY (MARKETING)

telah mengemukakan tesis / disertasi yang bertajuk
(has presented his/her thesis / dissertation of the following title)

ENTREPRENEURIAL ORIENTATION, ABSORPTIVE CAPACITY, MARKET ORIENTATION AND TECHNOLOGICAL INNOVATION CAPABILITIES OF SMEs IN KURDISTAN, IRAQ

seperti yang tercatat di muka surat baku dan kuit tesis / disertasi.
(as it appears on the title page and front cover of the thesis / dissertation).

Bahawa tesis/disertasi tersebut boleh diterima dari segi bentuk serta kandungan dan meliputi bidang ilmu dengan memuaskan, sebagaimana yang ditunjukkan oleh calon dalam ujian lisan yang diadakan pada:

26 Januari 2016. (That the said thesis/dissertation is acceptable in form and content and displays a satisfactory knowledge of the field of study as demonstrated by the candidate through an oral examination held on:

26 January 2016).

Pengesah Viva (Chairman for Viva)

Assoc. Prof. Dr. Salniza Bt. Md. Salleh

Tanda tangan (Signature)

Pemeriksa Luar (External Examiner)

Assoc. Prof. Dr. Mohammad B. Ismail

Tanda tangan (Signature)

Pemeriksa Dalam (Internal Examiner)

Prof. Dr. Rosli B. Mahmood

Tanda tangan (Signature)

Tarikh: 26 Januari 2016
(Date)
Nama Pelajar
(Name of Student) : Abdulqadir Rahomoe Ahmed

Judul Tesis / Disertasi
(Title of the Thesis / Dissertation) : Entrepreneurial Orientation, Absorptive Capacity, Market Orientation and Technological Innovation Capabilities of SMEs in Kurdistan, Iraq

Program Pengajian
(Programme of Study) : Doctor of Philosophy (Marketing)

Nama Penyelidik/Penyelidik
(Name of Supervisor/Supervisors) : Assoc. Prof. Dr. Nor Azila Mohd Noor

Tanda Tangan
(Signature)
In presenting this thesis as part of the fulfilment of the requirement for the degree of doctor of philosophy from University Utara Malaysia, I agree that the University library may make it freely available for inspection. I also agree with the permission for copying of this thesis in any manner, whether in whole or in part for scholarly purposes may be granted by my supervisor or in her absence by the Dean of Othman Yeop Abdullah Graduate School of Business, University Utara Malaysia. It is understood that any copying or publication or use of this thesis or its parts thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to UUM in any scholarly use that may comprise of any material from my thesis.

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

Dean of Othman Yeop Abdullah Graduated School of Business
Universiti Utara Malaysia
06010 UUM Sintok
Kedah Darul Aman.
ABSTRACT

Innovation capabilities have become an important component for small and medium enterprises (SMEs) in the industrial sector to cope with intense competition and to meet customers’ needs. Due to inconsistency in the findings of previous studies on the antecedent factors that may influence these capabilities, this study intended to empirically examine the relationships between entrepreneurial orientation, absorptive capacity, market orientation, and technological innovation capabilities among the industrial SMEs in an unstable environment, and also to determine whether market orientation has a mediating role in the relationship between entrepreneurial orientation, absorptive capacity, and technological innovation capabilities. This study adopted the Resource-Based Theory as an underpinning theory for its assumptions and to develop its model. Self-administered questionnaires were distributed to the industrial SMEs owners in the Kurdistan region of Iraq. A total of 432 innovative enterprises were involved in this study, making an overall 63.9% response rate. This study utilized the partial least squares structural equation modelling (PLS-SEM) to establish the validity and reliability of the measurement model and to test the relationships. The outcomes of this study show that both absorptive capacity and entrepreneurial orientation have significant influences on technological innovation capabilities. Furthermore, the results indicate that market orientation has a partial mediating role in the nexus between absorptive capacity and technological innovation capabilities, but it has not been found to mediate the relationship between entrepreneurial orientation and technological innovation capabilities. This study offers theoretical and practical contributions for academics and professionals. The limitations of the study have been addressed and some valuable suggestions for future research work are offered.

Keywords: absorptive capacity, entrepreneurial orientation, market orientation, technological innovation capabilities.
ABSTRAK

Keupayaan inovasi telah menjadi satu komponen penting bagi industri kecil dan sederhana (IKS) dalam sektor industri untuk menghadapi persaingan sengit dan memenuhi keperluan pelanggan. Oleh kerana dapatan kajian terdahulu mengenai faktor-faktor yang boleh mempengaruhi keupayaan-keupayaan ini didapati tidak konsisten, maka kajian ini cuba untuk mengkaji secara empirikal hubungan antara orientasi keusahawanan, kemampuan untuk menyerap, orientasi pasaran, dan keupayaan inovasi teknologi bagi industri IKS dalam persekitaran yang tidak stabil. Selain itu, kajian ini juga bertujuan untuk menentukan sama ada orientasi pasaran memainkan peranan sebagai perantara dalam hubungan antara orientasi keusahawanan, kemampuan untuk menyerap, dan keupayaan inovasi teknologi. Kajian ini menggunakan teori berasaskan sumber sebagai teori yang menjadi asas bagi andaian dan asas untuk membangunkan modelnya. Soal selidik tadbir kendiri telah diedarkan kepada pemilik industri IKS di wilayah Kurdistan, Iraq. Sebanyak 432 buah syarikat inovatif terlibat dalam kajian ini, menjadikan kadar tindak balas secara keseluruhan sebanyak 63.9%. Kajian ini menggunakan pemodelan persamaan terkecil berstruktur (PLS-SEM) bagi mewujudkan kesahan dan kebolehpercayaan pengukuran model dan untuk menguji hubungan-hubungan tersebut. Hasil kajian ini menunjukkan bahawa kemampuan untuk menyerap dan orientasi keusahawanan mempunyai pengaruh yang besar ke atas keupayaan inovasi teknologi. Tambahan pula, keputusan menunjukkan bahawa orientasi pasaran memainkan peranan sebagai perantara dalam pertalian antara kemampuan untuk menyerap dan keupayaan inovasi teknologi tetapi tidak menjadi perantara bagi hubungan antara orientasi keusahawanan dan keupayaan inovasi teknologi. Kajian ini memberikan sumbangan dalam bidang teori dan praktikal kepada ahli akademik dan profesional. Batasan bagi kajian ini telah ditangani dan beberapa cadangan yang bernilai bagi kajian akan datang turut dikemukakan.

Kata kunci: kemampuan menyerap, orientasi keusahawanan, orientasi pasaran, keupayaan inovasi teknologi.
ACKNOWLEDGEMENT

It is with immense gratitude that I acknowledge the huge support and help of some people.

Foremost, I would like to express my sincere gratitude to my advisor Assoc. Prof. Dr. Nor Azila Mohd Noor for the continuous support of my Ph.D study and research, for her patience, motivation, enthusiasm, and immense knowledge. Her guidance helped me in all the time of research and writing of this thesis. I could not have imagined having a better advisor and mentor for my Ph.D. study.

Besides my advisor, I would like to thank the rest of my thesis committee: Assoc. Prof. Dr. Salniza Md Salleh, Prof. Dr. Rosli Mahmood, Assoc. Prof Dr. Mohammad Ismail, for the constructive comments and invaluable suggestions.

My sincere thanks also goes to Prof. Dr. Hassan Ali, Prof. Dr. Dileep Kumar, Assoc. Prof Dr. Faiz Ahmad, and Prof. Dr. Nik Kamariah Bt Nik Mat, for offering me the best Knowledge in the field of scientific research and leading me working on diverse exciting researches.

All my gratitude to my father, mother for supporting me spiritually throughout all steps of my life.

I would like to thank my wife for standing beside me throughout my career and writing this research. She has been my supporter for continuing to improve my knowledge and move my career forward.

My deepest appreciation for all brothers, sisters and all my family members for their support and prayers.

Thanks also go to all friends and SMEs owners who helped me in the data collection stage in the Kurdistan region of Iraq and OYA-GSB office staff for their continuing cooperation.
TABLE OF CONTENTS

Title .......................................................... Page

TITLE PAGE ....................................................... i
CERTIFICATION OF THESIS WORK ..................... iii
PERMISSION TO USE ......................................... v
ABSTRACT ........................................................ vi
ABSTRAK ......................................................... vii
ACKNOWLEDGEMENTS ......................................... viii
TABLE OF CONTENTS ........................................ ix
LIST OF TABLES ............................................... xiii
LIST OF FIGURES ................................................ xv
LIST OF APPENDICES ......................................... Xvi
LIST OF ABBREVIATIONS ....................................... xvii

CHAPTER ONE: INTRODUCTION ........................................ 1
1.1 Research Background ........................................ 1
1.2 Research Problem ........................................... 8
1.3 Research Questions ........................................... 17
1.4 Research Objectives ......................................... 18
1.5 Significance of the Study ..................................... 19
1.6 Definition of terms .......................................... 24
1.7 Research Scope .............................................. 25
1.8 Organization of the Thesis ................................. 25

CHAPTER TWO: LITERATUR REVIEW .................................. 27
2.1 Introduction ................................................. 27
2.2 Technological Innovation Capabilities .................. 27
   2.2.1 Product Innovation Capabilities .................... 35
   2.2.2 Process Innovation Capabilities .................... 37
2.3 Innovation-Related Terms ................................... 41
Section 3: Independent Variable – Entrepreneurial Orientation .............. 109
Section 4: Independent Variable – Absorptive Capacity ......................... 111
Section 5: Mediator Variable – Market Orientation .............................. 113
3.9 Questionnaire translation ........................................................................ 115
3.10 Pilot study ............................................................................................. 116
   3.10.1 Instrument Validity ......................................................................... 117
   3.10.2 Instrument reliability ..................................................................... 118
3.11 Data Collection Procedures ................................................................. 121
3.12 Data Analysis Techniques .................................................................... 123
   3.12.1 Descriptive Analysis ................................................................. 123
   3.12.2 Hypotheses Testing ................................................................. 123
3.13 Chapter Summary .................................................................................. 125

CHAPTER FOUR: DATA ANALYSIS AND RESULTS ........................................ 126
4.1 Introduction ............................................................................................. 126
4.2. Demographic Distribution of the Respondents ..................................... 126
4.3 Testing Non-Response Bias .................................................................... 132
4.4 Descriptive Statistics ............................................................................. 134
4.5 Testing the Goodness of the Measurements ........................................... 135
   4.5.1 Testing the Measurement Model of “Outer Model” using PLS
        approach ........................................................................................ 135
   4.5.2 The Assessment of the Structural “Inner” Model and Hypotheses
        Testing Procedures ......................................................................... 156
4.6 Mediation Effect Analysis ...................................................................... 159
4.7 The Prediction Quality of the Model ....................................................... 164
   4.7.1 R squared Value and Effect Size .................................................. 164
   4.7.2 Cross-Validated Redundancy ....................................................... 165
   4.7.3 The Model’s Overall Goodness of Fit ........................................... 166
4.8 Chapter Summary .................................................................................... 167

CHAPTER FIVE: DISCUSSION, CONCLUSION AND
RECOMMENDATIONS ................................................................................. 168
5.1 Introduction ............................................................................................. 168
5.2 Recapitulation of the Research Findings ................................................................. 168
5.3 Discussion ............................................................................................................... 172
  5.3.1 The effects of exogenous variables (Entrepreneurial Orientation and Absorptive Capacity) on Technological Innovation Capabilities ........... 172
  5.3.2 The effects of exogenous variables (Entrepreneurial Orientation and Absorptive Capacity) on Market Orientation................................. 175
  5.3.3 The effects of Market Orientation on Technological Innovation Capabilities ......................................................................................... 178
  5.3.4 The Mediation role of Market Orientation .................................................... 180
5.4 Research Contributions and Implications .............................................................. 183
  5.4.1 Theoretical Contributions ......................................................................... 184
  5.4.2 Practical Implications ........................................................................... 190
5.5 Limitations of the Study ......................................................................................... 193
5.6 Directions for Future Research ........................................................................... 195
5.7 Conclusion ............................................................................................................ 197
REFERENCES ............................................................................................................. 199
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 2.1</td>
<td>Innovation definitions</td>
</tr>
<tr>
<td>Table 2.2</td>
<td>Market orientation definitions</td>
</tr>
<tr>
<td>Table 3.1</td>
<td>Industrial Activities for the Target Population</td>
</tr>
<tr>
<td>Table 3.2</td>
<td>Sample distribution on each industrial activities based on its percentage from entire target population</td>
</tr>
<tr>
<td>Table 3.3</td>
<td>List of research variables</td>
</tr>
<tr>
<td>Table 3.4</td>
<td>Technological Innovation Measures</td>
</tr>
<tr>
<td>Table 3.5</td>
<td>Entrepreneurial Orientation Measures</td>
</tr>
<tr>
<td>Table 3.6</td>
<td>Absorptive Capacity Measures</td>
</tr>
<tr>
<td>Table 3.7</td>
<td>Market Orientation Measures</td>
</tr>
<tr>
<td>Table 3.8</td>
<td>Factor Analysis and Reliability of the Final Instrument (Pilot Study)</td>
</tr>
<tr>
<td>Table 4.1</td>
<td>Respondent According to Filter Question</td>
</tr>
<tr>
<td>Table 4.2</td>
<td>Procedures of Missing Data Status</td>
</tr>
<tr>
<td>Table 4.3</td>
<td>Returned questionnaires</td>
</tr>
<tr>
<td>Table 4.4</td>
<td>Participant’s Demographic Information</td>
</tr>
<tr>
<td>Table 4.5</td>
<td>Group Statistics of Independent Sample t-test</td>
</tr>
<tr>
<td>Table 4.6</td>
<td>Independent Sample t-test Results for Non-Response Bias</td>
</tr>
<tr>
<td>Table 4.7</td>
<td>Descriptive Statistics of the Constructs</td>
</tr>
<tr>
<td>Table 4.8</td>
<td>The Cross Loadings Factors for Exogenous and Endogenous variables</td>
</tr>
<tr>
<td>Table 4.9</td>
<td>Significance of the factor loading</td>
</tr>
<tr>
<td>Table 4.10</td>
<td>Convergent Validity Analysis</td>
</tr>
<tr>
<td>Table 4.11</td>
<td>Correlations and discriminant validity</td>
</tr>
<tr>
<td>Table 4.12</td>
<td>Heterotrait-Monotrait Ratio (HTMT) criterion values</td>
</tr>
<tr>
<td>Table 4.13</td>
<td>Heterotrait-Monotrait (HTMT) statistical test</td>
</tr>
<tr>
<td>Table 4.14</td>
<td>Establishment of Second-Order Constructs</td>
</tr>
<tr>
<td>Table 4.15</td>
<td>Results of the Structural “Inner” Model</td>
</tr>
</tbody>
</table>
Table 4.16   Testing the Mediation Effect of Market Orientation (MO) .................. 164
Table 4.17   Effect Size on Endogenous Variables ........................................ 165
Table 4.18   Prediction Relevance of the Model ............................................. 166
<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 2.1</td>
<td>Theoretical Research Framework</td>
<td>79</td>
</tr>
<tr>
<td>Figure 4.1</td>
<td>Research Model</td>
<td>135</td>
</tr>
<tr>
<td>Figure 4.2</td>
<td>Path Algorithm Results</td>
<td>137</td>
</tr>
<tr>
<td>Figure 4.3</td>
<td>Path Analysis Result</td>
<td>157</td>
</tr>
<tr>
<td>Figure 4.4</td>
<td>The Impact of EO, ACAP, MO on TIC</td>
<td>159</td>
</tr>
<tr>
<td>Figure 4.5</td>
<td>The Direct Paths Model (c)</td>
<td>161</td>
</tr>
</tbody>
</table>
LIST OF APPENDICES

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix A1</td>
<td>Questionnaire English Version</td>
<td>242</td>
</tr>
<tr>
<td>Appendix A2</td>
<td>Questionnaire Kurdish Version</td>
<td>250</td>
</tr>
<tr>
<td>Appendix B</td>
<td>Factor Analysis Results for Pilot Study</td>
<td>257</td>
</tr>
<tr>
<td>Appendix C</td>
<td>Testing Non-Response Bias Results</td>
<td>266</td>
</tr>
<tr>
<td>Appendix D</td>
<td>Permeation letter to access to Ministry of Trading and Industry in Kurdistan region</td>
<td>268</td>
</tr>
<tr>
<td>Appendix E</td>
<td>Permeations to collect data from UUM</td>
<td>271</td>
</tr>
<tr>
<td>Appendix F</td>
<td>Permeations to collect data from Ministry of higher education in Kurdistan region</td>
<td>273</td>
</tr>
</tbody>
</table>
**LIST OF ABBREVIATIONS**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACAP</td>
<td>Absorptive Capacity</td>
</tr>
<tr>
<td>CIPE</td>
<td>Center for International Private Enterprises</td>
</tr>
<tr>
<td>EO</td>
<td>Entrepreneurial Orientation</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>KFCCI</td>
<td>Kurdistan Federation Chamber of commerce and Industry/Iraq</td>
</tr>
<tr>
<td>KRG</td>
<td>Kurdistan Region Government</td>
</tr>
<tr>
<td>MO</td>
<td>Market Orientation</td>
</tr>
<tr>
<td>NPD</td>
<td>New Product Development</td>
</tr>
<tr>
<td>PRDI</td>
<td>Product Innovation</td>
</tr>
<tr>
<td>PRSI</td>
<td>Process Innovation</td>
</tr>
<tr>
<td>RBV</td>
<td>Resource-Based View</td>
</tr>
<tr>
<td>SIGIR</td>
<td>Special Inspector General for Iraq Reconstruction</td>
</tr>
<tr>
<td>SMEs</td>
<td>Small and Medium Enterprises</td>
</tr>
<tr>
<td>TI</td>
<td>Technological Innovation</td>
</tr>
<tr>
<td>USAID</td>
<td>U.S. Agency for International Development</td>
</tr>
</tbody>
</table>
CHAPTER ONE
INTRODUCTION

1.1 Research Background

It is well known that the industrial sector usually develops faster than other economic sectors, due to the distinctive capability of industries to embrace technological and manufacturing innovations and modern management methods, in addition to their orientation towards production specialization in various fields. Hence, industrial enterprises play a vital role because they overlap with other sectors and have great opportunities to contribute to a larger portion of the gross domestic product (GDP) (Bakar & Ahmad, 2010; Pullen, de Weerd-Nederhof, Groen, & Fisscher, 2012).

The private industrial sector, especially Small and Medium Enterprises (SMEs), plays a focal role to achieve noticeable economic leaps and high income levels, which can be sustained for the long-term through production and exportation activities (González-Loureiro & Pita-Castelo, 2013; Westerberg & Frishammar, 2012). Additionally, SMEs serve as an efficient way to bring about the new technologies that contribute to developing and integrating all other economic sectors (Guo & Shi, 2012).

Since 2007, a growing interest in the industrial SMEs has been emerging in the Kurdistan region of Iraq, particularly, to move the industry wheel and solve the problem of unemployment (Batal, Alrawy & Ali, 2011). Nevertheless, there are
The contents of the thesis is for internal user only
REFERENCES


Babbie, E. (2011). *Introduction to Social Research* (Fifth Edit.). Canada: Learning,
Wadsworth Cengage.


202


Caccia-Bava, M. D. C., Guimaraes, T., & Harrington, S. J. (2006). Hospital organization


in the relation between market orientation and performance in cultural organizations. 


Measurement, 45(1), 725–728.


Jones, R., & Rowley, J. (2011). Entrepreneurial marketing in small businesses: A


Li, Wei, Z., & Liu, Y. (2010). Strategic Orientations, Knowledge Acquisition, and Firm


Lin, Peng, C., & Kao, D. (2008). The innovativeness effect of market orientation and


doi:10.1108/03090560810853020


Ramayah, M., Hafeez, T., & Mohamad, A. (2016). The effect of market orientation as a


Sciascia, S., D’Oria, L., Bruni, M., & Larrañeta, B. (2014). Entrepreneurial Orientation in


*Journal of Marketing Management*, 26(9-10), 825–841. doi:10.1080/02672571003683813


Position and Absorptive Capacity on Business Unit Innovation and Performance.


doi:http://dx.doi.org/10.1509/jmkg.69.2.42.60756
