



**UNIVERSITI PUTRA MALAYSIA**

***STRATEGIC DESIGN MANAGEMENT CAPABILITY FRAMEWORK FOR  
SMALL AND MEDIUM BUMIPUTERA FURNITURE MANUFACTURERS  
THROUGH EVALUATION OF INDUSTRY INDICATORS***

**NUR SYAZANA BINTI OSMAN**

**FRSB 2019 6**



**STRATEGIC DESIGN MANAGEMENT CAPABILITY FRAMEWORK FOR  
SMALL AND MEDIUM BUMIPUTERA FURNITURE MANUFACTURERS  
THROUGH EVALUATION OF INDUSTRY INDICATORS**

By

**NUR SYAZANA BINTI OSMAN**

**Thesis Submitted to the School of Graduate Studies, Universiti  
Putra Malaysia, in Fulfilment of the Requirements for the Degree of  
Doctor of Philosophy**

**March 2019**

## **COPYRIGHT**

All material contained within the thesis, including without limitation text, logos, icons, photographs and all other artwork, is copyright material of Universiti Putra Malaysia unless otherwise stated. Use may be made of any material contained within the thesis for non-commercial purposes from the copyright holder. Commercial use of material may only be made with the express, prior, written permission of Universiti Putra Malaysia.

Copyright © Universiti Putra Malaysia



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in  
fulfilment of the requirement for the degree of Doctor of Philosophy

**STRATEGIC DESIGN MANAGEMENT CAPABILITY FRAMEWORK FOR  
SMALL AND MEDIUM BUMIPUTERA FURNITURE MANUFACTURERS  
THROUGH EVALUATION OF INDUSTRY INDICATORS**

By

**NUR SYAZANA BINTI OSMAN**

**March 2019**

**Chairman : Professor Khairul Aidil Azlin Abd Rahman, PhD**  
**Faculty : Design and Architecture**

The importance of design management capability is to enhance the design performance of Bumiputera furniture SME sector which has gradually diversified with the expansion of the meaning and influences of design. Design is now regarded as a critical strategic tool to increase a commercial competitiveness in order to sustain in a complex global market. Concurrently, the importance of embracing the extensive design management capability including product innovation, organizational architecture, and operational process in furniture manufacturing has been identified by industry players and the government as a way to increase the performance of an organization. As highlighted, this research is looking at the issue of declining Bumiputera manufacturers participation in the export market compared to domestic market. Therefore, the research aims to create a strategic design management capability framework as a comprehensive overview of Bumiputera furniture SME manufacturers to further improve the design performance towards nine industry indicators evaluation. This study also provided an 'Action Process' and strategic matrix as a tool to lead the Bumiputera manufacturers in order to achieve successful product commercialization. In this research, the integration of quantitative and qualitative as mixed methods are used in addressing the research questions. The questionnaire survey was conducted face-to-face to obtain higher return rate. Apart from that, this study also uses in-depth interview to have a deeper understanding regarding this field. Additionally, the framework is assessed by the industry key players comprising manufacturing and design experts through focus group discussion and survey with prospective model of design management capabilities and recommended implementation processes. Through the analysis of the literature and interviews, the twenty-three design capability characteristics were selected to provide a comprehensive reliable list of characteristics inclusive of applicability, benefit and implementation, which

directly and indirectly influence the three comprehensive areas in Bumiputera furniture SME; (i) creative thinking innovation, (ii) knowledge expertise, and (iii) IP management and manufacturing performance. In order to achieve successful transition as ODM/OBM manufacturers, it requires Bumiputera manufacturers to take an effective strategy through; (i) product creation development, (ii) integrated talent management, and (iii) protecting ownership and commercial production. In doing so, the recommended framework could be used as a comparative guide to evaluate design performance and help the manufacturers achieve their organizational goals.



Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia  
sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

## **STRATEGI PENGURUSAN REKA BENTUK UNTUK INDUSTRI PERABOT BUMIPUTERA KECIL DAN SEDERHANA MELALUI PENILAIAN INDUSTRI INDIKATOR**

Oleh

**NUR SYAZANA BINTI OSMAN**

**Mac 2019**

**Pengerusi : Profesor Khairul Aidil Azlin Abd Rahman, PhD**  
**Fakulti : Rekabentuk dan Senibina**

Keupayaan pengurusan reka bentuk yang berterusan dari segi kepelbagaian pengembangan makna dan pengaruh reka bentuk di dalam sesebuah organisasi adalah amat penting. Ianya adalah bertujuan untuk meningkatkan prestasi reka bentuk sesebuah organisasi terutamanya untuk industri perabot Bumiputera kecil dan sederhana. Kini, reka bentuk boleh dianggap sebagai salah satu strategi penting dalam meningkatkan daya saing komersil di pasaran global yang kompleks. Pada masa yang sama, kepentingan keupayaan reka bentuk yang meluas termasuk dari segi inovasi produk, struktur organisasi, dan proses pembuatan perabot telah dikenal pasti oleh pihak industri dan kerajaan sebagai salah satu cara dalam meningkatkan prestasi sesebuah organisasi. Seperti yang dibincangkan, kajian ini mengkaji isu penyusutan pengusaha perabot Bumiputera IKS dalam pasaran eksport berbanding di pasaran domestik. Oleh itu, penyelidikan ini bertujuan untuk mewujudkan rangka kerja keupayaan pengurusan reka bentuk yang strategik sebagai gambaran keseluruhan komprehensif dari sektor pengusaha perabot Bumiputera IKS melalui penilaian industri indikator. Kajian ini juga menyediakan proses tindakan dan pelan strategik matrik sebagai salah satu alat panduan kepada pengeluar perabot Bumiputera IKS dalam mencapai pengkomersilan produk yang berjaya.

Dalam kajian ini, kaedah kuantitatif dan kualitatif digunakan dalam menangani soalan penyelidikan. Penggunaan kaedah soal selidik dilakukan secara individu adalah bertujuan untuk mendapatkan kadar pulangan yang lebih tinggi. Kajian ini juga menggunakan kaedah wawancara yang mendalam untuk memahami sektor perabot Bumiputera IKS. Di samping itu, rangka kerja tersebut dinilai oleh pakar industri perabot Bumiputera IKS dan pereka profesional melalui perbincangan kumpulan fokus. Selain itu, penilaian terhadap keupayaan rangka

kerja reka bentuk dan proses pelaksanaan yang disyorkan juga dilakukan. Melalui analisis kesusasteraan dan wawancara, dua puluh tiga ciri keupayaan reka bentuk telah dipilih untuk menyediakan senarai ciri yang komprehensif termasuk penggunaan, faedah dan pelaksanaan, yang secara langsung dan tidak langsung mempengaruhi tiga bidang komprehensif dalam pengusaha perabot Bumiputera IKS; (i) inovasi pemikiran kreatif, (ii) kepakaran pengetahuan, dan (iii) pengurusan IP dan prestasi pembuatan. Untuk mencapai peralihan yang berjaya sebagai pengeluar ODM atau OBM, ia memerlukan pengeluar Bumiputera untuk mengambil strategi yang berkesan melalui; (i) pembangunan penciptaan produk, (ii) pengurusan bakat bersepadu, dan (iii) melindungi pemilikan dan pengeluaran komersil. Dengan berbuat demikian, rangka kerja yang disyorkan boleh digunakan sebagai panduan perbandingan untuk menilai prestasi reka bentuk dan membantu pengeluar mencapai matlamat organisasi mereka.

## **ACKNOWLEDGEMENTS**

**With the name of Allah the Most Compassionate and Most Merciful**

This part of the thesis got me a bit emotional as it reminded of the bittersweet journey in doing PhD and those who have contributed and played significant roles in assisting me. Any words could not describe enough how grateful I am all your good deed. I am utterly grateful to my supervisor, Prof. Dr. Khairul Aidil Azlin bin Abd. Rahman and my co-supervisor, Dr. Ahmad Rizal bin Abdul Rahman, Dr. Mohamad Fakri Zaky bin Jaafar for their assistance, encouragement, guidance and persistent throughout the course of my work. All the advice and constructive criticism are much appreciated and I will hold them to guide myself in the research profession in my life as a whole. It is true that PhD changes people and it changed me massively to a better person.

My appreciation is also due to following:

- a. Malaysia Timber Industry Board (MTIB), Wan Mohd Hafizi Wan Mohammad and Nik Zuraihah Nik Mohammad
- b. Malaysia Furniture Promotion Council (MFPC), Sarimah Mohamad Sabudin
- c. Persatuan Kayu Kaya dan Perabot Bumiputera Malaysia (PEKA), Ahmad Zabidi Rashid
- d. Malaysia Furniture Council (MFC), Daniel Ho
- e. Sujak Hasbollah, TANGGAM
- f. All the participation from the Bumiputera manufacturers

Furthermore, I would like also to express my biggest appreciation to my husband, Mohd Amir Ikma Bin Mat Roni for putting up with me, always being there and keep on believing me. Especially for him, I would like to give millions of thanks for being patient throughout these difficult years. Without him I may not cope with such demanding tasks. Last but by no means least, I would like to give this greatest gratitude to my father, Osman Bin Said and my mother Noor Saini Hj Omar for the love, care and support in everything I do.

**“THANK YOU”**



This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

**Khairul Aidil Azlin bin Abd. Rahman, PhD**

Professor  
Faculty of Design and Architecture  
Universiti Putra Malaysia  
(Chairman)

**Ahmad Rizal bin Abdul Rahman, PhD**

Associate Professor  
Faculty Design and Architecture  
Universiti Putra Malaysia  
(Member)

**Mohamad Fakri Zaky bin Ja'afar, PhD**

Senior Lecturer  
Faculty Design and Architecture  
Universiti Putra Malaysia  
(Member)

**ROBIAH BINTI YUNUS, PHD**

Professor and Dean  
School of Graduate Studies  
Universiti Putra Malaysia

Date:

## Declaration by graduate student

I hereby confirm that:

- this thesis is my original work;
- quotations, illustrations and citations have been duly referenced;
- this thesis has not been submitted previously or concurrently for any other degree at any other institutions;
- intellectual property from the thesis and copyright of thesis are fully-owned by Universiti Putra Malaysia, as according to the Universiti Putra Malaysia (Research) Rules 2012;
- written permission must be obtained from supervisor and the office of Deputy Vice-Chancellor (Research and Innovation) before thesis is published (in the form of written, printed or in electronic form) including books, journals, modules, proceedings, popular writings, seminar papers, manuscripts, posters, reports, lecture notes, learning modules or any other materials as stated in the Universiti Putra Malaysia (Research) Rules 2012;
- there is no plagiarism or data falsification/fabrication in the thesis, and scholarly integrity is upheld as according to the Universiti Putra Malaysia (Graduate Studies) Rules 2003 (Revision 2012-2013) and the Universiti Putra Malaysia (Research) Rules 2012. The thesis has undergone plagiarism detection software.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name and Matric No.: Nur Syazana Binti Osman,GS 43845

## Declaration by Members of Supervisory Committee

This is to confirm that:

- the research conducted and the writing of this thesis was under our supervision;
- supervision responsibilities as stated in the Universiti Putra Malaysia (Graduate Studies) Rules 2003 (Revision 2012-2013) are adhered to.

Signature: \_\_\_\_\_

Name of Chairman  
of Supervisory  
Committee:

Professor  
Dr. Khairul Aidil Azlin Abd. Rahman

Signature: \_\_\_\_\_

Name of Member  
of Supervisory  
Committee:

Associate Professor  
Dr. Ahmad Rizal Abdul Rahman

Signature: \_\_\_\_\_

Name of Member  
of Supervisory  
Committee:

Senior Lecturer  
Dr. Mohamad Fakri Zaky Ja'afar

## TABLE OF CONTENTS

|   | Page      |
|---|-----------|
| <b>ABSTRACT</b>   | i         |
| <b>ABSTRAK</b>  | iii       |
| <b>ACKNOWLEDGEMENTS</b>                                 | v         |
| <b>APPROVAL</b>   | vi        |
| <b>DECLARATION</b>                                      | viii      |
| <b>LIST OF TABLES</b>                                   | xiii      |
| <b>LIST OF FIGURES</b>                                  | xv        |
| <b>LIST OF ABBREVIATIONS</b>                            | xviii     |
| <br><b>CHAPTER</b>                                      |           |
| <b>1 INTRODUCTION</b>                                   | <b>1</b>  |
| 1.1 Introduction  | 1         |
| 1.1.1 Issues and Challenges of Bumiputera Furniture SME | 2         |
| 1.2 Problem Statement                                   | 4         |
| 1.2.1 Lack of Incorporate Design in Organization        | 5         |
| 1.2.2 Lack of Strategic Design Management               | 5         |
| 1.2.3 Low Awareness in Brand Management Practice        | 6         |
| 1.3 Research Questions                                  | 6         |
| 1.4 Research Objectives                                 | 7         |
| 1.5 Scope of The Research                               | 7         |
| 1.6 Structure of Thesis                                 | 8         |
| <br><b>2 LITERATURE REVIEW</b>                          | <b>10</b> |
| 2.1 Introduction  | 10        |
| 2.2 Research Component                                  | 10        |
| 2.3 Malaysia Furniture Industry                         | 11        |
| 2.3.1 Furniture Manufacturing Industrial Structure      | 12        |
| 2.3.2 Malaysia Furniture Export Trends, 2001-2014       | 14        |
| 2.3.3 Malaysia Furniture Export Trends, 2015-2017       | 15        |
| 2.3.4 World Top Furniture Exporters                     | 17        |
| 2.4 Bumiputera Furniture SME Industry Development       | 18        |
| 2.4.1 Vendor Development Program                        | 19        |
| 2.4.2 Bumiputera Economic Downturn                      | 19        |
| 2.5 Government Strategic Planning                       | 21        |
| 2.5.1 Malaysia Industrial Plan                          | 21        |
| 2.5.2 Furniture Network Industrial Linkages             | 25        |
| 2.5.3 Government Incentives                             | 27        |
| 2.6 The Industry Indicators Evaluation                  | 27        |
| 2.6.1 Design  | 28        |
| 2.6.2 Organization Structure                            | 34        |
| 2.6.3 Human Capital                                     | 39        |
| 2.6.4 Market Demand                                     | 41        |

|          |       |  |           |
|----------|-------|--|-----------|
|          | 2.6.5 | Manufacturing  | 43        |
|          | 2.6.6 | Intellectual Property Rights                                       | 49        |
|          | 2.6.7 | Social and Cultural  | 52        |
| 2.7      |       | Conceptual Framework   | 57        |
| 2.8      |       | Summary  | 58        |
| <b>3</b> |       | <b>METHODOLOGY</b>   | <b>59</b> |
|          | 3.1   | Research Background  | 59        |
|          | 3.2   | Research Paradigm  | 60        |
|          | 3.3   | Research Strategy  | 60        |
|          | 3.4   | Research Design  | 61        |
|          | 3.4.1 | Literature Review  | 64        |
|          | 3.4.2 | KJ Method  | 64        |
|          | 3.4.3 | Interview with Government and Other Agencies                       | 65        |
|          | 3.4.4 | Interview with Bumiputera Furniture SME Manufacturer               | 66        |
|          | 3.4.5 | Questionnaire Design   | 69        |
|          | 3.4.6 | Validation Framework   | 72        |
|          | 3.5   | Summary  | 73        |
| <b>4</b> |       | <b>RESULTS</b>   | <b>74</b> |
|          | 4.1   | Introduction   | 74        |
|          | 4.2   | Frequency Analysis of Respondent                                   | 74        |
|          | 4.3   | Factors of Competitive among Bumiputera Furniture SME              | 79        |
|          | 4.4   | Design Utilization in Bumiputera Furniture Manufacturing Companies | 80        |
|          | 4.5   | Human Capability Development                                       | 81        |
|          | 4.6   | Investment in Design Activities                                    | 82        |
|          | 4.7   | Strategic Design Management  | 84        |
|          | 4.8   | Production Process and Activity                                    | 85        |
|          | 4.9   | Significance of Intellectual Property Rights                       | 86        |
|          | 4.10  | Maximize the Design Capacity                                       | 87        |
|          | 4.11  | Principal Component Analysis                                       | 87        |
|          | 4.12  | The Organization Capabilities Within Micro and SME Level           | 90        |
|          | 4.13  | Summary  | 93        |
| <b>5</b> |       | <b>DISCUSSION</b>  | <b>94</b> |
|          | 5.1   | Introduction   | 94        |
|          | 5.2   | Design Capabilities Characteristic Formulation                     | 94        |
|          | 5.2.1 | Characteristic in Product Innovation Area                          | 95        |
|          | 5.2.2 | Characteristic in Organizational Architecture Area                 | 101       |
|          | 5.2.3 | Characteristic in Operational Process Area                         | 110       |
|          | 5.3   | Strategic Design Management Capability Framework                   | 115       |
|          | 5.3.1 | Suggested Improvement  | 116       |
|          | 5.3.2 | Strategy Formulation   | 119       |

|          |   |            |
|----------|---|------------|
| 5.4      | The 'Action Process'  | 120        |
| 5.5      | The Validation and Implementation of Framework                    | 122        |
| 5.5.1    | Strategic Design Management Capability Framework Validation       | 122        |
| 5.5.2    | The 'Action Process' Validation                                   | 123        |
| 5.5.3    | Applicability, Benefit and Implementation of Framework            | 124        |
| 5.6      | Finalization of Framework   | 126        |
| 5.6.1    | Finalization of Strategic Design Management Capability            | 126        |
| 5.6.2    | Finalization of The 'Action Process'                              | 127        |
| 5.7      | Design Management Strategic Matrix                                | 129        |
| 5.8      | Summary   | 130        |
| <b>6</b> | <b>SUMMARY, CONCLUSION AND RECOMMENDATION FOR FUTURE RESEARCH</b> | <b>132</b> |
| 6.1      | Introduction  | 132        |
| 6.2      | Research Overview   | 132        |
| 6.3      | The Research Contribution   | 134        |
| 6.4      | Limitation of Research  | 135        |
| 6.4.1    | Areas of Research   | 136        |
| 6.4.2    | Validity  | 136        |
| 6.5      | Justification of Research   | 136        |
| 6.6      | Recommendation of Research  | 137        |
|          | <b>REFERENCES</b>   | <b>138</b> |
|          | <b>APPENDICES</b>   | <b>151</b> |
|          | <b>BIODATA OF STUDENT</b>   | <b>184</b> |
|          | <b>LIST OF PUBLICATIONS</b>                                       | <b>185</b> |

## LIST OF TABLES

| Table   | Page |
|---|------|
| 2.1 Industrial classification of Malaysia furniture industry                              | 12   |
| 2.2 Export value of Malaysia furniture, 2001-2008   | 14   |
| 2.3 Export value of Malaysia furniture, 2009-2015   | 15   |
| 2.4 Malaysia total export by country, 2015-2016   | 16   |
| 2.5 Malaysia total export by country, 2016-2017   | 17   |
| 2.6 Global top furniture exporters, 2017  | 18   |
| 2.7 Malaysia industrial master plans and cluster based on furniture development           | 21   |
| 2.8 Government incentives for furniture industry  | 27   |
| 2.9 Various perspective of the work of design in a firm                                   | 28   |
| 2.10 Design dimension attributed againsts company goals                                   | 32   |
| 2.11 Type of innovation   | 33   |
| 2.12 Organization design category   | 35   |
| 2.13 Design management in different field of application                                  | 38   |
| 2.14 Lean manufacturing concept   | 48   |
| 2.15 An overview of the main types of intellectual property rights                        | 49   |
| 2.16 International property right index, 2016-208   | 50   |
| 2.17 Statistics of Industrial Design Application, 2011-2015                               | 51   |
| 2.18 Difference between product branding and corporate branding                           | 55   |
| 2.19 Key factors influencing design performance of Bumiputera SME furniture manufacturers | 58   |
| 3.1 Industry associations profile   | 66   |
| 3.2 Manufacturing experts' profile  | 67   |

|      |  |     |
|------|--|-----|
| 3.3  | Evaluation experts profile   | 72  |
| 4.1  | Gender and age of respondents                                      | 75  |
| 4.2  | Respondents position in company                                    | 75  |
| 4.3  | Educational background of the respondents                          | 75  |
| 4.4  | Work experience of respondents                                     | 76  |
| 4.5  | Company size   | 76  |
| 4.6  | Years of establishment of the firm                                 | 77  |
| 4.7  | Type of products   | 77  |
| 4.8  | Market position  | 77  |
| 4.9  | Type of factory of respondents                                     | 78  |
| 4.10 | Registered intellectual property                                   | 78  |
| 5.1  | Design management strategic matrix                                 | 131 |
| 6.1  | Index of findings addressing the research questions and objectives | 132 |



## LIST OF FIGURES

| Figure   | Page |
|--|------|
| 1.1 Bumiputera furniture SME issues and challenges                     | 4    |
| 2.1 Main component of the research issues                              | 10   |
| 2.2 Malaysia furniture plants  | 11   |
| 2.3 Percentage shares of SME in the manufacturing sector by sub-sector | 13   |
| 2.4 Wooden based furniture cluster in Malaysia                         | 22   |
| 2.5 Actors and linkages of innovation in Muar furniture cluster        | 26   |
| 2.6 Three components of creativity                                     | 29   |
| 2.7 Linking creativity, design and innovation in business performance  | 30   |
| 2.8 Design roles in the UK business                                    | 31   |
| 2.9 The Star Model   | 34   |
| 2.10 Thompson and Strickland's strategic management model              | 36   |
| 2.11 Design management absorption model                                | 39   |
| 2.12 Dreyfus model of skill acquisition                                | 40   |
| 2.13 The STP model   | 42   |
| 2.14 Market segmentation   | 42   |
| 2.15 Reasoning for developing ODM                                      | 44   |
| 2.16 The relationship between TQM practices and firms performance      | 45   |
| 2.17 Malaysia IPR index overall score for 2018                         | 50   |
| 2.18 A holistic understanding of corporate branding                    | 53   |
| 2.19 Brand identity planning model                                     | 56   |
| 2.20 The conceptual framework  | 57   |

|      |   |     |
|------|---|-----|
| 3.1  | Research process overview   | 59  |
| 3.2  | Sequential exploratory design   | 61  |
| 3.3  | The research design   | 62  |
| 3.4  | Basic steps of the KJ-method  | 65  |
| 3.5  | Initial design capability characteristics identified after coding process | 68  |
| 3.6  | Group of respondents for pilot study                                      | 70  |
| 3.7  | Selection of respondents  | 71  |
| 4.1  | Factors of competitive among Bumiputera furniture SME                     | 79  |
| 4.2  | Role of design in Bumiputera furniture SME                                | 80  |
| 4.3  | Human capability development  | 81  |
| 4.4  | Invetsment in design activities   | 83  |
| 4.5  | Strategic design management   | 84  |
| 4.6  | The manufacturing capability  | 85  |
| 4.7  | The benefit of IPR to Bumiputera furniture SME                            | 86  |
| 4.8  | The design capacity required by Bumiputera furniture SME                  | 87  |
| 4.9  | Dendrogram analysis using Ward method                                     | 88  |
| 4.10 | Three cluster found from Ward Lingkage method                             | 89  |
| 4.11 | Organization capabilities of Bumiputera furniture micro level             | 91  |
| 4.12 | Organization capabilities of Bumiputera small and medium level            | 92  |
| 5.1  | The design capabilities characteristic                                    | 95  |
| 5.2  | Design capabilitiy characteristic within product innovation area          | 96  |
| 5.3  | Design capability within organizational architecture area                 | 102 |
| 5.4  | Proces of conversion from OEM to ODM to ODM                               | 103 |
| 5.5  | Design capability within operating level for operational process area     | 111 |

|      |  |     |
|------|--|-----|
| 5.6  | The findings and startegy recommended                            | 116 |
| 5.7  | The 'Action Process'   | 121 |
| 5.8  | The finding result on applicability , benefit and implementation | 124 |
| 5.9  | Strategic design management capability framework (final version) | 127 |
| 5.10 | The 'Action Process' (final version)                             | 128 |
| 6.1  | The contribution of knowledge                                    | 135 |



## LIST OF ABBREVIATIONS

|       |   |
|-------|---|
| DE    | Design expert                                     |
| EE    | Evaluation expert                                 |
| IA    | Industry association                              |
| IPR   | Intellectual property rights                      |
| ME    | Manufacturing expert                              |
| MIDA  | Malaysia investment development authority         |
| MITI  | Ministry of international trade and industry      |
| MPIC  | Ministry of Plantation Industries and Commodities |
| MTIB  | Malaysia timber industry board                    |
| MTC   | Malaysia Timber Council                           |
| NATIP | National timber industry policy                   |
| OEM   | Original Equipment Manufacturing                  |
| ODM   | Original/Own Design Manufacturing                 |
| OBM   | Original/Own Brand Manufacturing                  |
| PCA   | Principal component analysis                      |
| SME   | Small and medium enterprise                       |

## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction

The furniture industry in Asia has been touted as a new source of demand for product consumers, more global investment to its shored and fuelling the new wealth. Zainal Aznam and Bhattasali (2008) stated that within the last two decades, the Malaysian wood-based industry became one of the most important socioeconomic sectors in the country. With the first Master Plan 1986, followed by the second in 1996 and the on-going third, the industry was made very profitable with enormous growth rates (Harun, Zaki, Ismail, Khairil, & Awang, 2014). Within a comparatively short period of time, Malaysia has been emanated as one of the chief furniture suppliers to the world furniture market. It has been reported that Malaysia is now third-largest in Asia and eight-largest furniture exporter in the world with 80 percent of its production on the Asian and US markets (Ho, 2016). In 2015, the Malaysia furniture industry contributed to the total export earnings of timber and timber products valued at MYR9.14 billion, with an increase of 14.1 percent compared to MYR8 billion last year. The furniture exports were accounted for 80 percent of the total furniture exports in 2015 with value MYR7.29 billion, and furniture becomes the second major export for lifestyle products. Then, prolonged for six months in 2016, the export furniture recorded a double-digit growth which amounted to 10.1 percent. This cause is attributed to weak ringgit where it resulted in stronger demand and higher export to traditional markets such as the USA, Japan, Singapore, Australia and the UK. In 2016, wooden furniture dominated 80 percent of the Malaysia furniture exports valuing MYR7.6 billion.

In 2017, the total value of Malaysia furniture exports recorded MYR10.14 billion with an increase of 6.4 percent as compared to 2016. The wooden furniture was the major product that contributed to the Malaysia export earnings. The export of wooden furniture stood at MYR 8.1 billion or 80 percent of the total furniture export earnings, which most of the products were made of rubber wood material. The export value in the furniture industry continuously showed a good performance in the following year 2018 with export value reported MYR 10.75 billion with an increase of 6 percent compared to the previous year. Due to the good demand, Malaysia Timber Industry Board (MTIB) aims the export of timber and timber products set at MYR55 billion or approximately USD12.5 billion under National Timber Industry Policy (NATIP). This amount included MYR16 billion set for the wood-based furniture industry. As statistically reported by the Ministry of International Trade and Industry (MITI), the furniture exports charted a compound annual growth rate of about 3.5 percent between 2012 and 2016 (The Edge Market, 2017).

Basically, the majority of the furniture production activities are concentrated in the West Malaysia especially in the states of Johor, Selangor and Perak. As reported by Malaysia Investment Development Authority (MIDA), Muar, which is one of the districts in Johor was the highest contributor to the export earnings of furniture product between 47 to 50 percent. While, according to Ngui, Agrawal, & Voon (2011) the eastern state of Sarawak in contrast has a relatively small export-oriented furniture manufacturing industry. The wood-based industry in Malaysia can be described as a large sector with almost 5,870 manufacturing establishments and it has been reported by Boon-Kwee, Ng and Thiruchelvam (2012) that the small and medium enterprises (SME) constitute almost 95 percent of the total establishments in the furniture industry in Malaysia. In this industry, only 13 percent is clustered as big companies and more than 2,400 furniture companies are a combination of manufacturers, traders and retailers.

Malaysia furniture industry is continuing to flourish towards excellence. This performance has been driven by several factors that distinguish an industry such as a good workmanship, quality, the abundance of natural resources and ethical work conditions. Although Malaysia has a strong sector and abundance of wood materials for the manufacturing of furniture, this industry is still challenged by various issues such as a shortage of labour, skills training and raw material supply. The growing trend of "China effect" and scarcity of resources have forced furniture companies to implement critical strategies to enhance their competitiveness (Fadzline Tamyez, 2016). However, most of the local furniture manufacturers are more interested in maintaining their operational as Original Equipment Manufacturer (OEM) and focusing on rubberwood furniture. Although the government has pushed the manufacturers strongly in the direction of Original Design Manufacturer (ODM) and the Original Brand Manufacturer (OBM), the extent to which these strategies are applied in this industry is quite limited (Ratnasingam & Lim, 2008), due to the lack of the right design talent to engage in the industry. Only a few local OEM manufacturers who are willing to move ODM/OBM oriented due to the high-profit margin price returns.

#### **1.1.1 Issues and Challenges of Bumiputera Furniture SME**

The furniture industry has emerged as one of the most important manufacturing sectors in Peninsular Malaysia. Over the years, furniture exports have risen at a steady rate that allows Malaysia to become one of the world's leading exporters. However, the government was criticized for not achieving their vision in upgrading Bumiputera participations in the furniture export market (Fadzline Tamyez, Razali, & Norzanah, 2008; Kohar, 2013). The overall success of the programmes for Bumiputera manufacturers development has not been up to the expectation in the furniture export business as compared to national performance. The lack of Bumiputera participations can be due to several reasons that include:

**a) Design activities and research development**

Bumiputera furniture SME face difficulties related to financing and accounting. Most of them are weak with stock control and financial record. Due to the lack of liquid capital to cover daily business expenses, the Bumiputera manufacturers are not interested in taking risks by getting loans from banks that prevent them from expanding their business (Ministry of Plantation Industries and Commodities Malaysia, 2008). This causes Bumiputera manufacturers are incapable of engaging in design activities that help them to be more competitive. Moreover, due to insufficient capital investment, it also affects the performance of manufacturers due to their inability to undertake R&D activities leading to technical inefficiencies, poor machinery layout and poor product development.

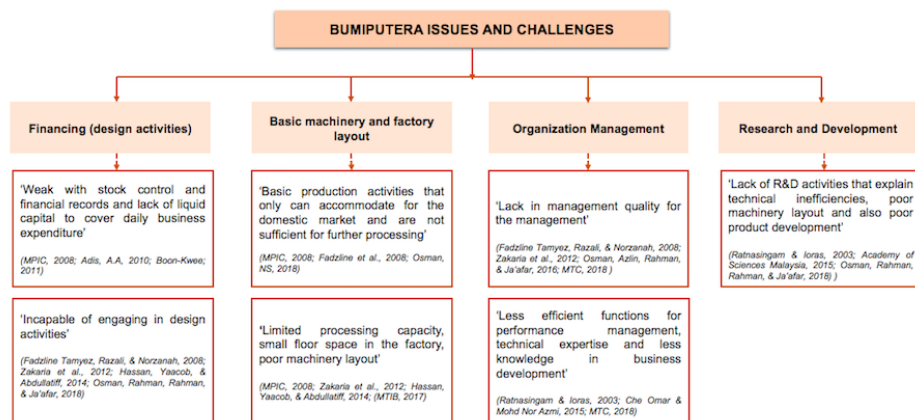
**b) Basic machinery and factory layout**

Through the observation carried out by previous studies and researcher (Ministry of Plantation Industries and Commodities, 2008; Osman, Azlin, Rahman, & Ja'afar, 2016), it was found that the machines in the Bumiputera factories consisted of basic machinery. These may be sufficient for basic production activities that can only accommodate the domestic market and not sufficient for further processing that would comply with the international standard. According to the Ministry of Plantation Industries and Commodities Malaysia (2008), due to this limited processing capacity, this causes the Bumiputera manufacturers unable to venture into the export market. In addition, most Bumiputera factories have a small factory floor space and poor machinery layout; these factors are also affecting the company's production performance. These issues must therefore be addressed if Bumiputera manufacturers want to grow and becomes successful furniture exporters, as it requires optimum technology and efficient factory layout.

**c) Organization management**

In previous study, it shows that some of Bumiputera manufacturers have long years of experience in the furniture industry. However, Bumiputera manufacturers are still lacking in management quality (Fadzline Tamyez et al., 2008) and lagged behind non-Bumiputera manufacturers. Business failure factors among Bumiputera manufacturers are also due to less effective performance in management functions, technical expertise and less knowledge in business development (J Ratnasingam & Ioras, 2003). In order to become more competitive in the marketplace, it is important for the Bumiputera manufacturers to manage their design projects by planning new product developments and willing to be involved in knowledge management.





**Figure 1.1 : Bumiputera furniture SME issues and challenges**

In figure 1.1 demonstrates the summarize of issues and challenges in the context of Bumiputera manufacturers. Due to the competitive pressures in the industry, it requires Bumiputera manufacturers to be more creative and innovative to ensure that they can continue to sustain and compete in the markets. Bumiputera manufacturers should also be more responsive to government approaches that promote the transition of the industry from OEM to ODM or OBM. Furthermore, the result of previous studies shows that most Bumiputera manufacturers are still not ready to take on the challenge to explore the export market even if they have high demand. Therefore, both government agencies and related industries need to find ways to improve the Bumiputera sector. Besides, Bumiputera manufacturers should also take responsibility and accountability on the given assistance including funds from the government to strengthen the competitiveness in this industry.

## 1.2 Problem Statement

Furniture manufacturing sector is considered important by the Malaysia government and industry where innovation is acknowledged as a key to increase competitiveness and ensure prolonged growth for the business. The government intends to accomplish an expected RM 53 billion of timber based fares of which RM16 billion is required to be contributed by the furniture industry. On another side, according to Dato Dr. Jalaluddin Harun, Director General of MTIB was also targeting to raise ODM companies up to 70 percent as a component of the furniture industry as a part of the efforts to boost values. Unfortunately, these targets will not succeed because the Bumiputera manufacturers are not able to incorporate design elements to be part and parcel of their organization and provide an enabling environment to propel the industry into the next phase of growth. Below are the main problems of Bumiputera furniture SME manufacturers:



### **1.2.1 Lack of Incorporate Design in Organization**

In order to ensure the furniture industry continues to drive the country's economy, the government mission is to transform the OEM to the ODM companies by 2020. The local manufacturers need to emphasize the elements of design and creativity in their new product developments to ensure the mission is successful. Most local manufacturers, however, are not conducive to nurturing creativity as part of an organization decisive source of competitive advantage (MTC, 2013). By implementing design creativity within the organization, it offers the potential to develop new methods, markets, opportunities and to determine competitiveness (Pitta, Wood, & Franzak, 2008). Design creativity not only represents inventions of new products or new paradigms but involves continuous innovation and improvement of every product, service, process and activity within. In addition, elements of innovation and design among local producers are also considered weak and immature in the context of South East Asia (Ratnasingam & Ioras, 2003; Tamyaz, 2012). Local furniture manufacturers in Malaysia have a high tendency to copy other designs and apparently lack the product development (Shukri & Suhaidi, 2006) and affect the product quality (Com, Da, Da, & Produtos, 2017). Lack of experience in introducing new ideas into production leads to a decline of production segment, and manufacturers are not capable to compete in low-end market segment. There is a strong possibility that this barrier contributes to the difficulty of achieving unique feasibility solutions for the new product design and the development of new products.

### **1.2.2 Lack of Strategic Design Management**

Malaysia furniture industry has formulated aggressive strategies by implementing creative strategies (Adis, 2010) to the local manufacturers products or services in order to increase organizational performance and sustainable competitive advantages. The importance of design strategy has been proven to effectively determine the company performance. However, some of the strategies implemented are not as successful as expected and manufacturers have lost their competitiveness in this industry. Based on findings, (Boon-Kwee, Ng and Thiruchelvam, 2011; Valipoor, 2008) the main problem faced by local furniture manufacturers is the lack of design management knowledge. Meanwhile, Mamat and Ismail (2011) highlighted that the Bumiputera manufacturers are also lacking in financial management, human resources management and marketing management. Bumiputera manufacturers have been facing difficulties in maintaining greater market share amidst stiff competition from other manufacturers who were dealing with similar products, and caused the manufacturers failed to fulfil customer needs.

### 1.2.3 Low Awareness in Brand Management Practice

Brands and added values of products are among the most important factors of competitive advantage for business in a competitive market (Veljkovic & Kalicanin, 2016) and are considered an asset to generate revenue and increase the value of a company (The Star, 2012). However, most Bumiputera furniture SME are considered lacking in terms of strong branding and design in the international market. Since the government is pursuing local producers to adopt a brand strategy for their organization, this has caused furniture manufacturers to refuse to innovate and are more interested in export marketing rather than branding (Nor, Fadzline Tamyaz, Jamal, & Nasir, 2012). They focus more on increasing the number of sales with minimal expenses on design and are largely inadequate to meet challenges in the global market. Lack of focus on branding and marketing activities among furniture manufacturers was also explained by the Council (2012) due to their limited knowledge and awareness on the importance of branding. This phenomenon has created concerns whether the current manufacturers are equipped with the right innovation, branding and originality to achieve world-class producers. Hence, this is a need for Bumiputera manufacturers to implement the design management practice in the organization to decisive difference in decision making and help to build a sustainable future with the understanding of the role and impact of design. The design is necessary for ongoing economic sustainability and business performance. Ambler (2001) highlighted all these can be achieved with a strong branding and can increase business value by accelerating and increasing the value of cash flow and reducing capital costs.

## 1.3 Research Questions

Background research and further literature review (Chapter 2) were conducted to understand the research context and identified the following research questions.

### Main research question:

What are the factors required for successful Original Design Manufacturer (ODM) among Bumiputera furniture SME manufacturer?

### Sub-research questions:

- (RQ1) What is the current scenarios of Bumiputera furniture SME manufacturer in design performance through industry indicators evaluation?

- (RQ2) Why is the strategic planning developed by the government for Bumiputera furniture SME manufacturer still unable to achieve successful Original Design Manufacturing (ODM) or Original Brand Manufacturing (OBM) through industry indicators evaluation?
- (RQ3) How receptive are industry players towards the strategic recommendation for improving the design performance of Bumiputera furniture SME manufacturer?

#### **1.4 Research Objectives**

The research aims to create a strategic design management capability framework and the implementation process as a guide or assessment tool for furniture manufacturers to further improve the design performance, in which it enables sustained growth and increases competitiveness. In order to answer the research questions and fulfil the aim of the research, the following objectives are constructed:

- (OB1) To investigate the current scenarios of Bumiputera furniture SME manufacturer in design performance towards industry indicators evaluation.
- (OB2) To determine the lacking factors in existing strategic planning implemented by the government for Bumiputera furniture SME manufacturer through industry indicators evaluation.
- (OB3) To propose a strategic model for improving the design capability and performance of Bumiputera furniture SME manufacturer.

#### **1.5 Scope of The Research**

This study investigated the design capability and performance of Bumiputera furniture SME manufacturers in furniture industry, Malaysia. In this research, the focus is on Bumiputera furniture SME, in which Bumiputera is a group of people in Malaysia comprising of Malays, indigenous people, and other ethnic groups specified by the constitutions. Bumiputera furniture SME are selected as respondents due to issues with decreasing participation in the furniture export market compared to domestic performance and failing to take advantage of the lucrative export value market. The population for this study was Bumiputera manufacturers that employ five to two hundred workers, in the furniture industry. In addition, this research focuses not only on OEM manufacturers, but also on ODM and OBM oriented. The majority of the selected respondents are located in Johor, Kedah, Perak, Pulau Pinang and Selangor, but respondents located in other regions are still considered.

A mixed method study incorporating both quantitative and qualitative methods was found to be an appropriate approach in addressing the research questions to achieve the best result. By using mixed methods allows the researcher to generalize data from a quantitative approach and at the same time facilitate researcher generation 'thick and rich' data from qualitative methods. For this study, the research design consisted of two phases: qualitative methods in Phase One and quantitative methods in Phase Two. In Phase One, in-depth structured interview was conducted with two group consisting of industry associations (n=5) and Bumiputera furniture SME manufacturers (n=5). In order to have a comprehensive picture of Bumiputera furniture SME in terms of design capability and performance. This qualitative data was analysed using content analysis. In Phase Two, a total of 30 questionnaires were distributed face-to-face to Bumiputera furniture SME owners'/design managers or designers with the most extensive knowledge of the characteristic, strategy and performance of the organisation. This quantitative data was analyzed using descriptive analysis, principal component analysis (PCA), and hierarchical cluster analysis in IBM SPSS.

The data analysis findings help the researcher to develop a strategic design management capability framework and the implementation process, representing the actions, effects, and benefits to the Bumiputera manufacturers. This framework illustrated improving design performance and enhancing Bumiputera furniture SME competitiveness in the furniture industry. Moreover, this research will evaluate this sector according to the industry indicators to ensure the mission of the government in transforming OEM to ODM or OBM, is successful with the emphasis is on the strategic design management capability within their organization.

## **1.6 Structure of Thesis**

The thesis write-up is divided into six chapters to create an appropriate flow. The structure of the thesis is therefore summarised as follows:

**Chapter 1** is an overview of the research, using background research to identify the problems and the apparent lack of studies. It provides the introduction to guide the reader into the research topic. The problem statement, research questions, objectives and outline of the thesis are included in this chapter.

**Chapter 2** describes the literature review on the current situation of the Bumiputera furniture SME in Malaysia furniture industry. In addition, this chapter also discusses the design capabilities and performance of Bumiputera furniture SME manufacturers through nine industry indicators in order to provide a better understanding of the research context. At the end of this chapter, a conceptual

framework has been proposed to guide the researcher on the line of research inquiry as can be seen in figure 2.19 on page 82.

**Chapter 3** presents the research design and methodology. Drawing on the literature review and guided by philosophical considerations, the research aims and objectives are defined. This leads to the selection of the research approach for data collection and for framework validation. The chapter also explains the technique used in the analysis and issues related to data collection. Therefore, in this chapter researcher provides a justification, sampling and analysis techniques of the interviews and questionnaire survey. For this research, researcher uses both qualitative and quantitative methods to increase the reliability of the research. The research is also designed to increase validity by continually evaluating the research outcomes. The reliability and validity are also further discussed in this chapter.

**Chapter 4** features the analyses of the research findings of questionnaire survey and interviews with industry key players to provide an overview of the design capabilities and performance of Bumiputera furniture SME manufacturers. In addition, this chapter continues with examples from the in-depth interviews with manufacturing experts, which also addresses the apparent lack of performance among Bumiputera furniture SME in this industry.

**Chapter 5** discusses the construction of the strategic design management capability framework and its implementation process. The twenty-three design capability characteristics are further categorized into three main design activities levels: (i) product innovation, (ii) organizational architecture, and (iii) operational process. The discussion continues with the findings from evaluation interviews with industry key players, to finally recommend strategic design management capability framework, the 'Action Process' and design management strategic matrix that needs to be applied by the manufacturers, which will enhance the design performance of Bumiputera furniture SME.

**Chapter 6** concludes the research by viewing the key research findings the aim and objectives. Theoretical and practical research contribution is discussed, acknowledging the research limitations, data collection and analysis and validation. Recommendations are made on this basis for further in this chapter.



## REFERENCES

- Academy of Sciences Malaysia, M. (2015). Final Report Furniture Industry, 94–108. Retrieved from [www.akademisains.gov.my](http://www.akademisains.gov.my)
- Acklin, C. (2011). The Absorption of Design Management Capabilities in SMEs with Little or no Prior Design Experience. *Proceedings of the Nordic Design Research Conference*, 1–10.
- Acklin, C. (2013). *Design management absorption in SMEs with little or no prior design experience*. Imagination Lancaster.
- Acklin, C., & Fust, A. (2014). Towards a dynamic mode of design management and beyond. *Proceedings of the Academic Design Management Conference*, (September), 2–4. <http://doi.org/10.13140/2.1.4145.0887>
- Adefulu, A. D. (2015). Promotional Strategy Impacts on Organizational Market Share and Profitability, *11*(6), 20–33.
- Academy of Sciences Malaysia, M. (2015). Final Report Furniture Industry, 94–108. Retrieved from [www.akademisains.gov.my](http://www.akademisains.gov.my)
- Acklin, C. (2011). The Absorption of Design Management Capabilities in SMEs with Little or no Prior Design Experience. *Proceedings of the Nordic Design Research Conference*, 1–10.
- Acklin, C. (2013). *Design management absorption in SMEs with little or no prior design experience*. Imagination Lancaster.
- Acklin, C., & Fust, A. (2014). Towards a dynamic mode of design management and beyond. *Proceedings of the Academic Design Management Conference*, (September), 2–4. <http://doi.org/10.13140/2.1.4145.0887>
- Adis, A. A. (2010). Export Performance on the Malaysian Wooden Furniture Industry: An Empirical Study. *Journal of International Food & Agribusiness Marketing*, *22*(1–2), 52–69. <http://doi.org/10.1080/08974430903372773>
- Adom, D., Hussein, E. K., & Joe, A.--agyem. (2018). THEORETICAL AND CONCEPTUAL FRAMEWORK: MANDATORY INGREDIENTS THEORETICAL AND CONCEPTUAL FRAMEWORK: MANDATORY INGREDIENTS. *International Journal of Scientific Research*, *7*(1), 438–441. <http://doi.org/ISSN No 2277-8179>
- Ahire, S. L., & Dreyfus, P. (2000). The impact of design management and process management on quality: an empirical investigation. *Journal of Operations Management*, *18*, 549–575. [http://doi.org/10.1016/S0272-6963\(00\)00029-2](http://doi.org/10.1016/S0272-6963(00)00029-2)

- Aliyu, A. A., Bello, M. U., Kasim, R., & Martin, D. (2014). Positivist and Non-Positivist Paradigm in Social Science Research: Conflicting Paradigms or Perfect Partners? *Journal of Management and Sustainability*, 4(3), 79–95. <http://doi.org/10.5539/jms.v4n3p79>
- Alizadeh, A., Moshabaki, A., Hamid, S., Hoseini, K., & Naiej, A. K. (2014). The Comparison of Product and Corporate Branding Strategy: a conceptual framework. *IOSR Journal of Business and Management Ver. IV*, 16(1), 2319–7668. <http://doi.org/10.9790/487X-16141424>
- Almanej, M., Salonitis, K., & Xu, Y. (2017). Lean Implementation Frameworks: The Challenges for SMEs. *Procedia CIRP*, 63, 750–755. <http://doi.org/10.1016/j.procir.2017.03.170>
- Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the Work Environment for Creativity Assessing the Work Environment for Creativity. *The Academy of Management Journal*, 39(5), 1154–1184. <http://doi.org/10.2307/256995>
- Ambler, T. (2001). Value-based marketing: Marketing strategies for corporate growth and shareholder value. *Journal of Brand Management*, 8(6), 463–466. <http://doi.org/10.1057/palgrave.bm.2540045>
- Antwi, S. K., Hamza, K., Polytechnic, T., & Polytechnic, T. (2015). Qualitative and Quantitative Research Paradigms in Business Research: A Philosophical Reflection. *European Journal of Business and Management*, 7(3), 217–226.
- Arain, M., Campbell, M. J., Cooper, C. L., & Lancaster, G. A. (2010). What is a pilot or feasibility study? A review of current practice and editorial policy. *BMC Med Res Methodol*, 10, 67. <http://doi.org/10.1186/1471-2288-10-67>
- Ayudhya, P. I. N. (2007). Emerging trends in trend research. *lasdr07*, 1–19.
- Azim, N. H., Subki, A., & Yusof, Z. N. B. (2018). Abiotic stresses induce total phenolic, total flavonoid and antioxidant properties in Malaysian indigenous microalgae and cyanobacterium. *Malaysian Journal of Microbiology*, 14(1), 25–33. <http://doi.org/10.1017/CBO9781107415324.004>
- Badoc, J. L. (2001). The context of e-supply chain management. *Industrial Management (Norcross, Georgia)*, 43(5), 20.
- Bak, O., Lombardo, S., & Romsdal, AnitaBorgen, E. K. (2005). Creative processes in product development: utility and applicability. *Methodology*, (January 2014), 23–32.

- Berg, B., & Lune, H. (2012). *Qualitative research methods for the social sciences*. Pearson.
- BJ.Babin, Jcc. M. G. W. Z. (2013). Sampling Designs and Sampling Procedures. In *Business Research Methods* (p. 383). Retrieved from [www.cengage.com/global](http://www.cengage.com/global)
- Björklund, T. A. (2013). Initial mental representations of design problems: Differences between experts and novices. *Design Studies*, 34(2), 135–160. <http://doi.org/10.1016/j.destud.2012.08.005>
- Bolatan, G. I. S., Gozlu, S., Alpan, L., & Zaim, S. (2016). The Impact of Technology Transfer Performance on Total Quality Management and Quality Performance. *Procedia - Social and Behavioral Sciences*, 235(October), 746–755. <http://doi.org/10.1016/j.sbspro.2016.11.076>
- Boon-Kwee, N., & Thiruchelvam, K. (2011). Technological innovations in Malaysia's wooden furniture industry : Knowledge and linkages. *African Journal of Agricultural Research*, 6(16), 3654–3659. <http://doi.org/10.5897/AJAR11.611>
- Boon-Kwee, N., & Thiruchelvam, K. (2012). The dynamics of innovation in Malaysia's wooden furniture industry: Innovation actors and linkages. *Forest Policy and Economics*, 14(1), 107–118. <http://doi.org/10.1016/j.forpol.2011.08.011>
- Borja de Mozota, B. (2007). Design and competitive edge: a model for design management excellence in European SME's. *Design Management Journal*, 2(617), 88–103. <http://doi.org/10.1111/j.1948-7177.2002.tb00014.x>
- Brah, S. A., & Ying Lim, H. (2006). The effects of technology and TQM on the performance of logistics companies. *International Journal of Physical Distribution & Logistics Management*, 36(3), 192–209. <http://doi.org/10.1108/09600030610661796>
- Bresciani, S., & Eppler, M. J. (2010). Brand new ventures? Insights on start-ups' branding practices. *Journal of Product and Brand Management*, 19(5), 356–366. <http://doi.org/10.1108/10610421011068595>
- Bruce, M., & Cooper, R. (1997). *Marketing and design management*. Townsville Port Authority Capital Dredging Works 1993 Environmental Monitoring Program. Retrieved from <http://eprints.lancs.ac.uk/39848/>
- Bryman, A. and Bell, E. (2015). *Business research methods*. Oxford University Press.



- Bryman, A. (2007). Barriers to Integrating Quantitative and Qualitative Research. *Journal of Mixed Methods Research*, 1(1), 8–22. <http://doi.org/10.1177/2345678906290531>
- Cao, X., & Hansen, E. (2006). Innovation in China ' s furniture industry. *Forest Product*, 2(10146), 33–42.
- Castañó, J. (2002). The booming furniture industry in China. *International Tropical Timber Organization*, 277(3), 2003–2005.
- Cavana, R. Y., Delahaye, B. L., & Sekaran, U. (2001). *Applied business research: qualitative and quantitative methods*. *Recherche En Soins Infirmiers*. <http://doi.org/10.1109/IRET-EM.1962.5007643>
- Cesário, M., Agapito, D., Almeida, H., & Fernandes, S. (2017). The use of design as a strategic tool for innovation: an analysis for different firms' networking behaviours. *European Planning Studies*, 25(11), 2097–2116. <http://doi.org/10.1080/09654313.2015.1135232>
- Chandler, A. D. (1962). Strategy and structure: Chapters in the history of the industrial enterprise. *MIT Press*, 120, 519–551. <http://doi.org/10.2307/3111403>
- Chowdhury, S., Haque, K. A., & Sumon, M. (2015). Implementation of Lean Strategies in a Furniture Manufacturing Factory. *IOSR Journal of Mechanical and Civil Engineering Ver. III*, 12(1), 2320–334. <http://doi.org/10.9790/1684-12134550>
- Claycamp, H. J., & Massy, W. F. (1968). A Theory of Market Segmentation. *Journal of Marketing Research (JMR)*, 5(4), 388–394. <http://doi.org/10.2307/3150263>
- Com, R., Da, O. C., Da, D., & Produtos, I. D. E. (2017). Ceasing Copycat Behaviour : Developing Product-Design Identity Through Industry and Handcraft Interaction, 12(2), 21–40.
- Cooper, D., & Schindler, P. (2008). *Business Research Methods*. *Social Research*. <http://doi.org/10.4135/9780857028044>
- Creswell. (2007). Qualitative inquiry and research design. *Qualitative Inquiry and Research Design*, Chapter 4. <http://doi.org/9781412995306>
- Creswell, J. W., & Plano Clark, V. (2007). *Designing and conducting mixed-methods research*. *The Sage handbook of qualitative research*.
- Cross, N. (2004). Expertise in design: An overview. In *Design Studies* (Vol. 25, pp. 427–441). <http://doi.org/10.1016/j.destud.2004.06.002>

- Cruickshank, L., & Evans, M. (2012). Designing creative frameworks : design thinking as an engine for new facilitation approaches. *Journals Arts and Technology*, 5(1), 73–85.
- Doyle, P. (1989). Building successful brands: The strategic options. *Journal of Marketing Management*, 5(1), 77–95. <http://doi.org/10.1080/0267257X.1989.9964089>
- DTI. (2005). *Creativity , Design and Business Performance*. Business.
- Economic Census 2016, Department of Statistic, Malaysia, 2017. (2017). *Economic Census 2016: Profile of SMEs*.
- Edwards-Schachter, M., García-Granero, A., Sánchez-Barrioluengo, M., Quesada-Pineda, H., & Amara, N. (2015). Disentangling competences: Interrelationships on creativity, innovation and entrepreneurship. *Thinking Skills and Creativity*, 16, 27–39. <http://doi.org/10.1016/j.tsc.2014.11.006>
- Espinosa &Parada. (2014). Aligning Organizational Structure With Strategy ., *15th Toulon-Verona Conference*, (September), 309–318.
- Fadzline Tamyaz, P. (2016). Attracting Manufacturers to Radical Design Innovation : a Malaysian Perspective. *International Symposium & Exhibition on Business and Accounting 2016 (ISEBA 2016)*, 2016(Iseba), 1–6.
- Fadzline Tamyaz, P., Razali, A., & Norzanah, M. (2008). The Dilemma of Bumiputera Furniture Entrepreneurs. *2008ifcx International Furniture Conference and Exhibition*.
- Feng, N. (2014). BUILDING A STRONG BRAND AND MANAGING BRAND. *University of Bridgeport*, 1–6.
- Flick, U. (2009). An Introduction to Qualitative Research. *An Introduction to Qualitative Research*, 122; 444. <http://doi.org/978-1-84787-323-1>
- Florida, R. (2002). The Rise of the Creative Class. *Washington Monthly*, (May), 15–25. <http://doi.org/10.1111/j.1467-8691.2006.00398.x>
- Galafassi, A. (2011). Considerations on Design Management of Furniture Manufacturing Companies in. *Design*, (August).
- Galbraith, J. R. (2009). *T He S Tability of M Odel E Cosystems*.
- Hajjat, M. M., Hajjat, F., Box, P. O., & Khoud, A. (2014). The Effect of Product Quality on Business Performance in Some Arab Companies University of Massachusetts at Amherst, 5(5), 498–508.

- Harun, Z., Zaki, P. H., Ismail, M. H., Khairil, M., & Awang, W. (2014). Trend of Timber Products Export in Malaysia. *International Conference on Business, Management & Corporate Social Responsibility (ICBMCSR' 14)*, (February 2014), 45–49. <http://doi.org/10.13140/2.1.2381.8249>
- Henderson, R. M., & Clark, K. B. (1990). Architectural Innovation: The Reconfiguration of Existing Product Technologies and the Failure of Established Firms. *Administrative Science Quarterly*, 35(1), 9. <http://doi.org/10.2307/2393549>
- Herzallah, A. M., Gutierrez-Gutierrez, L., & Munoz Rosas, J. F. (2014). Total quality management practices, competitive strategies and financial performance: the case of the Palestinian industrial SMEs. *Total Quality Management & Business Excellence*, 25(5–6), 635–649. <http://doi.org/10.1080/14783363.2013.824714>
- Hill, T. (1993). *Manufacturing Strategy*. MacMillan (Vol. 12). <http://doi.org/10.1007/978-94-009-2189-4>
- Ho, W. F. (2016). Timber product growth to slow. *The Star Online*. Retrieved from <http://www.thestar.com.my/metro/smebiz/news/2016/03/28/timber-product-growth-to-slow/>
- Honken, N. (2013). Dreyfus Five-Stage Model of Adult Skills Acquisition Applied to Engineering Lifelong Learning. In *American Society for Engineering Education*. <http://doi.org/10.1007/s11023-008-9131-5>
- Jabar, J., Soosay, C., & Santa, R. (2011). Organisational learning as an antecedent of technology transfer and new product development. *Journal of Manufacturing Technology Management*, 22(1), 25–45. <http://doi.org/10.1108/17410381111099798>
- Karim, M. A., Smith, A. J. R., Halgamuge, S. K., & Islam, M. M. (2008). A comparative study of manufacturing practices and performance variables. *International Journal of Production Economics*, 112(2), 841–859. <http://doi.org/10.1016/j.ijpe.2007.07.005>
- Kates, A., & Galbraith, J. (2007). *Designing Your Organization: Using the STAR Model to Solve 5 Critical Design Challenges*.
- Kohar, U. H. A. (2013). The Factors that Influence the Sustainability of Malaysian Bumiputera ( Indigenous ) New Technology-Based Small Firms, (November). <http://doi.org/10.13140/RG.2.2.21084.39045>
- Kootstra, G. L. (2009). *The incorporation of design management in today's business practices*.

- Kunifuji, S. (2013). A Japanese problem solving approach : the KJ-Ho method. *Proceedings of KICSS'2013*, Pp. 333-338 Progress & Business Publishers, Kraków 2013, 333–338.
- Lala P., I., Preda, G., & Boldea, M. (2010). a Theoretical Approach of the Concept of Innovation. *Managerial Challenges of the Contemporary Society*, (1), p151–156. 6p.
- Limiri, E. K. (2017). Market Segmentation As a Strategy for. *International Journal of Economics, Commerce and Management*, V(12), 544–553.
- Lockwood, T. (2009). Transition: How to Become a More Design-Minded Organization. *Design Management Review*, 20(3), 28–37. <http://doi.org/10.1111/j.1948-7169.2009.00019.x>
- Malerba, F. (2002). Sectoral systems of innovation and production. *Research Policy*, 31(2), 247–264. Retrieved from <http://www.sciencedirect.com/science/article/B6V77-459H02Y-5/2/805c2d6a3af53b43a33f2a221520a7f0>
- Malhotra, N., Hall, J., Shaw, M., & Oppenheim, P. (2006). *Marketing research : an applied orientation*. Pearson Education Australia. Retrieved from <http://dro.deakin.edu.au/view/DU:30010407#.WljpUOCXZgl.mendeley>
- Mamat, M., & Ismail, A. (2011). The Study of Bumiputera Furniture Industry in Kelantan. *American International Journal of Contemporary Research*, 1(3), 88–98.
- Manzako, B. (2004). DESIGN MANAGEMENT FROM THE PERSPECTIVE OF. *11th European Academy Design Conference*.
- Marimuthu, M., & Arokiasamy, L. I. (2009). Human Capital Development and Its Impact on Firm Performance: Evidence From Developmental Economics. *Journal of International Social Research*, 2(8), 265–272. Retrieved from <http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:No+Title#0>
- Merrilees, B. (2007). A theory of brand-led SME new venture development. *Qualitative Market Research: An International Journal*, 10(4), 403–415. <http://doi.org/10.1108/13522750710819739>
- Ministry of Plantation Industries and Commodities. (2008). *National Timber Industry Policy 2009-2020* (2009th ed.).
- Mohamed, S., & Abdullah, S. (2006). Wooden Household Furniture: Does Brand Matter? *Pertanika Journal of Tropical Agricultural Science*, 29(1&2), 19–14.

- Mohan, B. C., & Sequeira, D. A. H. (2009). An Application of David A. Aaker's Brand Identity Planning model - A case study approach. In *Proceedings of 2009 International Conference on Economics, Business Management and Marketing* (pp. 9–11).
- Mohidin, M. J. (2002). *AN ANALYSIS ON COMPETITIVENESS AN ANALYSIS ON COMPETITIVENESS*. Universiti Malaysia Sarawak.
- Morgan, H., & Cooper, B. (2015). IKEA hacking A case study on design , marketing and branding strategies.
- Mozota, B. B. (2010). The Four Powers of Design: A Value Model in Design Management. *Design Management Review*, 17(2), 44–53. <http://doi.org/10.1111/j.1948-7169.2006.tb00038.x>
- Muhammad, M. Z., Char, A. K., Yasoa', M. R., & Hassan, Z. (2010). Small and Medium Enterprises ( SMEs ) Competing in the Global Business Environment: A Case of Malaysia. *Challenges*, 3(1), 66–75. <http://doi.org/10.5539/ibr.v3n1p66>
- Muzellec, L., & Lambkin, M. C. (2009). Corporate branding and brand architecture: A conceptual framework. *Marketing Theory*, 9(1), 39–54. <http://doi.org/10.1177/1470593108100060>
- Na, J. H. (2016). *A Study of Design Innovation Framework for Innovative Manufacturing Companies in the UK*.
- Nam, K., & Carnie, B. (2014). Design effectiveness: Building customer satisfaction and loyalty through design (pp. 1707–1727). Umeå Institute of Design.
- Negru-Strauti, G., & Pugna, A.-P. (2013). Improving performance through Lean Improving performance through Lean. *Fascicle of Management and Technological Engineering*, (March 2014), 37–41.
- Netland, T. H. (2015). Critical success factors for implementing lean production: the effect of contingencies. *International Journal of Production Research*, 53(October), 1–16. <http://doi.org/10.1080/00207543.2015.1096976>
- Neuman, W. L. (2014). *Social Research Methods: Qualitative and Quantitative Approaches. Relevance of social research* (Vol. 8). Pearson Education Limited. <http://doi.org/10.2307/3211488>
- Ng, B. K., & Thiruchelvam, K. (2012). The dynamics of innovation in Malaysia's wooden furniture industry: Innovation actors and linkages. *Forest Policy and Economics*, 14(1), 107–118. <http://doi.org/10.1016/j.forpol.2011.08.011>



- Ngui, K. S., Agrawal, A., & Voon, J. P. (2011). Challenges Impeding Competitiveness of the Wooden Furniture Manufacturing Industry : the Case of Furniture Industry in Sarawak , Malaysia. *Australian Journal of Basic and Applied Sciences*, 5(9), 1135–1145.
- Nicolov, M., & Badulescu, A. (2012). Different Types of Innovations Modeling. *Annals & Proceedings of DAAAM International 2012*, 23(1), 1071–1074.
- Nor, N. M., Fadzline Tamyez, P., Jamal, S., & Nasir, A. (2012). A Conceptual Framework on the Relationship between Furniture Design and Branding Strategy-Performance Relationship in Malaysian Exporting Furniture Firms. *Online Journal of Social Sciences Research ©2012 Online Research Journals Full Length Research*, 1(2), 42–48. Retrieved from <http://www.onlineresearchjournals.org/JSS>
- Nor, N. M., Jamal, S., & Fadzline, P. (2012). BRAND STRATEGY IN SMALL AND MEDIUM SIZE ENTERPRISES ( SMEs ) IN THE CONTEXT OF THE MALAYSIAN FURNITURE INDUSTRY: OPEN-ENDED. In *Proceedings for the First International Qualitative Research Conference*, (pp. 6–7).
- O'Neill, P., Sohal, A., & Teng, C. W. (2016). Quality management approaches and their impact on firms× financial performance - An Australian study. *International Journal of Production Economics*, 171, 381–393. <http://doi.org/10.1016/j.ijpe.2015.07.015>
- Olson, E. (1998). Design strategy and competitive advantage. *Business Horizons*, 41(2), 55–61. [http://doi.org/10.1016/S0007-6813\(98\)90035-0](http://doi.org/10.1016/S0007-6813(98)90035-0)
- Omar, S. S., & Arokiasamy, L. (2009). the Background and Challenges Faced By the Small Medium. *International Conference on Human Capital Development*, (May), 25–27.
- Osman, N. S., Azlin, K. A., Rahman, A. R. A., & Ja'afar, M. F. Z. (2016). Developing a Conceptual Framework of Malaysia Furniture Industry Towards. In *Developing A Conceptual Framework of Malaysia Furniture Industry Towards Economic Transformation* (pp. 216–225).
- Osman, N. S., Rahman, K. A. A. A., Rahman, A. R. A., & Ja'afar, M. F. Z. (2018a). Competitive Influence Factors among Bumiputera Furniture Manufacturer. *International Journal of Academic Research in Business and Social Sciences*, 8(7), 445–452. <http://doi.org/10.6007/IJARBSS/v8-i7/4386>
- Osman, N. S., Rahman, K. A. A. A., Rahman, A. R. A., & Ja'afar, M. F. Z. (2018b). The Effect of Design Capability Characteristic on Design Performance for Bumiputera Furniture Companies. *International Journal of Business and Management*, 2(3), 30–35. <http://doi.org/10.26666/rmp.ijbm.2018.3.5>

- Ostaseviciute, R., & Sliburyte, L. (2008). Theoretical Aspects of Product Positioning in the Market. *Engineering Economics*, 1(56), 97–103. Retrieved from <http://search.ebscohost.com.lib.kaplan.edu/login.aspx?direct=true&db=bth&AN=31380691&site=eds-live>
- Pearce, A., Pons, D., & Neitzert, T. (2018). Implementing lean—Outcomes from SME case studies. *Operations Research Perspectives*, 5, 94–104. <http://doi.org/10.1016/j.orp.2018.02.002>
- Pitta, D. A., Wood, V. R., & Franzak, F. J. (2008). Nurturing an effective creative culture within a marketing organization. *Journal of Consumer Marketing*, 25, 137–148. <http://doi.org/10.1108/07363760810870635>
- Porter, M. E. (2008). *Competitive advantage: Creating and sustaining superior performance*. New York (Vol. 15).
- Quesada, H., & Gazo, R. (2007). Methodology for determining key internal business processes based on critical success factors: A case study in furniture industry. *Business Process Management Journal*, 13(1), 5–20. <http://doi.org/10.1108/14637150710721104>
- Rajalahti, T., & Kvalheim, O. M. (2011). Multivariate data analysis in pharmaceuticals: A tutorial review. *International Journal of Pharmaceutics*. <http://doi.org/10.1016/j.ijpharm.2011.02.019>
- Rajesh, K., Lakshmi, J. S., & Ramarao, T. (2016). BEST PRACTICES WITH LEAN PRINCIPLES IN FURNITURE GREEN MANUFACTURING. *International Journal of Advance Research in Science and Engineering*, 5(8), 68–77.
- Ratnasingam, J., & Ioras, F. (2003). The sustainability of the Asian wooden furniture industry. *European Journal of Wood and Wood Products*, 61, 233–237. <http://doi.org/10.1007/s00107-003-0382-9>
- Ratnasingam, J., Ioraş, F., & Wenming, L. (2011). Sustainability of the rubberwood sector in Malaysia. *Notulae Botanicae Horti Agrobotanici Cluj-Napoca*, 39(2), 305–311.
- Ratnasingam Jegatheswaran. (2017). *The Malaysia Furniture Industry: Charting Its Growth Potential*. (UPM, Ed.) (1st ed.).
- Reja, U., Manfreda, K. L., Hlebec, V., & Vehovar, V. (2003). Open-ended vs. Close-ended Questions in Web Questionnaires. *Developments in Applied Statistics*, 19, 159–177. Retrieved from [http://www.websm.org/uploadi/editor/Reja\\_2003\\_open\\_vs\\_close-ended\\_questions.pdf](http://www.websm.org/uploadi/editor/Reja_2003_open_vs_close-ended_questions.pdf)
- RMT. (2000). Rancangan malaysia ketujuh.

- Rode, V., & Vallaster, C. (2005). Corporate Branding for Start-ups: The Crucial Role of Entrepreneurs. *Corporate Reputation Review*, 8(2), 121–135. <http://doi.org/10.1057/palgrave.crr.1540244>
- Sabri, S., & Shayan, E. (2004). Lean Strategies for Furniture Manufacturing. In *Proceedings of the Fifth Asia Pacific Industrial Engineering and Management Systems Conference 2004 LEAN* (pp. 1–8).
- Sahlan, S. A. B., Rahman, N. S. B. A., & Amin, S. B. M. (2014). Intellectual Property Awareness Among Public: Comparative Study Between Malaysia and United Kingdom. *International Journal of Technical Research and Applications*, 10(10), 84–88.
- Sahoo, S., & Yadav, S. (2018). Total Quality Management in Indian Manufacturing SMEs. *Procedia Manufacturing*, 21, 541–548. <http://doi.org/10.1016/j.promfg.2018.02.155>
- Saleh, A., & Ndubisi, N. (2006). An evaluation of SME development in Malaysia. *International Review of Business ...*, 2(1), 1–14. Retrieved from <http://www.geasiapacifico.org/documents/IBRP1.pdf>
- Scupin, R. (1997). The KJ Method: A Technique for Analyzing Data Derived from Japanese Ethnology. *Human Organization*, 56(2), 233–237. <http://doi.org/10.17730/humo.56.2.x335923511444655>
- Sharma, M., & Kodali, R. (2008). TQM implementation elements for manufacturing excellence. *The TQM Journal*, 20(6), 599–621. <http://doi.org/10.1108/17542730810909365>
- Singapore Furniture Outlook 2014*. (2014).
- Song, M. J., & Chung, K. (2008). The Role of Chief Executive Officers in Design Management Exercises: Content Analysis and Case Studies. *Design Management Journal*, 3(2), 32–44. <http://doi.org/10.1111/j.1948-7177.2008.tb00012.x>
- Sousa, F. C. de. (2007). Still the elusive definition of creativity. *International Journal of Psychology: A Bio Psychosocial*, 2(1989), 55–82. Retrieved from [http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:STILL+THE+ELUSIVE+DEFINITION+OF#3%5Cnhttp://www.psyjournal.vdu.lt/uploads/Main/2008\\_2\\_still\\_the\\_elusive\\_definition\\_of\\_creativity.pdf](http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:STILL+THE+ELUSIVE+DEFINITION+OF#3%5Cnhttp://www.psyjournal.vdu.lt/uploads/Main/2008_2_still_the_elusive_definition_of_creativity.pdf)
- Starostka, J. (2012). Different Approaches. *Swedish Design Research Journal*, 2, 46–52.
- Sukarmijan, S.-S., & Sapong, O. D. V. (2014). The Importance of Intellectual Property for SMEs; Challenges and Moving Forward. *UMK Procedia*, 1(October 2013), 74–81. <http://doi.org/10.1016/j.umkpro.2014.07.010>



- Tavares, V. (2015). Brand Management in SMEs: Conceptualization of Differences and Research Agenda. *European Journal of Applied Business Management*, 1(1), 128–153. <http://doi.org/10.1016/j.eplepsyres.2011.07.003>
- Tether, B. (2005). The Role of Design in Business Performance. *Think Piece*, 1–26.
- The Design Council. (2007). The Value of Design Factfinder Report. *Design*, 119. Retrieved from [www.designfactfinder.co.uk](http://www.designfactfinder.co.uk)
- Ticehurst, G. W., & Veal, A. J. (2000). *Business research methods: a managerial approach*. Pearson Education, Australia.
- Toyota. (2013). Chapter 7 . Organizational Structure and Change Case in Point : Toyota Struggles With Organizational Structure. *Toyota*.
- Treasury, H. M., Review, C., Design, O. B., No, E. P., Performance, B., Geography, E., ... Performance, T. E. (2008). *Design Council Briefing 01 The impact of design on business To survive in challenging economic conditions and stay ahead of overseas competition , UK businesses must add value – designing innovative products and services instead of cutting prices . Howeve. Design*.
- Trueman, D. M., & Jobber, P. D. (1998). Competing through design. *Long Range Planning*, 31(4), 594–605. [http://doi.org/10.1016/S0024-6301\(98\)80052-6](http://doi.org/10.1016/S0024-6301(98)80052-6)
- Ullah, M. A, Khanam, A. A. (2008). Strategic Management Models: An Evaluation. *Prime University Journal*, 2(2), 1–12.
- Valipoor, S., & Ujang, B. (2011). Challenges of Sustainable Design in Malaysian Furniture Industry. ... *Conference on Environment and Industrial ...*, 12(1), 60–64. <http://doi.org/10.1017/CBO9781107415324.004>
- van Teijlingen, E., & Hundley, V. (2002). The importance of pilot studies. *Nursing Standard*, 16(40), 33–36. <http://doi.org/10.7748/ns2002.06.16.40.33.c3214>
- Veljkovic, S., & Kalicanin, D. (2016). Improving business performance through brand management practice. *Economic Annals*, 61(208), 137–167. <http://doi.org/10.2298/EKA1608137V>
- Vickery, S. K., Dröge, C., & Markland, R. E. (1997). Dimensions of manufacturing strength in the furniture industry. *Journal of Operations Management*, 15(4), 317–330. [http://doi.org/10.1016/S0272-6963\(97\)00012-0](http://doi.org/10.1016/S0272-6963(97)00012-0)

- Visser, W. (2009). Design: one, but in different forms. *Design Studies*, 30(3), 187–223. <http://doi.org/10.1016/j.destud.2008.11.004>
- Whyte, J. (2005). Management of creativity and design within the firm. *Thought A Review Of Culture And Idea*, 1–36.
- Yaacob, M. R., & Tuan Hassan, T. M. R. (2014). Senario Usahawan dan Keusahawanan Melayu dalam Industri Perabot di Malaysia. *PROSIDING PERKEM Ke-9 (2014)* 866 - 874 ISSN: 2231-962X, 9, 866–874.
- Yates, S. J. (2004). *Doing Social Science Research*. Social Science (Vol. 1).
- Yin, R. K. (2014). Case study research: design and methods. In *Case Study Research*.
- Yuan, J. T. J., Kong, K. Y., Parveen, H., Zhixiang, H., & Rajasekaran, G. (2014). An overview of design cognition between experts and novices. *International Conference Cognition on Advanded Design Reserach and Education (ICADRE 2014)*, 5, 978–981. <http://doi.org/10.3850/978-981-09-1348-9>
- Zahra, S. A., & George, G. (2002). Absorptive Capacity: a Review , Reconceptualization , and Extension. *Academy of Management Review*, 27(2), 185–203. <http://doi.org/10.2307/4134351>
- Zainal Aznam Yusof, & Bhattasali, D. (2008). Economic Growth and Development in Malaysia: Policy Making and Leadership. *Commission on Growth and Development*, 27, 1–60. <http://doi.org/10.1016/j.giq.2013.05.018>
- Zakaria, N. A., Merous, N. H., & Ahmad, I. (2014). Assessment of rubberwood value-added in Malaysia's wooden furniture industry. *International Journal of Economics and Management*, 8(1), 1–9.
- Zhiying, L. I. U., & Xiaofeng, Z. (2013). The Analysis of Chinese Enterprises ' Upgrading From OEM to ODM: The Opportunity Windows and and Paths, 9(3), 1–8. <http://doi.org/10.3968/j.css.1923669720130903.2206>
- Zhou, B., Zhao, Q., Helgi, T. :, Fridriksson, V., Jafari, H., & Fredriksson, V. (2010). Application of Lean Focus on Manufacturing Process, (May). Retrieved from <http://www.diva-portal.org/smash/get/diva2:344865/fulltext01>