05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

TECHNOLOGY, ORGANISATION AND ENVIRONMENT FACTORS AND SMEs PERFORMANCE IN DUBAI AND ABU DHABI

05-4506832 Perpustakaan Tuanku Bainun ptbupsi

NASSER KHALFAN HUMAID BELHOUL ALDARMAKI

SULTAN IDRIS EDUCATION UNIVERSITY

2024

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

TECHNOLOGY, ORGANISATION AND ENVIRONMENT FACTORS AND SMEs PERFORMANCE IN DUBAI AND ABU DHABI

NASSER KHALFAN HUMAID BELHOUL ALDARMAKI

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

THESIS SUBMITTED IN FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

FACULTY OF MANAGEMENT & ECONOMICS
SULTAN IDRIS EDUCATION UNIVERSITY

2024

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Please tick (√)	
Project Paper	
Masters by Research	
Master by Mixed Mode	
PhD	✓

INSTITUTE OF GRADUATE STUDIES

DECLARATION OF ORIGINAL WORK

This declaration is made on the 3rd June 2024

i. Student's Declaration:

I, NASSER KHALFAN HUMAID BELHOUL ALDARMAKI (P20182002299) FACULTY OF MANAGEMENT & ECONOMICS (PLEASE INDICATE STUDENT'S NAME, MATRIC NO. AND FACULTY) hereby declare that the work entitled TECHNOLOGY, ORGANISATION AND ENVIRONMENT FACTORS AND SMEs PERFORMANCE IN DUBAI AND ABU DHABI is my original work. I have not copied from any other students' work or from any other sources except where due reference or acknowledgement is made explicitly in the text, nor has any part been written for me by another person.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Nasser
Signature of the student

ii. Supervisor's Declaration:

I Dr. Hartini Jaafar (SUPERVISOR'S NAME) hereby certifies that the work entitled TECHNOLOGY, ORGANISATION AND ENVIRONMENT FACTORS AND SMEs PERFORMANCE IN DUBAI AND ABU DHABI (TITLE) was prepared by the above named student, and was submitted to the Institute of Graduate Studies as a * partial/full fulfillment for the conferment of DOCTOR OF PHILOSOPHY (PLEASE INDICATE THE DEGREE), and the aforementioned work, to the best of my knowledge, is the said student'swork.

11/6/2024
Date

Signature of the Supervisor

PROFESOR MADYA DR. HARTINI BINTI JAAFAR
Timbalan Dekan (Kemasukan & Pengkuliahan)
Institut Pengajian Siswazah
Universiti Pendidikan Sultan Idris

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

INSTITUT PENGAJIAN SISWAZAH /
INSTITUTE OF GRADUATE STUDIES

BORANG PENGESAHAN PENYERAHAN TESIS/DISERTASI/LAPORAN KERTAS PROJEK
DECLARATION OF THESIS/*DISSERTATION/PROJECT PAPER FORM*

Tajuk / Title: TECHNOLOGY, ORGANISATION AND ENVIRONMENT FACTORS AND SMEs PERFORMANCE IN DUBAI AND ABU DHABI

No. Matrik /Matric No.: P20182002299
Saya / I : NASSER KHALFAN HUMAID BELHOUL ALDARMAKI

mengaku membenarkan Tesis/Disertasi/Laporan Kertas Projek (Kedoktoran/Sarjana)* ini disimpan di Universiti Pendidikan Sultan Idris (Perpustakaan Tuanku Bainun) dengan syarat-syarat kegunaan seperti berikut:-

acknowledged that Universiti Pendidikan Sultan Idris (Tuanku Bainun Library) reserves the right as follows:-

1. Tesis/Disertasi/Laporan Kertas Projek ini adalah hak milik UPSI.

   The thesis is the property of Universiti Pendidikan Sultan Idris

2. Perpustakaan Tuanku Bainun dibenarkan membuat salinan untuk tujuan rujukan dan penyelidikan.

   Tuanku Bainun Library has the right to make copies for the purpose of reference and research.

3. Perpustakaan dibenarkan membuat salinan Tesis/Disertasi ini sebagai bahan pertukaran antara Institusi Pengajian Tinggi.

   The Library has the right to make copies of the thesis for academic exchange.

4. Sila tandakan (√) bagi pilihan kategori di bawah / Please tick (√) from the categories below:-

☐ **SULIT / *CONFIDENTIAL***

Mengandungi maklumat yang berdarjah keselamatan atau kepentingan Malaysia seperti yang termaktub dalam Akta Rahsia Rasmi 1972. / *Contains confidential information under the Official Secret Act 1972*

☐ **TERHAD / *RESTRICTED***

Mengandungi maklumat terhad yang telah ditentukan oleh organisasi/badan di mana penyelidikan ini dijalankan. / *Contains restricted information as specified by the organization where research was done*

☑ **TIDAK TERHAD / *OPEN ACCESS***

Nasser
(Tandatangan Pelajar/ Signature)

(Tandatangan Penyelia / *Signature of Supervisor*)
PROFESOR MADYA DR. HARTINI BINTI JAAFAR
Timbalan Dekan (Kemasukan & Pengkuliahan)
Institut Pengajian Siswazah
Universiti Pendidikan Sultan Idris

Tarikh: 11/6/2024

Catatan: Jika Tesis/Disertasi ini **SULIT @ TERHAD**, sila lampirkan surat daripada pihak berkuasa/organisasi berkenaan dengan menyatakan sekali sebab dan tempoh laporan ini perlu dikelaskan sebagai **SULIT dan TERHAD**.

Notes: If the thesis is CONFIDENTAL or RESTRICTED, please attach with the letter from the related authority / organization mentioning the period of confidentiality and reasons for the said confidentiality or restriction

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

ACKNOWLEDGEMENT

In the name of Allah, the Most Beneficent, the Most Merciful. I would like to express my sincere appreciation to my mother, father, friends, supervisors, and examiners for their unceasing encouragement and support. Thank you very much for all the assistance rendered that helped me to remain steadfastly passionate in undertaking this challenging academic endeavor to its successful completion. It was a wonderful and fulfilling journey of exploring new knowledge, the success of which owed to the kindness, caring, and understanding of all the above individuals.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi
05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

ABSTRACT

The aim of this study is to examine the effects of technology, organization and environment (TOE) factors on SMEs' performance and the mediating role of Activity-Based Costing (ABC) implementation critical success factors on the relationships between TOE factors and SMEs performance. The relationship between these variables is proposed based on Resource-Based View (RBV) Theory and TOE framework. Based on survey method through the use of questionnaires, a total of 274 responses were received from owners/managers of SMEs in Dubai and Abu Dhabi. The Partial Least Squares Method (PLS) algorithm and the bootstrapping technique were used to test the study's hypotheses. The overall findings signified positive effects of technological (β= 0.257, t= 5.393) and organizational (β= 0.520, t = 5.326) factors on SMEs' performance. However, environmental factor (β= -0.016, t = 0.194) is not found to be a significant driver to promote SMEs performance. Furthermore, ABC implementation critical success factors (β=0.211, t=3.897) plays a crucial role in enhancing the performance of SMEs. Findings of the study also revealed positive effects of technological (β = 0.162, t = 2.601), organizational (β=0.372, t = 3.370) and environmental (β=0.300, t= 2.635) factors on ABC implementation critical success factors. In addition, ABC implementation critical success factors were found to mediate the relationships between technological (β = 0.034, t = 1.969), organizational (β = 0.079, t = 2.854) and environmental (β = 0.063, t = 1.972) factors and SMEs performance. Going by these results, it can be asserted that technological and organizational resources constitute the basis for firm competitive advantage and enhanced performance. Most importantly, the implementation of ABC critical success factors is found to be a crucial mechanism through which TOE factors can enhance SMEs performance. The implications of this study suggested that the owners/managers of SMEs in the UAE should ensure optimal utilization of TOE factors and as well as ABC implementation critical success factors to enhance performance among SMEs.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

FAKTOR TEKNOLOGI, ORGANISASI DAN PERSEKITARAN DAN PRESTASI PERUSAHAAN KECIL DAN SEDERHANA (PKS) DI DUBAI DAN ABU DHABI

ABSTRAK

Kajian ini bertujuan memeriksa kesan faktor teknologi, organisasi dan persekitaran (TOE) terhadap prestasi PKS serta peranan faktor kejayaan kritikal pelaksanaan sistem Pengekosan Berasaskan Aktiviti (ABC) dalam memediasi hubungan antara faktor TOE dan prestasi PKS. Hubungan antara kesemua pembolehubah adalah didasari oleh Teori Resource-Based View (RBV) dan kerangka TOE. Berdasarkan kaedah tinjauan melalui penggunaan soal selidik, 274 maklum balas diterima daripada pemilik/pengurus PKS di Dubai dan Abu Dhabi. Kaedah Pemodelan Kuasa Dua Terkecil Separa (PLS) dan teknik bootstrapping digunakan dalam pengujian hipotesis kajian. Dapatan kajian mendapati faktor teknologi (β= 0.257, t= 5.393) dan organisasi (β= 0.520, t = 5.326) mempunyai kesan positif yang signifikan terhadap prestasi PKS. Walau bagaimanapun, faktor persekitaran (β= -0.016, t = 0.194) didapati tidak mempunyai kesan signifikan terhadap prestasi PKS. Faktor kejayaan kritikal pelaksanaan sistem ABC (β=0.211, t=3.897) juga didapati memainkan peranan penting dalam meningkatkan prestasi PKS. Dapatan kajian juga menunjukkan kesan positif faktor teknologi (β = 0.162, t = 2.601), organisasi (β=0.372, t = 3.370) dan persekitaran (β=0.300, t= 2.635) terhadap faktor kejayaan kritikal pelaksanaan sistem ABC. Selain itu, faktor kejayaan kritikal pelaksanaan sistem ABC didapati memediasi hubungan antara faktor teknologi (β = 0.034, t = 1.969), organisasi (β = 0.079, t = 2.854) dan persekitaran (β = 0.063, t = 1.972) dan prestasi PKS. Berdasarkan dapatan kajian, dapat disimpulkan bahawa faktor teknologi dan organisasi mampu memberikan kelebihan daya saing dan meningkatkan prestasi syarikat. Selain itu, faktor kejayaan kritikal pelaksanaan sistem ABC didapati merupakan satu mekanisme penting yang mendorong faktor TOE dalam meningkatkan prestasi PKS. Implikasi kajian ini mencadangkan bahawa pemilik/pengurus PKS di UAE perlu memastikan penggunaan faktor TOE dan kejayaan kritikal pelaksanaan sistem ABC yang optimum dalam memacu peningkatan prestasi PKS.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

TABLE OF CONTENTS

		Page
DECLARATION OF ORIGINAL WORK		ii
DECLARATION OF THESIS SUBMISSION		iii
ACKNOWLEDGEMENT		iv
ABSTRACT		v
ABSTRAK		vi
TABLE OF CONTENT		vii
LIST OF TABLES		xv
LIST OF FIGURES		xvii
LIST OF ABBREVIATIONS		xviii
LIST OF APPENDICES		xx
CHAPTER 1	**INTRODUCTION**	
	1.1 Background to the Study	1
	1.2 Statement of the Problem	9
	1.3 Research Objectives	14
	1.4 Research Questions	15
	1.5 Research Hypotheses	16
	1.6 Theoretical Framework	17
	1.7 Conceptual Framework	18
	1.8 Significance of the Study	20
	1.9 Scope of the Study	22
	1.10 Operational Definition of Key Terms	22

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

	1.10.1	Small and Medium-sized Enterprises (SMEs)	22
	1.10.2	Performance	23
	1.10.3	Technological Factor	23
	1.10.4	Organizational Factor	24
	1.10.5	Environment Factor	24
	1.10.6	ABC Implementation Critical Success Factors	25
1.11		Organization of Thesis Chapters	25
1.12		Summary of Chapter	26
CHAPTER 2		**LITERATURE REVIEW**	
2.1		Introduction	27
2.2		Contextual Background	28
	2.2.1	UAE's National Agenda for Entrepreneurship	29
	2.2.2	Small and Medium-Sized Enterprises (SMEs) in United Arab Emirate (UAE)	30
	2.2.3	Characteristics and Roles of SMEs in the United Arab Emirate (UAE)	33
2.3		SME Performance in UAE	36
2.4		Technological Factor among SMEs	46
2.5		Organizational Factor among SMEs	51
2.6		Environmental Factor Among SMEs	56
2.7		The Adoption of Management Accounting Innovations (MAIs) among SMEs	60
2.8		The Implementation of the ABC System	65
	2.8.1	A Comparison of Traditional Costing System and Activity-Based Costing (ABC) System	71

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

2.8.2 Dimensions of ABC Implementation Critical Success Factors 75

2.8.2.1 Complexity of Manufacturing/Costing 75

2.8.2.2 Cost Data Usage within the Business Unit 76

2.8.2.3 Top Management Support 77

2.8.2.4 Employee Training on ABC 77

2.8.2.5 ABC as Performance Measurement 78

2.9 Hypotheses Development 79

2.9.1 Technological Factor and SMEs Performance 79

2.9.2 Organizational Factor and SMEs Performance 84

2.9.3 Environmental Factors and SMEs Performance 88

2.9.4 ABC Implementation Critical Success Factors and SME performance 91

2.9.5 Technological, Organizational and Environmental Factors, and ABC Implementation Critical Success Factors 92

2.9.5.1 Technological Factor and ABC Implementation Critical Success Factors 92

2.9.5.2 Organizational Factor and ABC Implementation Critical Success Factors 95

2.9.5.3 Environmental Factor and ABC Implementation Critical Success Factors 96

2.9.6 The Mediating Role of ABC Implementation Critical Success Factors 98

2.10 Theoretical Framework 104

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

2.10.1 Relevant Theories 104

2.10.1.1 Knowledge-Based View (KBV) 104

2.10.1.2 Diffusion of Innovation (DOI) Theory 107

2.10.2 Underpinning Theory 111

2.10.2.1 Technology, Organization and Environment (TOE) Framework 111

2.10.2.2 Resource-Based View Theory 115

2.11 Summary 117

CHAPTER 3 METHODOLOGY

3.1 Introduction 118

3.2 Research Process 119

3.3 Research Philosophy/Paradigm of the Study 120

3.4 Research Design 126

3.5 Research Approach 129

3.6 Research Strategy 132

3.7 Research Choice 134

3.8 Population of the Study 137

3.9 Sample Size 137

3.10 Sampling Technique 140

3.10.1 Sampling Approach 142

3.11 Unit of Analysis 144

3.12 Method of Data Collection 145

3.13 Questionnaire Design 146

3.14 Demographic Information 147

3.15 Pre-Testing 147

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

3.16 Measurement of Variables 149

3.16.1 Dependent Variable – SMEs Performance 149

3.16.2 Technological Factor 152

3.16.3 Organizational Factor 153

3.16.4 Environmental Factor 154

3.16.5 ABC Implementation Critical Success Factors 155

3.17 Pilot Test 156

3.18 Statistical Analysis 160

3.18.1 Data Screening and Preliminary Analysis 162

3.18.2 Missing Data Analysis 163

3.18.3 Outlier 164

3.18.4 Normality 165

3.18.5 Multicollinearity Test 167

3.18.6 Non-Response Bias 168

3.18.7 Common Method Variance 169

3.19 Descriptive Statistics 170

3.19.1 Assessment of the Measurement Model 170

3.19.1.1 Validity 171

3.19.1.2 Reliability 173

3.19.2 Assessment of the Structural Model 174

3.19.2.1 Collinearity Assessment 175

3.19.2.2 Structural Model Path Coefficients 176

3.19.2.3 Coefficient of Determination 177

3.19.2.4 Effect Size 178

3.19.2.5 Predictive Relevance 178

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

3.20 Summary of Data Analysis Test 179

3.21 Ethical Consideration 181

3.22 Summary of the Chapter 181

CHAPTER 4 RESULTS

4.1 Introduction 183

4.2 Response Rate 184

4.3 Data Screening and Preliminary Analysis 185

4.3.1 Missing Value Analysis 185

4.3.2 Assessment of Outliers 187

4.3.3 Normality Test 188

4.3.4 Multicollinearity Test 190

4.4 Non-Response Bias 191

4.5 Common Method Variance Test 194

4.6 Descriptive Statistics: Profiles of Respondents 195

4.7 Descriptive Analysis of the Variables 198

4.8 Measurement Model (Outer Model) Evaluation 199

4.8.1 Indicator Reliability 200

4.8.2 Internal Consistency and Convergent Validity 204

4.8.3 Discriminant Validity of Measurement Models 209

4.9 Assessment of the Structural Model 211

4.9.1 Hypothesis Testing and Path Coefficients for Direct Hypotheses 213

4.9.2 Assessment of the Coefficient of Determination (R2) 218

4.9.3 Assessment of Predictive Relevance of the Model (Q2) 219

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

4.9.4 Assessment of the Effect Size (f2) 220

4.9.5 Testing the Mediating Effects 222

4.10 Summary of the Hypotheses Results 227

4.11 Summary of the Chapter 228

CHAPTER 5 DISCUSSION AND FINDINGS

5.1 Introduction 229

5.2 Recapitulation of Findings 230

5.3 Discussion of Findings 234

5.3.1 Relationship Between Technological Factor and SMEs Performance in UAE 235

5.3.2 Relationship Between Organizational Factor and SMEs Performance in UAE 236

5.3.3 Relationship between environmental factor and SMEs performance in UAE 237

5.3.4 Relationship Between ABC Implementation Critical Success Factors and SMEs Performance in UAE 239

5.3.5 Relationship Between Technological Factor and ABC Implementation Critical Success Factors 240

5.3.6 Relationship Between Organization Factor and ABC Implementation Critical Success Factors 241

5.3.7 Relationship Between Environmental Factor and ABC Implementation Critical Success Factors 242

5.3.8 Mediating Role of ABC Implementation Critical Success Factors 243

5.3.8.1 Mediating Role of ABC Implementation Critical Success Factors on Technological Factor and SMEs Performance in UAE 243

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

		5.3.8.2 Mediating Role of ABC Implementation Critical Success Factors on Organizational Factor and SMEs Performance in UAE	245
		5.3.8.3 Mediating Role of ABC Implementation Critical Success Factors on Environmental Factor and SMEs Performance in UAE	246
	5.4	Conclusion of Findings	247
	5.5	Contributions and Implications of the Study	248
		5.5.1 Theoretical Contributions	249
		5.5.2 Practical Contributions	252
		5.5.3 Methodological Contribution	256
		5.5.4 Limitations of the Study	258
		5.5.5 Recommendations for Future Research	259
REFERENCES			262
APPENDIX			311

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi
05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

LIST OF TABLES

Table No.		Page
2.1	Definition of SME in Dubai	32
2.2	Rate of Business Closure	40
3.1	Comparison of the Three Dominant Paradigms	124
3.2	Difference between the Deductive and Inductive Approach	131
3.3	Sample Size Determination	138
3.4	Proportion of Sample	142
3.5	Measurement for SMEs Performance	149
3.6	Measurement for Technological factor	153
3.7	Measurement for Organizational factor	154
3.8	Measurement for Environmental factor	155
3.9	Measurement for ABC implementation critical success factors	156
3.10	Pilot Internal Consistency and Convergent Validity (N=30)	159
4.1	Response Rate Analysis	185
4.2	Total and Percentage of Missing Values	187
4.3	Multivariate Outliers	188
4.4	Numerical Method: Skewness and Kurtosis	189
4.5	Multicollinearity Test Based on VIF and Tolerance Values	191
4.6	Results of Independent-Samples T-test for Non-Response Bias	193
4.7	Descriptive Analysis of Demographic Data	195

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

4.8	Descriptive Statistics of The Variaables	199
4.9	Outer Loadings	201
4.10	Internal Consistency and Convergent Validity	205
4.11	Discriminant Validity (HTMT Criterion)	210
4.12	Direct Relationship	216
4.13	Variance Explained in the Endogenous Latent Variable	218
4.14	Predictive Relevance of Exogenous Variables	220
4.15	Predictive Relevance of Exogenous Variable	221
4.16	Mediating Effect Result	224
4.17	Summary of the Hypotheses	227

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

LIST OF FIGURES

Figure No.		Page
1.1	Conceptual Framework	19
2.1	SMEs in UAE	33
2.2	Outlook of Business Performance of SMEs in UAE	38
3.1	Research Pyramid (Jonker & Pennink, 2010).	119
4.1	Measurement Model	200
4.2	Structural Model (Inner and Outer Model)	212
4.3	Structural Model (Inner Model)	213

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi
05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

LIST OF ABBREVIATION

ABC	Activity-Based Costing System
AED	United Arab Emirates Dirham
AVE	Average Varience Extracted
CR	Composite Reliability
DOI	Diffusion of Innovation
EF	Environmental Factor
MAC	Management Accounting and Controls
MAI	Management Accounting Innovations
OF	Organizational Factor
PERF	Performance
PLS	Partial Least Squares
RBV	Resource-Based View
RKB	Knowledge-Based View
SEM	Structural Equation Modeling
SMBs	Small and Medium-scale Businesses
SMEs	Small and Medium-scale Enterprises
TAM	Technology Acceptance Model
TF	Technological Factor
TOE	Technological, Organizational, Environmental
UAE	United Arab Emirates

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

UTAUT	Unified Theory of Acceptance and Use of Technology
VIF	Variance inflation Factor

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi
05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

LIST OF APPENDICES

A Questionnaire

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

CHAPTER 1

INTRODUCTION

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

1.1 Background to the Study

The performance of Small and Medium-scale Enterprises (SMEs) has attracted the attention of several studies recently because it is considered a tool for enhancing economy, a springboard for sustaining economic development, and a major provider of employment (Abdelrahman, Abdullah, & Abas, 2017; Bakhsh, Mahmood, & Chaudhry, 2019; Kongolo, 2010; Kuntchev et al., 2013). In each country, the government alone cannot bring about economic development and provide jobs for all. Therefore, businesses established by individuals and corporate entities aid governments in the provision of jobs to people and contribute to the economic growth and development of a country. Thus, the impact of Small and Medium-scale Enterprises (SMEs) cannot be globally underestimated (Wang, 2016) in complementing governmental efforts in

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

enhancing economic development especially when the performance of SMEs is appreciable.

SME is a household concept and has been defined differently by researchers because there is no universally agreed definition (AlSharji, Ahmad, & Bakar, 2018; Ramdani, Chevers, & Williams, 2013). Its definitions focus mainly on the economic, social, and cultural characteristics of each country and are often dependent on turnover, capital assets, size, labor skills, ownership, or a firm's legal status (Chege & Wang, 2020; Cheng, Kadir, & Bohari, 2014). The general principles of SME definition comprise staff numbers, sales volume, and the level of investment. For instance, the European Commission defines SMEs as firms having employees ranging from 10–49 and medium-sized businesses as those having 50–250 employees (Katua, 2014). In the global economy, the operations of SMEs occupy a central position in the economic landscape, particularly for countries that are developing (Quartey et al., 2017).

In the context of the UAE, the framework for defining SMEs is derived from Cabinet Resolution No. 22 of 2016 which applies several employees, gross assets, and annual sales turnover to classify small businesses into categories (AlSharji et al., 2018). Arising from this, small businesses in UAE refer to firms that have less than AED 2m as an annual turnover and a maximum of 50 full-time employees, whereas medium-sized firms refer to any firm that has an annual turnover ranging from AED 2 to 200m and 50-200 employees on a full-time basis (AlSharji et al., 2018). However, the two Emirates comprising Dubai and Abu Dhabi adopt their own definitions of SME. The definition of SME in the context of Abu Dhabi was issued by a decree on 30 June 2013 which defines micro and SMEs by employees number in each firm, where a firm with

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

less than 5 employees is considered as micro; between 5 and 19 employees are small; between 20 and 49 are medium; and more than 50 are large (OECD, 2016). The SME sector in the country has an estimated number of 350,000 enterprises.

Globally, over 95 percent of enterprises are SMEs and they form about 60 percent of the private sector global employment (Ayyagari, Demirgüç-Kunt, & Maksimovic, 2011; Chege & Wang, 2020; Kumar, 2017; Nair & Tan, 2018; Quartey et al., 2017). Specifically, Azudin and Mansor (2018) argue that SMEs constitute 99 percent of the global business population. In UAE, small businesses constitute about 95 percent of all private businesses, and the SME sector alone provides employment for about 86 percent of the active workforce in the country (Baby & Joseph, 2016). Based on estimations, Dubai accounts for about 45 percent of the entire SMEs in UAE, Abu Dhabi has about 32 percent of it, whereas Sharjah has about 16 percent. Thus, SMEs are an essential mechanism for driving economic growth and job creation (Wang, 2016).

SMEs may not have an appreciable impact on the economy of a country unless they are performing well. SME performance, therefore, refers to the consistent achievement of the objectives of a firm effectively and efficiently (Abdelrahman et al., 2017; Kuntchev et al., 2013). Performance measures the position of a firm in the marketplace and its ability to meet the needs and aspirations of its stakeholders (Lo et al., 2016). This indicates that performance is the extent to which the organization's operation achieves its intended objectives by satisfying the needs of the customers (Lo et al., 2016; Slack, Chambers, & Johnston, 2010). Besides, performance assists in assessing the effectiveness and efficiency of production and services that help an entity in its profit realization (Abdelrahman et al., 2017; Melnyk et al., 2014). In short, the

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

performance of management of an organization is evaluated through the realization and achievement of the goals and objectives of that organization (Alnajjar, 2017).

Based on the relevance of SMEs, different measures are taken by UAE to maximizing the advantages and opportunities attributable to SMEs. To encourage and support the growth and development of the SME sector in UAE, the federal government came up with a new Law called SME Law in 2014 and the law seeks to give support to fully owned SMEs by the nationals of UAE (OECD, 2016). Arising from this, the UAE creates a financing opportunity for SMEs through Emirates Development Bank (EDB). EDB was established with a capital base of AED 10 billion to promote the economic growth (OECD, 2016). The SME Law requires the EDB to ensure that not less than 10 percent of its financing annually is apportioned to SMEs (OECD, 2016). Similarly, different initiatives were deployed by Dubai as growth stimulus packages for SMEs in 2018, and these packages were implemented by different agencies (Government of Dubai, 2018). The essence of the packages is to attract SMEs to support faster growth. For example, Dubai Chamber downward revised the fees for doing business, the Department of Finance increased the SMEs procurement quota from 10 percent to 20 percent , Dubai Municipality reduced the fee collected from sales of hotel rooms from 10 percent to 7 percent , and Dubai Economy exempted firms from penalties for late renewal of licenses (Government of Dubai, 2018).

Despite all these measures put in place in UAE, the performance of SMEs is not up to the expectation as the SME sector is still weak (AlSharji et al., 2018; Baby & Joseph, 2016). Evidence from the literature has indicated that technology, organization, environment and adoption of Management Accounting Innovations (MAIs) such as

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Activity Based Costing (ABC) system can make or mar the performance of SMEs (Ahmad, Teng, & Zabri, 2017; AlSharji et al., 2018; Chege & Wang, 2020; Quartey et al., 2017; Wang, 2016). From the perspective of technology, it can be seen as one of the major components of providing the final users with essential information through different technologies, applications, and software (Stjepić, Sušac, & Vugec, 2019). Technology can be viewed from three perspectives comprising any technology that is either being applied by a firm or that is available and is identified to be possibly beneficial, but is not yet being applied by an organization (AlSharji et al., 2018). In the context of SMEs, relative advantage, IT infrastructure, complexity, security, and compatibility are regarded as the technological factors that can affect the performance of SMEs (AlSharji et al., 2018). Although digitalisation provides new opportunities for SMEs to attain a global market, a large number of SMEs have not yet embraced fully the advantages accrual from technological transition. As indicated in the literature, SMEs are lagging behind in embracing digital technologies, thus only about 2% of SMEs take advantage of technology innovation (Chege & Wang, 2020).

Furthermore, it has been argued in the literature that the nature of organization can influence the performance of SMEs. Based on the organizational context, absorptive capacity, owner's support, employees' training, and organizational resources are considered factors influencing the performance of SMEs (AlSharji et al., 2018). Moreover, the business environment in contemporary society is becoming competitive, whereas the business entity is becoming more dynamic and aggressive in recognizing strategies that will lead to profit return. The business environment can be described as the surroundings in which a business performs its operation, which is compounding, ever-changing, and competitive (Abdelrahman et al., 2017; Ishengoma & Kappel,

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

2011). The environmental factor is considered a catalyst for the performance of SMEs. Environmental factors are outside the control of SMEs (AlSharji et al., 2018) and they include government support and competitive pressure.

Also, it has been suggested that the application of MAIs, particularly the ABC system, will go a long way in preventing the failure of SMEs. They are the most essential practices in any organization which intends to stay and remain sustainable and competitive (Bakhsh et al., 2019). MAIs have been evolving because of continuous changes in a business environment and technology (Ahmad et al., 2017). Because of the shortcomings of a traditional costing system, ABC came up as part of MAIs designed to cater for the contemporary needs of an organization. According to Rozlan and Hashim (2018), the most essential factor for the failure of SMEs is their inability to practice adequate business management practices.

Arising from this fore-discussion, this study aims at examining the factors affecting the performance of SMEs in UAE. The research was carried out in Dubai and Abu Dhabi due to the presence of numerous SMEs in these locations. The study encompassed a diverse range of SME organisations operating in different industries within the context of Dubai and Abu Dhabi. The reason for the choice of SMEs sectors is because it is an engine of every nation's economic development and creates employment opportunities for more than 86 percent of the entire workforce in the country's private sector. It also accounts for more than 94 percent of all enterprises functioning in the country and also account for over 95 percent of all business establishments in Dubai, thereby providing employment for 42 percent of the employees and contributing about 40 percent to the GDP of Dubai alone.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Three factors comprising technology, organization, and environment were examined. The study made use of the adoption of MAIs focusing specifically on ABC critical success factors to mediate the relationships between the three independent variables (technology, organization, and environment) and the performance of SMEs in UAE. Also, the study employed the Technology-Organization-Environment (TOE) and the Resource-Based View theories in providing the theoretical basis for the study.

A research gap related to the influence of MAIs on the performance of SMEs exists. Many studies on SMEs particularly in the UAE context (Ahmad, Ahmad, & Bakar, 2018; Al-Ansari, Altalib, & Sardoh, 2013; Alnajjar, 2017; Behery, Jabeen, & Parakandi, 2014; Gupta et al., 2018; Nakos, Dimitratos, & Elbanna, 2019; Nuseir, 2018) have focused on other areas, such as social media adoption, digital media innovation, entrepreneurial success factors and alliances in the international market.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

This study aims to fill the gap in the literature by examining factors (technological, organizational, and environmental) influencing the performance of SMEs performance in Dubai and Abu Dhabi. Specifically, it examines the ABC implementation critical success factors as the mediator of the relationships between the independent variables and the dependent variable. Based on the literature review conducted in the field, it was discovered that very few studies have holistically examined SMEs businesses in Dubai and Abu Dhabi in the past. The current study involved technology because scientific literature and business practices indicate that the adoption of technological innovations enhances the performance of enterprises (Stjepić et al., 2019). As part of the technological factors, the study focuses on IT infrastructure, relative advantages, compatibility of the technology, security, and complexity of the technology. Researchers contend that companies' decisions to adopt

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

specific innovations are positively and significantly influenced by the relative advantage of technology (AlSharji et al., 2018). An important factor in determining the use of innovation is compatibility between technological innovation and an organization's culture and value system, as well as its operational activity, and other research have shown that this is also true for SMEs. Thus, the application of technology adoption in the context of SMEs tends to boost performance of SMEs.

Furthermore, organizational factors such as absorption capacity, owners' support, organizational resources, and employment and training have been suggested to be essential for the actualization of performance of organizations in which SMEs are not exemption (AlSharji et al., 2018). Thus, the organizational ability to provide necessary quantitative and qualitative support will go a long way in enhancing the performance of SMEs. Moreover, literature has indicated that the environment has an important impact on the success of business and is a great determinant of business performance. The environment refers to all those factors outside the control of an organization (AlSharji et al., 2018), and it comprises government support and competitive pressure. One specific but essential factor is competitive intensity, or the threat of losing a competitive advantage (Zhu, Kraemer, & Xu, 2003). Competitive pressure refers to the extent to which rivalry occurs between organizations in the same industry (AlSharji et al., 2018).

Also, MAIs is considered essential for the attainment of organizational performance as the literature suggests that a direct relationship exists between MAIs and the performance of organizations (Bakhsh et al., 2019). Similarly, literature has shown that MAIs particularly the ABC implementation critical success factors is

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

influenced by technology, organizational and environmental factors. Concerning the relationship between the ABC and performance, scholars argue that after the introduction of MAIs by SMEs, business performance improves dramatically (Bakhsh et al., 2019). The ABC is one of the MAIs which is one of the techniques that enables the construction of a more accurate picture of how actions carried out in the manufacturing of goods or services (Ahmad et al., 2017).

As a result, this implies a change from a purely financial approach to a new system perspective made up of financial and non-financial information and functions as a competitive mechanism to help an organization maintain its position in the competitive market (Ahmad et al., 2017). However, studies on ABC implementation critical success factors within the SMEs sector are very few. Besides, very limited studies have examined the role of ABC implementation critical success factors between technology, organizational, and environmental factors and SMEs despite its importance, particularly in this setting. Therefore, this study aims to examine the impact of technological, organizational, and environmental factors on SMEs performance, whereas ABC implementation critical success factors serves as the mediating variable between the independent and dependent variables.

1.2 Statement of the Problem

SMEs act as pillars and foundations for the growing economy (Maziriri & Chivandi, 2020; Md Isa et al., 2020; Nakku et al., 2020). However, weak networking and connectivity present a difficulty for UAE in monitoring SME performance. The

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

businesses are not interconnected and strongly linked, which could offer support to emerging and new SMEs, hence, impeding the growth of SMEs as a whole. The lack of management skills exhibited by business owners is another factor that hinders the expansion of SMEs. A diverse skill set is needed to manage the operations and the workforce as businesses expand in size. Many managers are experts in one area, but they lack the necessary talents, such as skills of employees or owners are important in the development of small business (Gupta & Mirchandani, 2018; Jawabri, 2020; Nuseir & Aljumah, 2022), however, entrepreneurs typically lack such managerial skills to deal with a variety of difficulties among UAE SMEs. They struggle to develop novel plans of action to expand the company and improve organizational effectiveness.

To address the problem of SME's performance in UAE, the current study considered different types of factors which may have significant role to promote performance. The current study considered technological factor which is one of the most critical factor of success in the current era of technological revolution (Bi, Huang, & Wang, 2016; Yang et al., 2023). Although the number of previous studies considered technological factor in various types of businesses (Azarloo et al., 2017; Črešnar et al., 2023; Shahadat et al., 2023; Zhang & Fu, 2022), however in the UAE SME's industry, the discussion on technology factor is very rare. Therefore, the current study considered technological factors to promote SME performance in UAE and filled the important literature gap. Additionally, this study considered organizational factors which is also most critical in the performance of any business activity. Similar with the technological factor, organizational factor is also one of the important factor (Sekar, Viswanathan, & Sambasivan, 2018; Shahadat et al., 2023; Taherian, Feiz, & Heydarkhani, 2023; Zhai et al., 2018), which is discussed throughout different dimensions in various studies,

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

however the discussion on organizational factor by considering the SMEs of UAE is quite rare in the literature which motivated the current study to consider this factor to address the performance issues of SME's in UAE. In addition to this, environment is also another important factor (Abbas et al., 2019; Shahadat et al., 2023) which may influence SMEs performance and this factor is also rarely addressed in the context of SME's working in the environment of UAE. Hence, to address the critical problem in SME's performance of UAE, the current study considered technological, organizational and environmental factors to fill the literature gap which has unique contribution to extend the body of knowledge.

This study addressed the problem of SME's by considering the most important literature gap through the incorporation of ABC implementation critical success factors in the framework of the study. ABC implementation critical success factors is one of the most significant elements to promote performance by resolving several issues (Mahmood Albalaki, Abdullah, & Kamardin, 2019; Masadeh, 2023; Mazbayeva, Barysheva, & Saparbayeva, 2022). SMEs in Abu Dhabi and the UAE must prioritise ABC with an emphasis on critical success factors. This method allows for accurate allocation of costs, which in turn promotes the optimisation and efficiency of resources. When it comes to local and worldwide markets, SMEs can gain an advantage with ABC's improved decision-making capabilities. Cost reporting is brought into line with financial standards, ensuring regulatory compliance. Since ABC finds high-margin products and helps with strategic pricing, improved profitability is a direct result. To further bolster their position, SMEs have visibility into resource consumption and are aligned with strategic objectives. This allows for effective cost control and risk management. Further, ABC permits customer profitability analysis, which helps SMEs

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

target the most profitable market groups with their products and services. However, the ABC implementation critical success factors is quite rare in the previous studies particularly in the SME's working in Dubai and Abu Dhabi. Although it is observed that literature considered the ABC implementation critical success factors in various business activities along with different business industries, however the mediating role of ABC implementation critical success factors is not addressed by the previous studies. Particularly, the mediating role of ABC implementation critical success factors between technological factor and SME performance of UAE was not addressed. Similarly, the mediating role of ABC implementation critical success factors between organizational factor and SME performance in UAE was also not addressed in the literature. Likewise, none of the study addressed the mediating role of ABC implementation critical success factors between environmental factor and SME's performance in UAE. Therefore, the current study filled the important literature gap by considering the indirect role of ABC implementation critical success factors between technological factor, organizational factor, environmental factor, and SME performance in the context of Dubai and Abu Dhabi.

The current study addressed the theoretical gap in relation to the Resource-Based View (RBV). The capability of firms to create or acquire these resources affects their performance (Ramon-Jeronimo, Florez-Lopez, & Araujo-Pinzon, 2019). By considering the recommendations of RBV, the current study addressed the SMEs performance issue by highlighting the intangible resources. Intangible assets considered by the current study include organizational factors, technological factors, and environmental factors. These three types of factors have a significant role in contributing to the performance of SMEs in Dubai and Abu Dhabi. However, RBV has

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

not considered the significant role related to the ABC implementation critical success factors. Although several previous studies considered RBV in the context of various business activities and highlighted the important role of resources in performance (Gupta & Mirchandani, 2018; Ramon-Jeronimo et al., 2019; Rivard, Raymond, & Verreault, 2006; Safari & Saleh, 2020), however literature have not addressed the role of ABC implementation critical success factors. While resources play a substantial role in performance, their impact on performance is not solely direct; rather, resources also exert an indirect influence through various other factors. In the context of this study, to get maximum benefit from technological factors, organizational factor, and environmental factor the role of ABC implementation critical success factors is most critical which should also be included in the RBV.

Additionally, the current study also addressed the methodological gap. Prior research has also examined the impact of TOE on business performance. The connection between these parameters and the performance of business operations has been explored using conventional statistical tools and approaches. But this study addressed this relationship by considering the comparatively latest statistical technique which is based on Partial Least Square-Structural Equation Modeling (PLS-SEM). Although this technique is employed by the several previous studies carried out on SMEs by considering different variables (Amoah et al., 2021; Setyoko & Kurniasih, 2022; Srisusilawati et al., 2021; Wei-loon & Wulandari, 2023), however this technique was not employed in the literature by considering the indirect role of the ABC implementation critical success factors between technological, organizational and environmental factors and business performance of SME is working in Dubai and Abu Dhabi.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

1.3 Research Objectives

The main objective of this study is to examine the factors influencing the performance of SMEs in UAE and the following specific objectives will help achieve the general objectives:

1. To examine the relationship between technological factor and SMEs performance in UAE.
2. To examine the relationship between organizational factor and SMEs performance in UAE.
3. To examine the relationship between environmental factor and SMEs performance in UAE.
4. To examine the relationship between ABC implementation critical success factors and SMEs performance in UAE.
5. To examine the relationship between technological factor and ABC implementation critical success factors.
6. To examine the relationship between organizational factor and ABC implementation critical success factors.
7. To examine the relationship between environmental factor and ABC implementation critical success factors.
8. To examine whether ABC implementation critical success factors mediates the relationship between technological factor and SMEs performance in UAE.
9. To examine whether ABC implementation critical success factors mediates the relationship between organizational factor and SMEs performance in UAE.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

10. To examine whether ABC implementation critical success factors mediates the relationship between environmental factor and SMEs performance in UAE.

1.4 Research Questions

This study attempts to provide answers to the following research questions:

1. Is there a relationship between technological factor and SMEs performance in UAE?
2. Is there a relationship between organizational factor and SMEs performance in UAE?
3. Is there a relationship between environment factor and SMEs performance in UAE?
4. Is there a relationship between the ABC implementation critical success factors and SMEs performance in UAE?
5. Is there a relationship between technological factor and the ABC implementation critical success factors by SMEs in UAE?
6. Is there a relationship between the organizational factor and the ABC implementation critical success factors by SMEs in UAE?
7. Is there a relationship between environment factor and the ABC implementation critical success factors by SMEs in UAE?
8. Does the ABC implementation critical success factors mediate the relationships between technological factor and SMEs performance in UAE?

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

9. Does the ABC implementation critical success factors mediate the relationships between organizational factor and SMEs performance in UAE?
10. Does the ABC implementation critical success factors mediate the relationships between environmental factor and SMEs performance in UAE?

1.5 Research Hypotheses

Hypotheses of the study are as follows;

H_1: There is a positive relationship between technological factor and SMEs performance.

H_2: There is a positive relationship between organizational factor and SMEs performance.

H_3: There is a positive relationship between environmental factor and SMEs performance.

H_4: There is a positive relationship between the ABC implementation critical success factors and SMEs performance.

H_5: There is a positive relationship between technological factor and the ABC implementation critical success factors.

H_6: There is a positive relationship between organizational factor and the ABC implementation critical success factors.

H_7: There is a positive relationship between environmental factor and the ABC implementation critical success factors.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

H_8: ABC implementation critical success factors mediates the relationship between technological factor and SME performance.

H_9: ABC implementation critical success factors mediates the relationship between organizational factor and SME performance.

H_{10}: ABC implementation critical success factors mediates the relationship between environmental factor and SME performance.

1.6 Theoretical Framework

This study is underpinned by Technological-Organizational-Environmental (TEO) Framework and the Resource-Based View (RBV) theory. The study used TOE framework based on the fact that the technological context, the organizational context, and the environmental context of the business organization are regarded as elements that influence business performance. The technological context comprises all technologies that are essential for an organization. This includes both existing technologies that are already in use in an organization and those that are available in the marketplace but are not currently in use (Baker, 2012). Also, technology is considered an instrument for organizational competitive advantage in the knowledge of economy. Similarly, the organizational context is all about the features of the organization, such as organizational readiness, top management support, and organizational structure which may affect the organizational performance. As for the environmental context, it entails those factors outside the organization in which the organization operates, such as the industry, competitors, and regulation or legal policies by the government which may also influence organizations in the adoption of

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

innovation in enhancing their performance (AlSharji et al., 2018). This framework has been used by several prior studies in relation to performance with the claim that it has a robust theoretical foundation and solid empirical evidence (Palacios-Marqués, Soto-Acosta, & Merigó, 2015; Soto-Acosta, Popa, & Palacios-Marqués, 2017).

As for the RBV theory, it postulates that firms would achieve competitive advantage through organizational distinct and inimitable approach to acquisition, development and effective deployment of physical, human, and organizational resources, such as technological innovation and system adoption (Acar & Polin, 2015; Barney, 1991). In this study, ABC implementation critical success factors is seen as an internal firm resource, strategic and sustainable competitive advantage, and a driver of organizational performance. In addition, internal organizational resources and technological competence are a depiction of knowledge, skills, creativity, and behaviors in which an organization can help build up its competitive advantage.

In this study, technology factor, organization factor and environmental factor are essential to the SMEs performance. These variables will help an organization in gaining knowledge, building skills, making a wise decision, and implementing a suitable system that will lead to better SMEs performance.

1.7 Conceptual Framework

In this study, three independent variables, one mediating variable, and one dependent variable are considered. The independent factors are technology factor, organization

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

factor and environmental factor (TOE). The dependent variable is SMEs performance, while the mediating variable is ABC implementation critical success factors. The conceptual framework of the study is shown in Figure 1.1.

Figure 1.1

Conceptual Framework

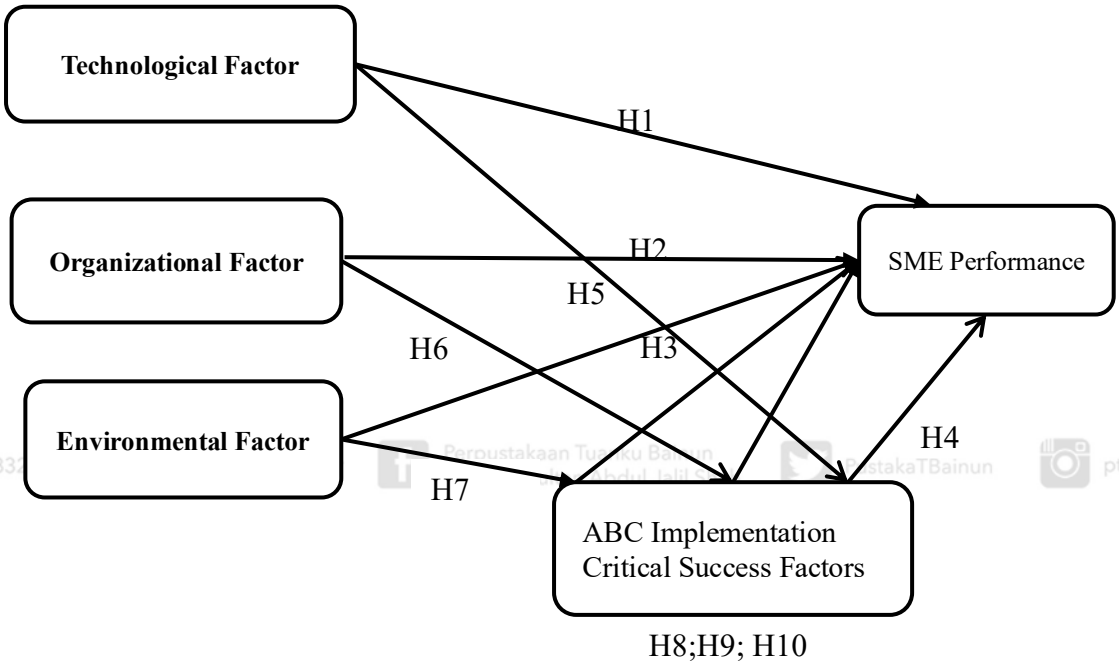


Figure 1.1 is premised on the assumption of TOE and RBV frameworks which postulate that the adoption of organizational technological adoption, effectiveness, and competitiveness is based on internal and external factors. Some elements of these factors then further served as organizational resources which help gain a competitive advantage over other competitors.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

1.8 Significance of the Study

This study adds to the body of knowledge by addressing some concerns that span theoretical, contextual, practical, and methodological issues in the context of the study and problem statement. First and foremost, the study adds to the body of knowledge by expanding the body of literature on the performance of SMEs in the UAE, especially in Dubai and Abu Dhabi. Also, by using ABC implementation critical success factors implementation critical success factors as a mediator, the study added something new to the body of current knowledge. This concept has been rarely applied in the SMEs research context and management research, thus bridging the existing research gap in this area of study. Second, the study is underpinned by the RBV theory. RBV has not taken into account the importance of the function played by the ABC implementation's crucial success criteria. Although a number of earlier studies took into account RBV in the context of different business activities and emphasized the crucial role that resources play in performance, but literature has not yet addressed the fundamental success elements for ABC implementation. Even though they make a considerable contribution to performance, resources also have an indirect impact on it in addition to their direct impact. The importance of ABC implementation crucial success elements cannot be overstated in order to maximize the value of the resources. Therefore, in the context of this study, the role of ABC implementation essential success factors is most crucial and should also be included in the RBV in order to receive the greatest value from technology factors, organizational factors, and environmental factors. Hence, this study provided recommendations to extend the RBV by adding implementation of critical success factors to improve performance as an important resource of the business along with the other intangible resources.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

The TOE framework has been scarcely adopted in studies of technological innovation and SMEs performance not because it is not applicable to the context, but because more attention is given to other prominent theories in management research. This, therefore, contributes to the already established theoretical framework in the area of technological innovation and SMEs performance. Thus, researchers and potential researchers will find the study significant. Last, this study will assist the SMEs owners to gain knowledge on the importance of ABC implementation critical success factors and its potential for business performance.

The TOE framework provides tangible advantages for regulators and SMEs owners in the UAE and Abu Dhabi. SMEs can simplify regulatory compliance processes and reduce the reporting load on owners by incorporating sophisticated technologies. Efficient organisational structures facilitate swift adjustment to legislative changes, hence assuring operational effectiveness in dynamic corporate situations. By actively addressing environmental considerations, SMEs are able to predict and tackle compliance challenges, promoting sustainability and conformity to regulations. The combination of these characteristics allows SMEs to utilise technology to ensure compliance, streamline organisational procedures, and keep aware of the changing business landscape. In essence, the TOE framework offers a methodical approach that enhances adherence to regulations and enhances overall business performance for both regulators and SME owners.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

1.9 Scope of the Study

The primary focus of this study as implied by the general objectives is to investigate the mediating role of ABC implementation critical success factors in the relationships between technological factors, organizational factors, environmental factors, and SMEs performance in Dubai and Abu Dhabi because these two cities have the highest concentration of SMEs in the UAE. The coverage of the information collected is limited to registered SMEs in Dubai and Abu Dhabi. The results of the findings through statistical analyses are limited to data collected from the field of study.

1.10 Operational Definition of Key Terms

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

The following important concepts or terms are defined as appropriate in this study and are used in this investigation.

1.10.1 Small and Medium-sized Enterprises (SMEs)

Small and medium-sized enterprises (SMEs) are defined in this study as businesses with an annual turnover of less than AED 2 million and a maximum of 50 full-time employees, while medium-sized businesses are defined as businesses with an annual turnover of AED 2 million to 200 million and between 50 and 200 full-time employees. This definition is consistent with the one outlined in the Cabinet Resolution No. 22 of 2016.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

1.10.2 Performance

For operational definitions, we will normally begin by first citing the definition from previous studies. For instance, Lo et al. (2016) define performance as an achievement of profit maximization objective and provision of employment opportunities for people. Lo et al. (2016) further classified performance into financial and non-financial performance. In this study, SMEs performance is conceptualized as an indicator that appraises how well the SMEs businesses achieved their objective which involves both financial and non-financial performance (Ho, 2008).

1.10.3 Technological Factor

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

According to Hansson (2015), technology refers to the adoption of information technology in the operation of SMEs to enhance their effectiveness, efficiency, and performance at large. Similarly, Rajaraman (2018) conceptualizes technology as the resources employed to acquire, save, organize, process, and distribute processed data that can be used in a specified application. In this study, the technological factor is described through complexity, compatibility and relative advantage which consider the promotion of business efficiency, enhances quick service to customers, access to the market information, better connectivity, user friendly applications and promotion of business performance. This definition is consistent with the definition of Chege et al. (2020) which considered technology through complexity, compatibility and relative advantage.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

1.10.4 Organizational Factor

An organizational structure is a system that specifies how certain actions are directed to meet the goals of an organization, according to Lo et al. (2016). Rules, roles, and obligations may be a part of these activities. In this study, the organizational factor is described through management support, customer focus and employee orientation which include the use of new technologies, new ideas for process and products, promotion of innovative ideas by the employees, new solution of problems, tolerance on mistakes, promotion of good communication with customers and compensation to the employees based on their performance. This definition is consistent with Lo et al. (2016) which examined organizational factor from the context of management support, customer focus and employee orientation.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

1.10.5 Environment Factor

According to Chege, Wang, and Suntu (2020), environment refers to the factors that are beyond the control of an organization and it comprises forces from the government and competitors. In this study, the environmental factor is described as government regulations, availability of infrastructure, innovative environment and competitive advantage to promote business activities. This definition is consistent with definition used by Chege et al. (2020).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

1.10.6 ABC Implementation Critical Success Factors

According to Ahmad et al. (2017), ABC implementation critical success factors can be measured through data usage, support of top management and in the perceptive of employees. In this study, it is described as the competitive product cost, competitive operating cost to reduce the price, information of cost, resources provided by the owner, use of competitive strategies, understanding of ABC mechanism, training activities, ABC implementation critical success factors acceptance and suitability for the employees to promote performance.

1.11 Organization of Thesis Chapters

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

There will be five chapters in this course. The issue statement, research questions, goals, significance, scope, underlying theories, and structure of the thesis are highlighted in chapter one. The second chapter involves a literature review that highlights conceptual and theoretical frameworks and gaps in the literature. Specifically, it assessed previous studies in the aspect of SMEs, whereby a systematic review on each variable of this study was conducted. Additionally, it discusses how each of the independent and dependent variables in this study relate to one another while also evaluating how ABC adoption has a mediating effect on all of the variables.

Third chapter covers methodology which discusses the steps and procedures followed by the researcher before, during, and after the collection of data. It includes the research paradigm, the study design, the population, the sample, and the sampling

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

methodologies, as well as the methods for gathering data and analyzing that data. The chapter also covers how each variable's measurement is done.

The results and discussion are presented in the fourth chapter. In accordance with the stated goals and developed hypotheses, the chapter analyzes, interprets, and discusses the data. The final chapter is the conclusions and recommendations. It summarizes the entire study and provides the implications of the study as well as recommendations for future studies.

1.12 Summary of Chapter

The chapter provides an overview of the research topic and discusses how SMEs have been important to both the United Arab Emirates and the rest of the world. The chapter is divided into ten (10) sub-sections that include an introduction, a research statement of the problem, research objectives, research questions, and research hypotheses, as well as sections on the theoretical and conceptual frameworks, the significance of the study, the scope of the study, operational definitions of key terms, the way the study was organized, and a summary of the chapter. The subsequent chapter of this study will focus on the literature review, where relevant past studies are analyzed and criticized along with the hypotheses development and the theories that underpinned this study.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

CHAPTER 2

LITERATURE REVIEW

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

2.1 Introduction

This chapter covers earlier research on the effectiveness of Small and Medium-Sized Businesses (SMEs) and the elements that influence it. The chapter covers each variable and provides a critical analysis of the researchers' claims on each construct. There are 8 sections in this chapter. In addition to this introduction, the second section talks about SMEs in the United Arab Emirate (UAE) and how the nation perceives them. The dependent variable of the study, SME performance, is the subject of the third section's analysis. The connections between the independent and dependent variables are examined in the fourth part. In Section 5, the perspective of earlier research on the relationship between the independent variables and the mediating variable is examined. The Activity Based Costing (ABC) system, the study's mediator, and the relationships

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

between the independent and dependent variables are covered in section six. A summary of the chapter concludes the last part.

2.2 Contextual Background

Ras Al Khaimah, Umm Al Qaiwain, Abu Dhabi, Dubai, Sharjah, and Ajman are the seven tiny emirates that make up the United Arab Emirates (UAE), a confederation. The UAE has a long history of oil and gas exports and is a member of the Gulf Cooperation Council (GCC). Each of the emirates today has a very stable political and economic framework, and the country strives to dominate the financial and services industries in the Middle East. Portugal's territory is a little bit bigger than the United Arab Emirates'. Its borders with Saudi Arabia and Oman are in the west, south, east, and northeast, respectively. There is still disagreement on the precise placement of the country's borders. Uncertainty surrounds the legal standing of a covert 1974 agreement between Saudi Arabia and the United Arab Emirates that was supposed to put an end to their three border disputes. The United Arab Emirates claims that as part of the 1974 agreement, Saudi Arabia ceded to it a portion of coastline that borders Qatar to the northwest. The Emirates' claim to an oasis close to the city of Al-Ayn, however, has periodically been disputed by Saudi Arabia (as well as Oman). Moreover, it contests Saudi claims to the southern Shaybah oil field. The Emirates and Iran have been at odds over the three islands of Ab Ab, Bigger Tunb, and Smaller Tunb (also known as unb al-Kubr and unb al-ughr) since the early 1990s.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Citizens make up only roughly one-ninth of the population in the Emirates. The remaining population is primarily made up of foreign employees and their dependents, the majority of these groupings being made up of South Asians. Iranians and Arabs from countries other than the United Arab Emirates make up a large portion of the population. Southeast Asians, many of whom are Filipino, have been migrating in greater numbers to work in a variety of fields. There are minorities of Shiites in Dubai and Sharjah. About three-fifths of the population is Muslim, with roughly four-fifths of them being Sunnis. Hindus and Christians are also minorities in the nation, though their numbers are rising.

2.2.1 UAE's National Agenda for Entrepreneurship

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

By 2031, the UAE's National Strategy for Entrepreneurship seeks to transform the nation into an entrepreneurial one. The National Agenda includes 29 initiatives designed to improve the business climate and entrepreneurial mindset in the UAE, as well as a comprehensive package of incentives that will allow the nation to incubate ten unicorn start-ups, increase the number of start-ups to one million, and forge a strong relationship between the public and private sectors.

SMEs are divided into three sectors based on the economic activities they carry out, including the trade, the industrial, and the service sectors. The firms connected to each sector are then divided into the three categories of micro, small, and medium-sized businesses based on their size. The size of the business is then determined using its annual revenue and personnel count. Small businesses have fewer than 50 workers and

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

less than AED 50 million in annual revenues, whereas medium-sized enterprises have fewer than 200 employees and less than AED 250 million in annual revenues. Microbusinesses have fewer than 5 employees and less than AED 3 million in annual revenues.

According to Dubai (2020), industrial businesses classified as micro-manufacturing enterprises must have less than 9 employees or AED 9 million in annual revenue. Small industrial businesses are those with fewer than 100 employees or AED 100 million in annual revenue. Medium industrial firms are defined as those with fewer than 250 employees or AED 250 million in annual revenue. Small-service businesses have less than 50 employees and annual revenues of less than AED 20 million, whereas micro-service businesses have fewer than five employees and less than AED 2 million in annual revenue. Less than 200 employees and AED 200 million in annual revenue characterize medium-sized service companies.

2.2.2 Small and Medium-Sized Enterprises (SMEs) in United Arab Emirate (UAE)

In accordance with a new constitution, the previous seven Trucial states—Abu Dhabi, Ajman, Dubai, Fujairah Sharjah, Umm Al Quwain, and Ras Al Khaimah—merged to become the United Arab Emirates (UAE). The country lies in the Eastern part of the Arabian Peninsula. UAE's coastline stretches along the Gulf of Oman and the Arabian Gulf. Its capital is Abu Dhabi. It has a population of about 10 million and covers an area of about 84 thousand square kilometers (Organization of the Petroleum Exporting Countries, 2020). According to the OECD (2016), the UAE is one of the most

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

significant economic hubs in the Middle East, and it places a high value on the development of its Small and Medium-sized Companies (SMEs).

Small and Medium-Sized Enterprises (SMEs) are regarded as the catalyst for economic growth and development in every country (Chege & Wang, 2020; Quartey et al., 2017). United Arab Emirate (UAE) is not exempted from the benefits derivable from SMEs; therefore, the country is striving hard to sustain the enterprises and make them more viable. There is no generally accepted definition of SMEs globally. Hence, each country defines SMEs in its context. In UAE, the definition of SMEs emanates from Cabinet Resolution No. 22 of 2016 which makes use of three elements comprising several employees, annual sales turnover, and gross assets to classify businesses into micro, small, and medium categories (AlSharji et al., 2018). Based on this, UAE small businesses refer to enterprises that have an annual turnover of less than AED 2m and the highest number of 50 full-time employees, whereas medium-sized enterprises refer to any firm that has an annual turnover ranging from AED2 to 200m and 50-200 employees on a full-time basis (AlSharji et al., 2018).

However, the definition is slightly different in Dubai and Abu Dhabi because of the adoption of their own independent definitions of SME. The SME definition in Abu Dhabi was issued by a decree on 30 June 2013 which defines micro and SMEs by the number of employees in each firm. Consequently, a firm that has less than 5 employees is regarded micro; between 5 and 19 employees is small; between 20 and 49 is medium; and more than 50 is large (OECD, 2016). In the case of Dubai, the definition of SME is a function of the sector, size, number of employees, and turnover. Thus, an SME in Dubai refers to any enterprise which meets the standard thresholds of a number of

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

employee and the turnover, as applicable to any of the sectors, such as trading, manufacturing, or services it belongs to. Also, the classification of the size of the enterprise as either micro, small or medium, is dependent on the uniqueness of each sector threshold. The description of SMEs in Dubai is summarized in Table 2.1.

Table 2.1

Definition of SME in Dubai

	Trading		**Manufacturing**		**Service**	
	Employees	Turnover	Employees	Turnover	Employees	Turnover
Micro	< 9	<AED 9mn	< 20	<AED 10mn	< 20	<AED 10mn
Small	< 35	<AED 50mn	< 100	<AED 100mn	< 100	<AED 100mn
Medium	< 75	<AED 250mn	< 250	<AED 250mn	< 250	<AED 250mn

Source: SME Report (2019)

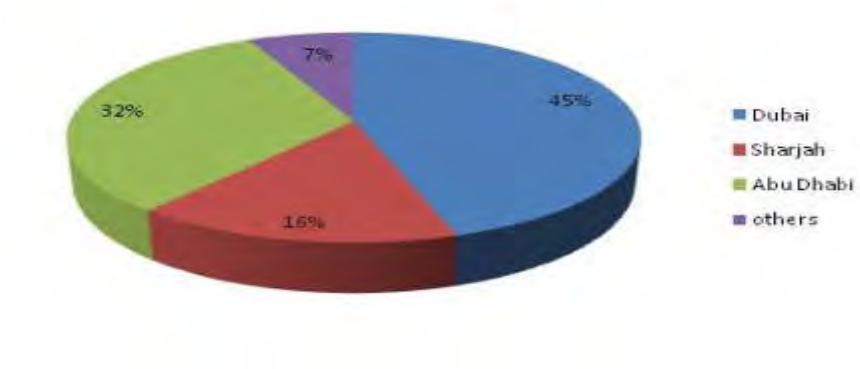
SMEs in Dubai account for 99.2% of the total population of enterprises in the state, employ about 51% of the labour force, and contribute to 46% of Dubai's GDP. In 2018, Dubai SME reported that its contribution to the economy of the Emirate increased from 40% in 2009 to 47% in 2016, whereas the contribution of its SMEs to job creation increased from 42% to 52% (NBF, 2019). On the account of OECD (2019) and as presented in Figure 2.1, Dubai constitutes 45% of the entire population of SMEs in UAE, and this is followed by Abu Dhabi which accounts for 32%, whereas Sharjah has 16%.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Figure 2.1

SMEs in UAE. Source: Extracted from OECD (2019)



According to the Ministry of Economy (2019), the SME sector in UAE has an estimated number of 350,000 enterprises, of which Dubai alone has 157,500 (45%) SMEs. Since Abu Dhabi has 32% of the SME population, the Emirate has about 112,000 (32%) SMEs.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

2.2.3 Characteristics and Roles of SMEs in the United Arab Emirate (UAE)

The fact that SMEs are often run by their owners as sole proprietorships or partnerships is a key characteristic of SMEs worldwide. To put it another way, SMEs are distinguished by a straightforward management structure brought about by the combination of ownership and management in a single or small number of people. Hence, rather than functioning as separate entities, SMEs frequently revolve significantly around the owner-managers. Decision-making is frequently more subjective, and employer-employee relationships are frequently quite informal. Due to the official financial institutions' opinion of the sector as dangerous, SMEs have very

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

limited access to long-term capital, and their access to short-term financing is frequently restricted and occasionally obtained at a penal rate of interest.

Lack of resources frequently leads to the rejection of cutting-edge technology and the return to labor-intensive manufacturing methods. Due to this and the extremely weak inter- and intra-sectoral linkages, the businesses are unable to profit from the economies of scale associated with large-scale production. Because local raw resources are used more frequently, SMEs are more prevalent and resilient. According to a previous study, SMEs play the following functions in economic development:

i. Industrial/technological development: They have a short gestation period and a great potential for a rapid return on investment. They so provide hopeful alternatives for nations seeking the quickest route to economic development.
ii. Job creation: It has been found that SMEs create more jobs globally per unit of investment capital and per unit of energy consumed than large-scale firms.
iii. Technical advancement: They offer chances for the growth of regional expertise and technical advancement. The "Aba made" phenomenon is a blatant example of such technology acquisition in Nigeria.
iv. They offer a training opportunity for the development of local entrepreneurs in a number of economic activities. They are regarded as the "university" where a sizable class of Nigerian businesspeople are typically trained. In order to create a strong industrial class, it is more crucial to support small business owners than to construct a few huge plants.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

v. Fostering Growth: The majority engage in primary and secondary economic activities that rely largely on locally obtained raw materials, machinery, and components. They thereby attain a high level of local value added by operators.

vi. Higher standard of living: Succeeding SMEs contribute to increased living standards for the populace and create foreign currency for the economy's further growth.

vii. They may easily be found in rural locations since they can make do with minimal industrial infrastructure. vii. Industrial dispersal or spread. As a result, they play a significant role in industrial dispersion and rural development, which helps to reduce the rural-urban drift.

viii. Servicing large-scale industries: Raw materials and products are given to large-scale companies, who then distribute their final items to customers.

ix. Export promotion: A few SMEs that are involved in manufacturing act as conduits for the promotion of exports and the replacement of imports.

x. Rural areas' structural transformation: When they are used in rural regions, they assist raise people's standards of life and develop rural infrastructure. The presence of SMEs in the neighborhood attracts social amenities like roads, electricity, pipe-borne water, telecommunications facilities, etc. to the area.

xi. They are flexible and quick to respond to changes in the working environment. They thus serve as good testing grounds for novel goods and developing production methods.

xii. Minimal Take-off Capital Needs: Take-off capital needs are modest. Small-scale manufacturing thereby increases the opportunities for low-income people to engage in industrial activities. They are useful tools for encouraging widespread industrial development participation.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

2.3 SME Performance in UAE

There will be discussion on the definition of performance as it pertains to SMEs and other subjects. The terms "firm success" and "firm failure" are widely used in the literature and refer to two strategic outcomes that performance may have (Eniola & Entebang, 2015). Findings of a prior study assert that a company's performance can be used as a barometer of its managerial quality, but that other elements, such as luck, can also be at play. Whether a company has met its goals will impact how that company performs. Firm performance is a crucial phenomenon in business management, according to the literature. The effectiveness of the three levels of management inside the organization influences its overall performance (Eniola & Entebang, 2015). The ability of a business to create actions and outcomes that are seen as acceptable can be referred to as performance. Performance seems to be understood, discussed, and quantified in a variety of ways, making cross-comparison difficult.

The importance of SMEs is evident in the majority of developed nations, where they play a vital role in the creation of jobs in local communities and the expansion of national economies (Bakhsh et al., 2019). To avoid excessive reliance on foreign direct investment, many countries have laid more emphasis and focused on SMEs as a new mechanism for improving the growth and development of their economy (Bakhsh et al., 2019). There is no single definition of SMEs because they are relative and changeable. Each nation often adopts definitions based on the requirements of public policy, the degree of economic growth, the anticipated contribution of SMEs to that nation's economic development, and the scheduled assistance intended to achieve the objective.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

According to the Ministry of Economy, SMEs sector in UAE employs more than 86% of the workers in the private sector, accounts for more than 94% of all businesses functioning in the nation. SMEs account for approximately 95% of all businesses in Dubai alone, employing 42% of the workforce and making up about 40% of Dubai's GDP. The UAE government wants to improve the performance and contribution of the SME sector. It is playing a significant part in putting strategies and programs in place to assist with finding sources of funding for SMEs.

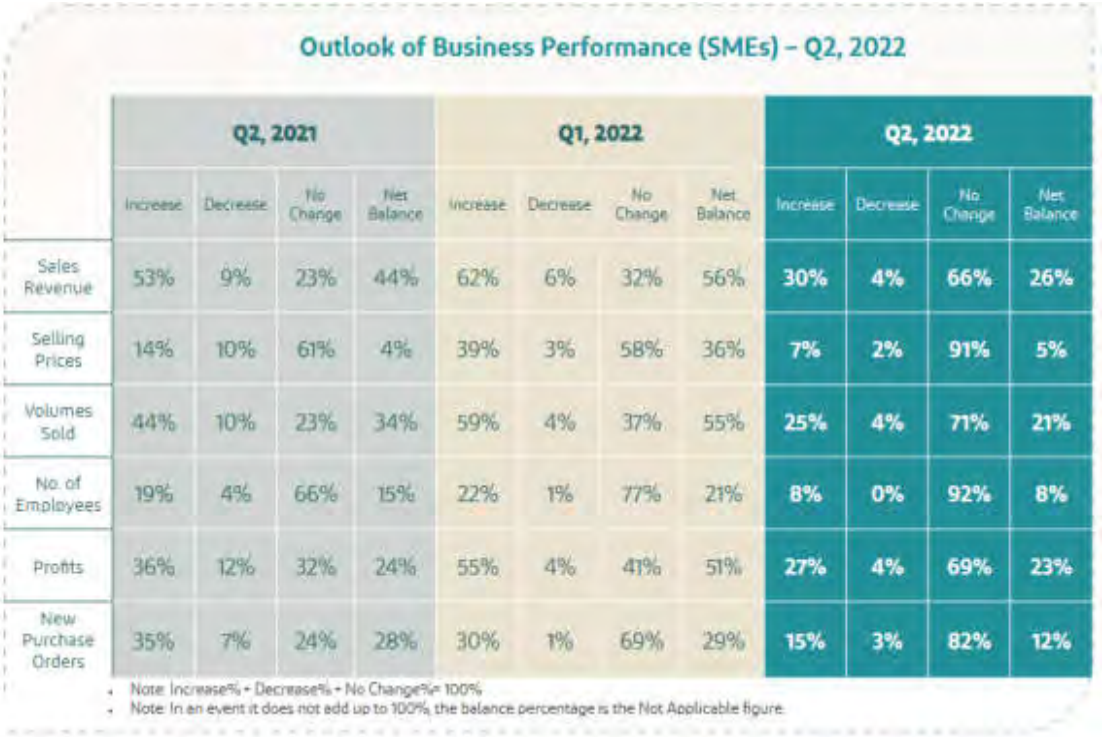
According to According to the results of a prior study, overall SMEs decreased to 113.1 points in Q2 2022 from 119.6 points in Q2 2021, with SME enterprises expecting a reduction in the majority of metrics in the following quarter. The net balance for sales volume decreased from 34% in Q2 2021 to 21% in Q2 2022. From a level of 24% in Q2, 2021, the net balance for profitability is essentially steady. The majority of respondents stated that profit levels would remain the same, but 27% anticipated an increase in their bottom lines due to an increase in demand. While 77% of SMEs believe Dubai's economic position will improve over the next six months, 4% predict a decline. Almost 80% of business owners anticipate an improvement in their company's financial status and profitability, with only 2% of SMEs anticipating a worsening balance sheet. Similar to the previous quarter, most SMEs (57%) have no plans to make any capital investments, and 75% anticipate that their level of operations would remain the same. The outlook of business performance of SMEs in UAE is reported in Figure 2.2.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Figure 2.2

Outlook of Business Performance of SMEs in UAE



Outlook of Business Performance (SMEs) – Q2, 2022

	Q2, 2021				Q1, 2022				Q2, 2022			
	Increase	Decrease	No Change	Net Balance	Increase	Decrease	No Change	Net Balance	Increase	Decrease	No Change	Net Balance
Sales Revenue	53%	9%	23%	44%	62%	6%	32%	56%	30%	4%	66%	26%
Selling Prices	14%	10%	61%	4%	39%	3%	58%	36%	7%	2%	91%	5%
Volumes Sold	44%	10%	23%	34%	59%	4%	37%	55%	25%	4%	71%	21%
No of Employees	19%	4%	66%	15%	22%	1%	77%	21%	8%	0%	92%	8%
Profits	36%	12%	32%	24%	55%	4%	41%	51%	27%	4%	69%	23%
New Purchase Orders	35%	7%	24%	28%	30%	1%	69%	29%	15%	3%	82%	12%

- Note: Increase% + Decrease% + No Change%= 100%
- Note: In an event it does not add up to 100%, the balance percentage is the Not Applicable figure.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Source: DET (2022)

SMEs have been discussed in the literature as a vital source of new product development and new technologies (Chege & Wang, 2020; Hilmersson, 2014). In the contemporary competitive business environment, the persistent problem confronting business stakeholders, governments, and other stakeholders is recognizing and supporting the factors that will encourage and motivate SMEs for the purpose of economic growth and development. Thus, the improvement of SMEs performance becomes a key to encouraging SMEs (Hilmersson, 2014). Almost 86% of UAE employment and 50% of its industrial output come from the SME sector. There does indeed seem to be consensus that the growth of SMEs in the UAE is a step toward creating a dynamic and diversified economy (Nuseir, 2018).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

The result of a report ranks UAE as 16th out among 190 economies in relation to the ease of doing business. Based on this, the assumption is that every business will be flourishing in the country. However, this does not translate to the effective performance of businesses, particularly the SMEs. Despite the efforts and commitment of UAE especially Dubai and Abu Dhabi to the promotion and sustainability of SMEs, the performance of SMEs still appears to be unimpressive as the evidence provided by OECD (2016) indicates that UAE has the highest number of business closure in the Middle East and North Africa (MENA) region. As indicated in Table 2.2, UAE records the highest rate of business closure among the sixteen regions considered.

Also, comprehensive data on economic activity that precisely tracks the most significant economic changes in the Emirates of Abu Dhabi and Dubai show a reduction in performance when comparing economic activity in 2018 to 2019 GDP in 2019 was AED 915,250 million at current prices as opposed to AED 932,441 million in 2018. Other 2019 figures show that the GDP per capital at current prices was AED 356.6000, the total fixed capital formation was AED 142,402 million, and the employee compensation was AED 250,749 million. GDP at constant prices, which is calculated by maintaining prices constant, shows the volume of goods and services generated in volume terms. GDP increased from AED 792,065 million in 2018 to AED 803,568 million in 2019 when measured at constant prices. In comparison to 2018, when it was AED 284.1 thousand, the GDP per capita at constant prices in 2019 was AED 313.1 thousand.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Table 2.2

Rate of Business Closure

Region	**Time (years)**
MENA region	3.5
OECD	1.7
UAE	**5.1**
Algeria	2.5
Bahrain	2.5
Egypt	4.2
Jordan	4.3
Kuwait	4.2
Lebanon	4
Morocco	1.8
Oman	4
Qatar	2.8
Saudi Arabia	1.5
Syria	4.1
Tunisia	1.3
Yemen	3

Source: OECD (2016)

Therefore, SMEs known as a major economic development component if properly placed and prioritized can boost the economic performance of the country as well as contribute positively to the country's GDP. This further highlights the importance of examining the factors affecting SMEs performance. In the Emirate of

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Abu Dhabi, where entrepreneurship is still in its infancy, strong entrepreneurial views may not always convert into equally strong entrepreneurial action. The Global Entrepreneurship Monitor (GEM) reports that entrepreneurship is highly valued in Emirati society, where risk aversion is low and people are sure they possess the necessary skill set to start their own business. Yet, the situation is less ideal when comparing intentions to actual behavior. The GEM determined that the UAE had a below-average rate of business ownership and a low business density.

Many Businesses in the UAE now lack the necessary abilities to market their goods or services effectively and efficiently or to attract enough clients to sustainably expand their firm. They also don't have enough money to hire outside help to sell their items (AlSharji et al., 2018). Despite these challenges facing the SMEs in UAE, the attention of the researchers has not been adequately diverted to the performance of SMEs in the UAE, particularly in the context of Dubai and Abu Dhabi; consequently, there appears to be a dearth of empirical studies in this area.

Also, there appears to be a literature gap on SMEs in the UAE context more particularly in the management field. Many studies on SMEs involving Chege and Wang (2020), Bakhsh et al. (2019), Torkkeli et al. (2019), Azudin and Mansor (2018), Cerchione and Esposito (2017), Abdelrahman et al. (2017), Ahmad et al. (2017), Hilmersson and Johanson (2016) and Wang (2016) have been conducted in foreign countries that may not best suit the features and characteristics of UAE setting. However, the few identified studies on SMEs in UAE including AlSharji et al. (2018), Gupta and Mirchandani (2018), Nuseir (2018), Alnajjar (2017), and Schilirò (2015) have not covered most of the SME's businesses in the areas, particularly in Dubai and

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Abu Dhabi, but have focused on other sectors of the economy, such as bank industry, hospitals, and hotels.

According to Eniola and Entebang (2015), a company's performance is widely utilized as a barometer of its health at a given point in time. Performance is consequently one of the main issues SMBs face. The ability to implement management changes, recognize market opportunities, adjust to the environment, and possess specific managerial factors, such as product innovations, creativity, proactivity, technological change, and networking, are necessary for strategically improving a company's performance. Performance can mean many various things, such as growth, success, survival, and rivalry. Performance is also the ability of the business to deliver pleasing outcomes and deeds (Eniola & Entebang, 2015).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

According to the Ministry of Economy, the SMEs sector accounts for more than 94% of all businesses functioning in the nation and employs more than 86% of all private sector workers. In Dubai alone, SMEs account for almost 95% of all businesses, employ 42% of the labor force, and contribute about 40% of Dubai's GDP. The UAE government intends to improve SME sector output and contribution. It is crucial for creating initiatives and programs that assist SMEs in locating finance sources.

At the national and international levels, SMEs is a unique sector of the economy and it is regarded as a cornerstone upon which sustainable economic development lies; therefore, their essential functions cannot be underestimated in developing and developed nations (Abdelrahman et al., 2017; Schilirò, 2015). The dynamic growth and development of SMEs are one of the main conditions for the healthy economic

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

development of a nation (Dobrovic et al., 2018). In emerging and contemporary economies, SMEs greatly and potentially constitute the most dynamic firms (Emine, 2012; Mahmood & Hanafi, 2013; Wang, 2016), and their impact on employment generation is significant and enormous (Bakhsh et al., 2019; Love & Roper, 2015).

The essentials of SMEs in driving the economy and the extent to which the sector will have impacts on the economy of a country depend on the degree of the sector's performance. Therefore, SMEs performance is important for the realization of the advantages accrual from the sector and should be a concern for the government and other relevant stakeholders. The concept of performance, from the business perspective, has been defined in different ways by scholars. Business performance refers to the effective and efficient attainment of business goals and objectives, and the extent to which the stakeholders' needs are met (Maziriri & Chinomona, 2016; Maziriri, 2017). According to Mustikaningsih et al. (2019) and Lo et al. (2015); Lo et al. (2016), the concept of organizational performance refers to the measures of the position of an organization in the marketplace and the ability and capability of the organization to meet the needs of its stakeholders. As viewed by Slack et al. (2010), organizational performance is the extent to which the operation of an organization fulfills its intended objectives and satisfies its customers' needs.

Organizational performance is now an essential issue for every profit and non-profit making organization (Masa'deh et al., 2018). However, different factors have been discussed as accountable for the performance of SMEs in different countries and continents. Some scholars look at the performance of SMEs from the perspective of the challenges militating against their advancement. They argue that the performance of

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

SMEs can be made or marred by the availability or non-availability of factors, such as finance, management support, skilled labour, corruption, equipment, location, and regulation, among others (Emine, 2012; Quartey et al., 2017; Semrau, Ambos, & Kraus, 2016; Torkkeli et al., 2019; Wang, 2016).

However, some others consider factors, such as technology, environment, and management accounting innovations, among others as the key determinants of the performance of SMEs (Abdelrahman et al., 2017; Alnajjar, 2017; Chege & Wang, 2020; Maziriri, 2017; Schilirò, 2015; Stjepić et al., 2019). In the context of UAE, literature has indicated that the performance of SMEs is constrained by a lack of adequate skills to promote SMEs' products or services effectively and efficiently or to get a sufficient number of customers for the purpose of growth and sustainability (AlSharji et al., 2018). The SMEs similarly lack adequate resources to make use of external support for the marketing of the products and services (AlSharji et al., 2018). Arising from the literature, this study, therefore, examined the key determinants of SMEs performance comprising technology utilization, organizational structure, environmental factor, and MAIs.

The issue of organizational performance measurement has been a subject of discussion in the literature (Dobrovic et al., 2018). According to Abdelrahman et al. (2017), many parameters have been employed to evaluate the performance of SMEs and other organisations in a bid to improving their competitive advantage. In a small organization like SMEs, performance can be measured from two perspectives comprising the financial (monetary) and non-financial (non-monetary) measures (Abdelrahman et al., 2017). In the view of other scholars (Carton & Hofer, 2006), the

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

performance of an organization can be measured using profitability (financial), operational (non-financial), market-based, growth and efficiency dimensions.

Financial performance of an organization is solely based on parameters that reflect the results of an organization directly (Bogićević, Domanović, & Krstić, 2016), and it is measured monetarily, quantitatively, and numerically. Financial statements of an organization form the basis for the application of financial performance measurement, and the value of financial performance is a function of many factors, such as accounting methods, business activities, and economic environment (Sheikh & Mattingly, 1981). Financial indicators evaluate the growth in the organizational profitability and its financial stability. Non-financial measures, otherwise known as operational measures, serve as leading pointers of future financial performance and also provide an insight into the impact of an organization on its various stakeholders. The measures give a deeper insight into the inner workings of an organization.

Previous studies have adopted a combination of financial and non-financial measures in evaluating the performance of SMEs in other countries. For example, Lo et al. (2016) examined the key factors responsible for the success of SME performance in Malaysia and employed financial and non-financial factors in measuring the performance of SMEs. The study used nine items comprising customer retention, customer satisfaction, commitment, job satisfaction, operational efficiency, relational efficiency, innovation, product newness, and product quality in measuring non-financial performance. The researchers posit that the retention of customers in terms of sales will lead to more sales and eventual performance of SMEs, thus it can be used to evaluate performance. They also argue that customers' satisfaction has a great tendency

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

of measuring the performance of an organization. Other indicators are also found to be material in the assessment of non-finance performance.

In their study, Lo et al. (2016) also employed five components comprising return on asset (ROA), return on investment (ROI), sales growth, market share, and profitability in measuring the financial performance of SMEs in Malaysia. The study found that all the fourteen items of financial and non-financial performance have strong loadings and fit to measure the performance of SMEs in the Malaysian context. Consequently, this study applied the financial and non-financial indicators in measuring the performance of SMEs in the context of UAE. The utilization of both measures is believed to provide a more holistic view of SMEs performance.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

2.4 Technological Factor among SMEs

The term "technological factors" encompasses three distinct concepts: the prevalence of computerised information (information and communication technology, or ICT), the usage of the internet and electronic mail for business purposes, and the variety of business software now in use (Ahmadi, Keshavarzi, & Foroutan, 2011; Chung, Nam, & Stefanone, 2012). Data storage and secure networking are made possible through the use of desktop and laptop computers, smartphones, mobile devices, the internet, and other business software. Internet Connectivity (IC) provides reliable Internet access in response to customer requests. Organisations and businesses (SMEs) can benefit from business data management (BDM) since it facilitates the smooth running of operations across departments, reduces the workload of staff, and speeds up service delivery

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

(Singh & Singh, 2022). Everything that happens here happens on some sort of digital network.

Technology plays an integral part in any business and is crucial to its success (Gozali et al., 2020; Nagahira et al., 2018; Watson, Obal, & Kannan, 2021). To keep up with the times, technological considerations are crucial. ICT adoption, Internet connectivity, and company data management are all examples of technological elements that were taken into account in this study. The technological factors and their utilisation procedures for SMEs have been the subject of several theoretical discussions. The technological acceptance model (TAM) and TAM2 draw inspiration from both the theory of reasoned action and the idea of innovation spread. TAM is a useful framework that may be built upon in various ways to meet specific business requirements. Diffusion of Innovation (Chiu, Chen, & Chen, 2017; Lou & Li, 2017), the Technology-Organization-Environment (TOE) framework, and the Theory of Planned Behaviour (TPB) are a few such examples.

Businesses can benefit greatly from embracing ICT (Haris et al., 2019; Lee et al., 2018; Soieb, Othman, & D'Silva, 2013), or information and communication technology. Information, difficulties, and potential answers to ongoing company concerns can be discovered, developed, and analysed with its help. The widespread use of information and communication technologies has facilitated the rapid exchange of information and ideas among people from all over the world. The widespread use of new forms of communication and information technology has become a major social force. The expansion of a nation's economy is mostly the work of its SMEs. SMEs use

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

ICT in two ways: as creators of the technology and as consumers of it, to increase productivity and to expand their customer base as quickly and efficiently as possible.

When it comes to communicating for competitive objectives within an organisation, technological elements are unparalleled (Alraja et al., 2022). Over time, businesses have perfected a system that allows them to quickly collect data, share insights, and address issues. This has resulted in a market flooded with business-friendly web apps and software. These web apps can be accessed from any internet-connected device. These technological developments have simplified the decision-making process for SMEs and made it possible to perform everyday operations with a single mouse click. E-commerce adoption in SMEs is mostly determined by technological considerations (Nuengphasuk & Samanchuen, 2019; Wei-loon & Wulandari, 2023). The importance of internet access is self-evident, and no business can embrace e-commerce without it. A company will not implement e-commerce if there is no access to the internet. It has been noted that SMEs may have difficulty managing their internet's secure availability. Still, obstacles to e-commerce adoption include a dearth of necessary infrastructure, unfavorable situations, and environmental concerns. The first steps in starting an online store are research and development. The lack of implementation is preventing SMEs from adopting e-commerce despite having acquired R&D activity through proper learning. Research and development are destined to concentrate on the regional level, to the exclusion of the national and worldwide rivals. The more information that can be collected, the fewer problems SMEs will have in the future. Information is key to solving small businesses' issues. Without information, it is impossible to find a remedy. SMEs need a reliable data management

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

system in order to fully embrace and benefit from e-commerce (Amornkitvikai, Tham, & Tangpoolcharoen, 2021).

Every sort of technology that is accessible through computers and is available in electronic formats is considered technology in the broadest sense. Recently, SMEs, business, management, and administrative functions have employed technology extensively (Sentanu & Budiartha, 2019). The use of technology is required for many managerial tasks, including organizing, directing, coordinating, leading, staffing, and controlling. Communication of information, knowledge, instructions, and directions is the primary role of technology in carrying out numerous SMEs tasks. To carry out their obligations and jobs, the people can converse and share ideas. Where you are right now and where you intend to be in the future must be bridged by the planning function (Qi & Che Azmi, 2021). It requires both internal and external research in many different domains. When all of the important factors are taken into consideration, people may effectively implement the function of planning. Another function is organization, which comprises determining the tasks that must be accomplished. It requires the effective coordination of a wide range of operations, tasks, and functions. For instance, the ability to organize and coordinate meetings, projects, the flow of information, and other activities is crucial. Activities and functions should be planned in accordance with each person's skills and talents.

Technology's contribution to boosting organisational effectiveness has been widely documented in studies (Agyabeng-Mensah, Ahenkorah, & Korsah, 2019). Automation of routine processes made possible by modern technology helps SMEs save time and resources while increasing productivity. Analysing and interpreting data

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

is made easier for SMEs with the help of cutting-edge software and data analytics solutions. Streamlining processes with the help of technology can save money by decreasing the need for human labour, energy use, and material waste.

Technology plays a crucial role in facilitating quick and effective customer service (Guo et al., 2020; Li et al., 2021; Setiawati et al., 2021). Rapid customer interaction is now possible for SMEs through chatbots, CRM systems, and real-time messaging services. Quick order processing and delivery are two ways in which the convenience of e-commerce and digital payment methods benefit consumers. SMBs can quickly address issues and improve service quality through technology that helps them collect and act on consumer feedback.

SMEs cannot make educated business choices without access to market data (Keh, Nguyen, & Ng, 2007). Market research databases, social media analytics, and online surveys are all tools made available to SMEs because of technological advancements. It can help in competition, analyse market trends, and adapt their strategy with the help of modern technologies. Efficiency gains are possible as a result of using modern technology (Moshi, 2013). Innovative products and services are essential for SMEs to maintain competitiveness and seize growth possibilities in the marketplace.

The availability of technology has a positive effect on corporate success (Rammer, Czarnitzki, & Spielkamp, 2009), as supported by empirical research. SMEs who put money into digital transformation projects see increases in sales, profits, and market share. Through the use of e-commerce platforms and online marketing, SMEs

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

can get access to a global client base, courtesy of technological advancements (Chuchuen & Chanvarasuth, 2011). Adoption of technology by SMEs is greatly aided by programmes that are simple to use. It is much simpler for SMEs to adopt and successfully implement technology when it is designed with the user in mind. SMEs gain from staff members who have received training and support to use digital tools effectively.

The concept of information technology (IT) is defined in different ways in the literature. According to Rajaraman (2018), IT refers to the technology employed to acquire, save, organize, process, and distribute processed data that can be used in specified applications. It is the technology applied in creating, maintaining, and making information accessible (Fox, 2013). The application of IT by an organization enhances the performance of such organizations. Technology is one of the components of Technology, Organization, and Environment (TOE) framework (Awa, Ojiabo, & Emecheta, 2015; Pan & Jang, 2008; Ramdani et al., 2013; Tsou & Hsu, 2015) which emphasizes technology as a key factor in the determination of success of an organization. Today, IT is universally and generally regarded as a key tool for the enhancement of competitiveness of a nation's economy, and it has a significant influence on the performance of an organization (Oliveira & Martins, 2011).

2.5 Organizational Factor among SMEs

Organizational elements are characteristics of a business that influence how it operates and performs financially (Ahmed et al., 2018). The fundamental framework and

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

procedures for combining the essential components needed for an organization's long-term goals and performance improvement are known as organizational factors (Wiegmann & von Thaden, 2003). In addition to or in place of other methods of SMEs performance control, organizational characteristics are known to boost the credibility of business management to investors. Moreover, organizational factors might negatively affect the performance of SMEs because they are crucial, particularly in regard to decision-making and addressing financial concerns. Also, a company achieving and maintaining earnings that beat those of its rivals is known as having a competitive advantage. A business can obtain a competitive edge over its rivals by understanding its market and customers. A company has a scenario where it can offer the same advantages as rivals but at a lesser cost (cost advantage), offers benefits that outshine rivals' products (differentiation advantage), and generates greater value for its clients (Porter, 2010).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Evidence suggests that SMEs owners that make an effort to stay up with technological and market developments have greater financial success. Small business owners that invest some of their time in researching and studying emerging technologies are in a better position to lead their company towards novel approaches (Nguyen, Newby, & Macaulay, 2015; Shahadat et al., 2023). Small and medium-sized businesses can better adapt to change, create innovative products, and keep their competitive advantage if they regularly monitor market trends.

In order to maintain competitiveness and adapt to changing market needs, SMEs must aggressively pursue new ideas (Albassami et al., 2019; Asada et al., 2020; Sulistyo & Ayuni, 2020). SMEs can encourage a culture of innovation by rewarding those inside

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

and outside the company for their input. Businesses, especially SMEs, that actively seek out and implement new ideas are better able to respond to shifting consumer tastes and market conditions.

Supportive advocacy for new ideas is crucial to the development of innovation. When the leaders of SMEs show enthusiasm for innovation and communicate its value to their employees (Walden et al., 2020), they are better able to inspire their teams and create a shared vision for the future. Employees are more likely to come up with novel ideas (Thatrak, 2021) and have them accepted when led by an owner who is enthusiastic about the company.

Possessing a mindset that allows for and even celebrates the possibility of error is crucial for SMEs. More creative approaches to resolving issues and a culture that encourages continuous improvement might result from creating an environment where employees feel safe taking chances and learning from their experiences. SMEs have a better chance of long-term success with adaptation and innovation (Sulistyo & Ayuni, 2020) if the company culture promotes learning from mistakes.

Maintaining cordial relationships with one's clientele is essential for SMEs. SMEs that value their customers' opinions (Ekasari et al., 2019) and suggestions are more likely to provide products and services that are tailored to their needs. This, in turn, boosts customer happiness. SMEs can benefit from strategic product and service development informed by market data gleaned via ongoing communication campaigns.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

According to studies, a reward system that is fair and based on employee performance can boost morale and productivity in the workplace (Jansen & Hlongwane, 2019; Mihardjo et al., 2020; Seng & Arumugam, 2017). Employees can be encouraged to put forth their best effort and think outside the box if they are recognised for their outstanding performance on the job, which is good for the company as a whole. Attracting and retaining top talent is critical for the expansion and competitiveness of SMEs, and competitive pay is one means of doing so.

The capacity to outperform rivals in the same sector or market due to qualities and resources is known as a competitive advantage (Aliyu & Mahmood, 2014). Wang (2014) asserts that a company can achieve a competitive edge by establishing or gaining a set of qualities that will allow it to surpass its rivals. Hence, a company can offer higher value to its clients and yet make money thanks to a competitive advantage. Abd Aziz and Samad (2016) discovered that innovation had a large positive influence on SMEs' competitive advantage, accounting for 73.5% of the competitive advantage. The study also discovered that the age of the organization moderates the relationship between innovation and competitive advantage. Najib (2013) also studied the internal elements that influence the competitiveness of Indonesia's small and medium-sized food processing companies. He investigated how market orientation and innovation could boost SMEs' competitiveness in the food processing sector. In the study, business performance was used as a stand-in for competition.

The managerial task of directing involves pointing people in the direction of delivering a satisfactory performance. This job mostly focuses on how well each person performs (Lee et al., 2014). The supervisor's role is to instruct the team to improve if

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

any flaws or restrictions are discovered. It entails controlling how people behave and carry out their responsibilities and functions. It's critical to successfully interact with the staff and inspire them in the right way if this function is to be carried out efficiently. Managing tasks and making sure they are completed on schedule are two aspects of coordination. Establishing connections between people in different parts of the organization is its purpose, and everyone in the organization is driven to fulfill its goals. Synchronizing and harmonizing the acts of an organization's members is referred to as this action. The actions of the many departments would occur regularly and there will be close connectivity when the coordination role is carried out properly.

Supervisors, managers, directors, and other senior members of the organizational hierarchy have the power and authority to lead, which is a crucial management function. Within the company, leaders are responsible for a wide range of tasks, such as ensuring that resources are allocated effectively, making critical choices, paying attention to employee complaints, and encouraging cooperation and teamwork among the members. The job of staffing is to make sure that the proper individuals, with the relevant knowledge, abilities, qualifications, and experience, are placed in the appropriate positions within the business. People should be hired based on their qualifications and job duties. More specifically, because they guarantee that tasks are completed successfully, human resources are regarded as one of the most crucial components of a corporation. The process of controlling involves making sure that divisional, departmental, sectional, and individual performances are appropriate and consistent with the goals and objectives of the company. The responsibility to control primarily denotes the need to make wise use of other resources, including cash, tools, machinery, and other things.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

2.6 Environmental Factor Among SMEs

Environmental context relates to inhibiting and facilitating factors in the organizational areas of operations (Awa et al., 2015). The environment of an organization comprises the whole physical and social factors that have an impact on the decision-making process of an organization. The surroundings within which an enterprise operates can improve the development of a business or limit its operation simply because of changes in business environment (Chege et al., 2020).

Understanding how employees perceive the environmental factor and how these perceptions affect people's attitudes and behaviors toward their jobs has long been a focus of organizational behavior studies. Early research revealed that the social climate or atmosphere established at work had substantial effects; employees' impressions of the work environment were said to have an impact on how satisfied and productive they were, which was then projected to have an impact on organizational productivity (Katz & Kahn, 1978). Several studies have shown that the notion of environmental factors is beneficial for capturing perceptions of the work surroundings. In addition to employees' impressions of the formal and informal policies, practices, and procedures in their business, the work environment has been described as an exponentially based definition of the work environment.

The business climate for SMEs is heavily influenced by government laws (Afsharghasemi et al., 2013; Graafland & Smid, 2017; Zhang & Fu, 2022). The effect of rules and regulations on small and medium-sized businesses has been the subject of a lot of research. Studies show that countries with less bureaucracy and greater business

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

friendliness have thriving SMEs. Growth of SMEs can be encouraged through streamlining registration procedures, cutting back on bureaucracy, and reducing compliance expenses. Loan guarantee programmes and other government-backed financial incentives can help SMEs gain easier access to cash, which is good for the businesses' growth and long-term viability (Zhang et al., 2023). The tariffs and other trade policies in place can have a major impact on the competitiveness of SMEs both at home and abroad. Beneficial trade agreements and lowered trade barriers can help SMEs. Productivity and competitiveness in SMEs are greatly aided by investments in infrastructure. Fast internet and other digital resources are becoming increasingly important for SMEs. SMEs can benefit from e-commerce and cutting-edge technology adoption if governments actively encourage the growth of digital infrastructure. Logistics expenses for SMEs can be reduced, supply chain efficiency can be increased, and SMEs' competitiveness can be boosted if governments invest in transportation, energy, and communication infrastructure.

Keeping ahead of the competition is a top priority for SMEs (Lestari et al., 2020; Mahmood & Hanafi, 2013; Rhee & Stephens, 2020). SMEs that have something truly special to offer their customers usually do better. The importance of innovation cannot be overstated (Albassami et al., 2019; Zhai et al., 2018; Zhang et al., 2023). Effective resource management and cost control tactics can help SMEs reduce operating costs and gain a competitive edge. SMEs can better meet the demands of their customers and face less competition if they narrow their attention to certain niches. In addition, SMEs frequently experience resource constraints; yet innovation can be a crucial driver of their performance (Diharto & Budiyanto, 2017; Hameed & Naveed, 2019; Lestari et al., 2020), ultimately leading to a competitive advantage. SMEs can gain a competitive

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

advantage by fostering a culture of innovation that promotes the creation of novel goods, processes, and services.

There has been a significant contrast between psychological climate and organizational climate (James & Alley, 2002). Psychological climate refers to an individual's impressions of their work environment, whereas organizational climate has been presented as an organizational or unit-level term. Organizational climate is considered to exist when individuals within a unit or an organization concur on their opinions of the working environment. Previous research has made significant contributions to our comprehension of the connections between psychological climate and a variety of individual-level characteristics; however, literature has two major limitations. First, research has a tendency to concentrate on the effects of organizational environment or psychological climate on individual results. This is a crucial oversight since, in SMEs, coworkers' shared opinions of the workplace can have a significant impact on employee attitudes in addition to one's own perceptions of the environment.

Second, research has increasingly concentrated on a collection of climate dimensions or a global index representing a single strategically oriented climate (such as a climate for service or a climate for safety). Studying a single aspect of climate or a group of independent aspects does not take into account the larger context in which they are acting. This is a constraint because it can be beneficial to look at the system of climate as a whole. The cumulative influence of many organizational characteristics is likely to be bigger than the sum of their individual dimensions. A person's understanding of the idea of climate and their cognitive representation of the workplace should be included while conducting climate evaluations. The second strategy

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

highlights the significance of common views as the foundation of the concept of climate. Organizational climate is described as the collective impression of how things are in the world. The attitudes, values, and behaviors that distinguish the members of a specific organization make up the organizational climate.

According to Low (1997), the term "climate" refers to an organization's attitudes, sentiments, and social dynamics. He claims that the dominant and well-known leadership philosophies in play here are autocratic, democratic, and laissez-faire. Organizational climate was defined by Kaczka and Kirk (1967) as a set of characteristics that can be felt within a specific organization, department, or unit. The literature in behavioral science is replete with ideas and empirical studies that examine employee behavior as a result of simultaneous variation in organizational dimensions and personal traits. Evidently, neither individual organizational factors (climate) nor individual traits (job satisfaction, tension, or role clarity) independently accounted for a sizable portion of the observed diversity in either organizational effectiveness criteria or job satisfaction. Employee perceptions of these qualities have a significant role as intervening variables in the link between organizational climate and individual behavior. The relevance of employee views is demonstrated by Likert's method for studying businesses, such as how his interaction influence mode/relates causal, intervening, and end-result factors. The assessment of these perceptions allows for the analysis of the relationship between causative and end-result variables. Causal variables like climate dimensions and leadership strategies interact with personality to form perceptions.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Measures of climate aspects and job satisfaction that are based on perceptual data have been the subject of several research. For instance, Friedlander and Margulis (1968) examined the various effects of organizational environment components and individual job values on employees' satisfaction using perception data from an electronics company. They discovered that climate had the highest influence on job contentment with interpersonal interactions, a moderate influence on job happiness with recognizable development in the organization, and relatively little influence on task involvement-related self-realization. Pritchard and Karasick (1973) examined 76 managers from two various industrial groups for their study. They discovered that employment satisfaction factors like job security, working conditions, and promotion chances were somewhat highly correlated with climatic parameters. Also, Schneider (1973) conducted a survey of bank clients and discovered that how they felt about the bank's environment was connected to a type of switching banks (customer dissatisfaction). Consumers were more likely to switch banks regularly when they had an unfavorable perception of the climate at their bank as opposed to when they thought it was a place where the employees and customers came first. Employees within an organization may be able to perceive the organizational environment, according to some behaviorists (Rizzo, House, & Lirtzman, 1970; Schneider, 1982).

2.7 The Adoption of Management Accounting Innovations (MAIs) among SMEs

The competition in a contemporary business environment has highly become alarming and business entities have become more dynamic and aggressive in identifying strategies that ensure profit optimization. This competition compels the management of

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

organizations to strongly develop business strategies and techniques toward maximization of organizational profit. Thus, profit maximization and the cost minimization can assist an organization in creating a competitive advantage. Thus, the adoption of MAIs is one of the techniques for actualizing profit maximization and cost minimization.

The concept of MAIs is derived from Management Accounting (MA). MA refers to a system that provides necessary information to the management of an organization for decision-making. The main objective of MA is to offer financial and non-financial information that assists in planning, controlling, and decision-making for different organizational stakeholders, such as owners, managers, employees, and investors. MAIs refer to the organizational information systems that offer an enterprise or an organization with necessary information that adds value to its customers and the organization itself (Maziriri, 2017; Nuhu, Baird, & Appuhami, 2016). MAIs are related to providing solutions to the management for internal purposes, enhancing effective decisions, and helping enterprises in promoting intended behaviors (Alleyne & Weekes-Marshall, 2011; Maziriri, 2017).

MAI has essential functions as a managerial mechanism for adding value to the general operational activities of an organization. For many years, traditional MAIs like costing, profitability analysis or budgeting concentrate highly on the determination of cost and financial control, and thus, they have been globally and widely applied by large and small organizations. Becasue of the economic development, organizations started employing the modern MAIs in the process of creating and focusing more on strategic orientation. Specifically, there are five aspects of MAIs comprising costing, budgeting,

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

performance evaluation, decision-making practices, and strategic analyses (Maziriri, 2017). Ahmad et al. (2017) also stressed that the emergence of MAIs is a result of continuous changes in the business environment and technology in particular. They, therefore, consider ABC as one of the MAIs designed to take care of the contemporary needs of enterprises and as a result of shortcomings of the traditional costing approach. Other contemporary MAIs, such as Activity Based Management (ABM), strategic cost management (SCM), Balanced Score Card (BSC), value chain analysis (VCA), and key performance indicators (KPI) are also important because they stress quality, competitiveness, cost-effectiveness, speed, and customer satisfaction (Nuhu, Baird, & Bala Appuhamilage, 2017).

In developing countries, MAIs have not been seriously adopted; however, with the increased significance of these practices, organizations in developing nations are motivated and encouraged to adopt MAIs (Bakhsh et al., 2019). Further, dynamic changes in the business environment globally have brought a lot of transformation in SMEs to move toward sustainability by concentrating on the issue of cost efficiency. Consequently, literature in the area of management accounting continues to suggest the importance of MAIs adoption and implementation in enhancing the sustainability of a business (Azudin & Mansor, 2018). Arising from this sustainability and competitiveness, MAIs are considered the most essential practices in organizations; therefore, there is a direct relationship between MAIs and the performance of an organization (Bakhsh et al., 2019). Many empirical studies (Ahmad, 2014; Maziriri, 2017; Nuhu et al., 2016) have established that the performance of SMEs increased tremendously after the adoption and implementation of MAIs.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Studies have also shown that relationships exist between technology, organization, environment, and MAIs, for example, Awa, Ojiabo, and Orokor (2017a) revealed that the three constructs (technology, organization, and environment) have a positive significant relationship with MAIs adoption. In South Africa, Maziriri (2017) examined the influence of MAIs on the performance of SMEs employing a quantitative approach and a cross-sectional design in obtaining data from 380 managers of SMEs. The result of the regression analysis and the finding of the study generally revealed that a positive significant relationship exists between MAIs and the performance of SMEs. This result is consistent with the finding of Nuhu et al. (2016) who equally found MAIs as essential for the achievement of appreciable performance of SMEs. However, the study of Rozlan and Hashim (2018) showed a little deviation. The study examined the relationship between MAIs and the financial performance of SMEs in Malaysia and found that the application of all MAIs is higher by medium-sized firms compared to small-sized enterprises. The study also found weak support for the positive association between the application of MAIs and financial performance.

Concerning the relationship between technology and MAIs, Azudin and Mansor (2018) investigated the MAIs of SMEs in Malaysia. The study considered three factors comprising operational technology, business potential, and organizational DNA. The finding of the study revealed that operational technology has a positive influence on MAIs. This finding aligns with the finding of Ahmad and Mohamed Zabri (2015) who found technology as one of the factors influencing the adoption and implementation of MAIs. Other studies such as Msomi, Ngibe, and Nyide (2019) also found technology and environment as influencing the adoption and implementation of MAIs. However, in the context of UAE, there appears to be a research gap regarding the influence of

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

MAIs on the performance of SMEs. Many studies on SMEs in the UAE context (Ahmad et al., 2018; Al-Ansari et al., 2013; Alnajjar, 2017; Behery et al., 2014; Gupta & Mirchandani, 2018; Nakos et al., 2019; Nuseir, 2018), have focused on other areas, such as social media adoption, digital media, entrepreneurial success factors, and alliances in the internal market.

Thus, this study aims to address the research gap by examining the mediating impact of MAIs particularly ABC implementation critical success factors on the relationship between technology, organization, and environment, and the performance of SMEs in Dubai and Abu Dhabi. Having discussed the effect of MAIs on organizational performance, it is important to highlight that ABC technique has been found as one of the most essential mechanisms for the achievement of an efficient costing system because it identifies and analyses the production activities (Almeida & Cunha, 2017), thus justifying its choice in this study. ABC implementation critical success factors is a shift from a strictly financial approach of performance measurement to a new system perspective consisting of financial and non-financial information (Ahmad et al., 2017). In a volatile market where organizations have to strive for survival, ABC implementation critical success factors is a competitive tool that will assist organizations to sustain and survive. Despite the increasing studies on ABC implementation critical success factors and the acclaimed benefits derivable from it, the acceptance and application of the system is still little and not encouraging (Ahmad et al., 2017).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

2.8 The Implementation of the ABC System

In contrast to conventional costing techniques, ABC assigns overhead expenses and a variety of cost factors to finished goods and services (Cooper & Zmud, 1990). Activity-based costing is now used in many countries, including Malaysia (Wahab, Mohamad, & Said, 2018), Turkey Özcan (2020), Sri Lanka (Rahmouni, 2008), Australia (Askarany, 2012), the United States (Kiani & Sangeladji, 2003), the United Kingdom (Al-Omiri & Drury, 2007), France (Rahmouni, 2008), and France (Babu & Masum, 2019; Gooneratne & Wijerathne, 2019). Planning, controlling, and decision-making are all impacted by pricing, hence improving costing has been suggested as a crucial tool for a business (Özcan, 2020). The main goal of activity-based costing is to obtain a competitive edge and enhance the precision of product costing (Ho, 2008).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Using ABC, costs can be calculated with greater accuracy, allowing this business to focus on activities that provide value (Bi et al., 2016). There are different levels of activity-based costing adoption worldwide, according to recent studies. Similar to this, a number of organizational, cultural, technological, and technical elements account for ABC's widespread adoption and successful execution (Ahmadzadeh, Etemadi, & Pifeh, 2011). In order to ascertain the mediating impact of ABC adoption on organizational, environmental, and technological determinants on the performance of SMEs, the current study critically reviewed the body of prior research on ABC in developed and developing nations.

The adoption of ABC is primarily motivated by the inefficiency of traditional cost systems. Businesses using ABC will see a higher rate of return and make wiser

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

decisions. Compared to non-adopter enterprises, ABC adopter firms reported higher levels of satisfaction and better financial success. It is accepted that the way in which ABC is adopted differs by nation and business and does not appear the same everywhere. In the United States, the 1980s are when ABC first appeared. A few older research support the growing trend of ABC adoption in the US. For instance, Armitage and Nicholson (1993) studied a sample of eminent manufacturing companies in the United States. According to their data, just 11% of the total respondents are ABC adopters. Another survey by Shim and Sudit (1995) of 1000 US corporations revealed a 25% rise in adoption, indicating that ABC was becoming more and more well-liked at the time. Literature supported new upward trends in ABC use among American businesses. ABC, in this aspect, soon extended from the United States to Europe, Canada, Australia, and other industrialized nations. Only 6% of the responding companies in a survey by Innes and Mitchell (1991) in the UK were utilizing ABC, but 33% intended to do so in the future.

Bescos et al. (2001) conducted a survey in France to investigate the adoption of ABC. They discovered that the rate of adoption among the companies is 23%. In another study, Alcouffe (2002) found that 15.9% of the total sample uses the ABC system. According to Cauvin and Neumann (2007), the firm's ABC adoption rate is 23%. Furthermore, Rahmouni (2008) discovered in 2008 that the rate of ABC adoption has increased to 33%. However, very little research on ABC adoption exists in Australia. Further, a study conducted by Booth and Giacobbe (1997) covered a sample of some leading manufacturing firms, and reported that 12% of the total population uses the ABC system.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Clarke and Mia's (1995) findings are consistent with Booth and Giacobbe's (1997) findings, which show that adoption rates in leading manufacturing firms in Australia are 13%. In their study, Chenhall and Langfield-Smith (1998) conducted a study to investigate the adoption rates and accounting practices such as ABC in Australia's leading manufacturing firms. However, the literature available now suggests that the ABC adoption rate is gradually increasing, and that 56% of respondents are reaping the system's benefits which is reported by Alsayegh (2020). In the context of Ireland, Cllarke, Hill, and Stevens (1999) conducted a study to examine the adoption rate in 1999, and discovered that the adoption rate of ABC is 12% among manufacturing firms. Brown, Booth, and Giacobbe (2004) used a survey technique to investigate that the overall rate of ABC adoption was 27.9%, and illustrated that the adoption rates increased from 12% to 34.9% in manufacturing firms and from 17.8% to 28.6% in the service sector. Furthermore, a more recent study carried out by Abeysekera and Sharma (2023) in Australia identified that the ABC implementation is increasing gradually which is quite help for the organizations. On the other hand, a study carried out by Kitsantas, Vazakidis, and Stefanou (2022) mentioned that the implementation of ABC system is low due to several reasons.

Armitage and Nicholson (1993) did a research to look at the implementation of the ABC method among 740 top corporations in Canada. The results show that 14% of all respondents used the ABC system, 15% planned to do so in the future, and 67% thought ABC was inappropriate for their particular line of work. The majority of Canadian businesses are reportedly embracing the ABC approach, with adoption rates reaching 30%, according to Gosselin (2006). The adoption of ABC was sluggish in undeveloped nations. Also, compared to industrialized countries, adoption rates are

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

typically lower in developing nations. It is found in a different survey conducted in Cameroon that 9.3% of businesses use activity-based costing methodologies, and that these businesses are happier with this costing system.

ABC adoption rates in Tunisia were found to be 23.75% of all respondents in a study by Moalla (2007), whereas 12% of all respondents in a study by Sartorius, Eitzen, and Kamala (2007). Maelah and Ibrahim (2006) found that 36% of all respondents in their study of Malaysian small and medium manufacturing companies employed an ABC approach. Chongruksut and Brooks (2005) did a survey in Thailand for a different study and found that the adoption rate is 35%. In the Hong Kong context, a research by Chen, Firth, and Park (2001) found that 11% of all respondents had already adopted it and 5% were planning to do so soon. Last but not least, earlier research has found that both wealthy and developing nations are seeing an increase in ABC adoption rates.

According to published research, a wide range of circumstances have led to the adoption of ABC by numerous organizations worldwide. For instance, Cooper and Zmud (1990) outlined how the product diversity and rising costs are the primary justifications for implementing the ABC method in the current environment. The outcome shows how changes in cost structure and extensive industrialisation are caused by the advancement of manufacturing technologies. In addition, Van Nguyen and Brooks (1997) conducted a postal questionnaire survey with an emphasis on company characteristics and environmental factors, including firm size, resources available, supportive management, diversity and production challenge, and the competitive environment that a firm faces. They showed that ABC implementation critical success factors-using businesses are bigger, have more complicated production processes, and

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

work in an extremely competitive environment. A study by Brown et al. (2004) found no correlation between ABC adoption and technological parameters like cost structure and product quality. Also, they looked into whether competitors in particular and environmental factors generally had little bearing on ABC adoption. Brierley (2008) also utilized a longitudinal approach to research the impact of organizational factors on ABC uptake. Ahmadzadeh et al. (2011) conducted a study in the Iranian environment to ascertain whether organizational factors influence the adoption rates of ABC (firm size, cost structure, and product differentiation).

The results show that ABC adoption is positively correlated with cost structure and product differentiation. On the other hand, they demonstrated that organizational type and size were adversely related to the adoption of ABC. Sartorius et al. (2007) also looked at how technological and organizational factors affected the adoption of ABC. The study's conclusions show that organizational factors have a bigger influence on ABC adoption than technical factors do. In their 2005 study on organizational characteristics in Thailand, Chongruksut and Brooks (2005) discovered that a large range in product complexity, product costs, and administrative costs, as well as growing competition and rising costs, were among the main concerns of ABC users. Also, it was noted that the adoption of ABC was influenced by the complexity of production processes and the intensity of capital equipment. The complexity of company operations is the key organizational component in the Moroccan environment, according to the outcomes of a previous study, on Moroccan enterprises. Cultural variables, on the other hand, include outcome orientation, creativity, team orientation, and attention to detail.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Several previous studies discussed ABC implementation critical success factors through different ways. For instance, Anderson (1995) suggested the critical success factors changes at different stages of implementation of ABC system. Anderson (1995) highlighted the organizational factor connected with the ABC system among the organizations. Similarly, Krumwiede (1998) addressed the ABC implementation stages and the effects of organizational as well as contextual factors in response to the study of Anderson (1995). Another study carried out by Krumwiede and Roth (1997) explained that, many innovative theories, such total quality management and just-in-time, have gained popularity over the past ten years, but management has not always found them simple to put into practice. Similar to activity-based costing, a more recent development in information technology, there are many proponents but few successful practitioners. According to this study, management must thoroughly assess their processes, educate and encourage the key participants, and demonstrate active commitment if they are to take advantage of the more precise product cost data and performance monitoring provided by ABC implementation critical success factors.

Moreover, a study carried out by Malmi (1999) identified that over the course of diffusion, the driving forces behind ABC innovation diffusion in management accounting alter. Early adoptions may be explained by efficient choice, whereas businesses that set trends have a significant impact during the take-off phase. According to Shields (1995), it is explained that the top management's backing, the connection to competitive strategies, the connection to performance evaluation and reward, training, and enough resources are among the behavioral and organizational factors that are crucial for illuminating cross-sectional diversity in ABC success. Moreover, technological diffusion is needed to adopt ABC implementation critical success factors.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

As it is mentioned by Cooper and Zmud (1990), technological diffusion approach is most significant for the implementation.

2.8.1 A Comparison of Traditional Costing System and Activity-Based Costing (ABC) System

ABC is a system for allocating overhead and indirect costs to goods and services, such as salaries and utility prices. The ABC implementation critical success factors of cost accounting is built around activities, which are defined as any occasion, project, or task with a clear objective (Zamrud et al., 2020). ABC method, overhead and indirect expenses are allocated to linked goods and services. In contrast to conventional costing techniques, this accounting method of costing acknowledges the connection between costs, overhead activities, and manufactured goods, allocating indirect costs to products less randomly. However, some indirect expenditures, such the salary of the management and office personnel, are challenging to relate to a specific product. Since ABC improves the dependability of cost data (Niñerola, Hernández-Lara, & Sánchez-Rebull, 2021), it produces virtually true costs and more accurately categorizes the costs spent by the company during its production process. ABC is mostly utilized in the manufacturing industry.

Target costing, product costing, product line profitability analysis, customer profitability analysis, and service pricing all employ this costing system. Utilizing ABC, businesses can better understand expenses and develop a pricing plan (Mahmood Albalaki et al., 2019; Mazbayeva et al., 2022; Zamrud et al., 2020). The cost pool total divided by the cost driver, which results in the cost driver rate, is the formula for

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

activity-based costing. The amount of overhead and indirect costs associated with a specific activity are determined using the cost driver rate in activity-based costing. The ABC implementation critical success factors of cost accounting is based on activities, which are any occasions, units of work, or tasks with a particular objective. Examples of such activities include setting up machinery for production, developing items, distributing finished goods, or operating machinery. Activities are viewed as cost objects and use overhead resources.

According to the ABC approach, a transaction or occurrence that generates costs can also be regarded as an activity (Kaplan & Anderson, 2003; Sedgley & Jackiw, 2001). The term allocation basis is used to illustrate a cost driver, also indicated to as an activity driver. Cost drivers can require things like machine setups, maintenance requirements, electricity usage, purchase orders, quality checks, or production orders. There are two types of activity measures: duration drivers, which track how long it takes an activity to complete, and transaction drivers, which record the number of times an activity occurs. The ABC system categorizes five broad levels of activity that are, to some extent, unrelated to how many units are produced, in contrast to traditional cost measurement systems that depend on volume count, such as machine hours and/or direct labor hours to allocate indirect or overhead costs to products. These levels include action at the batch, unit, and customer levels as well as activity that supports the organization and activity at the product level.

There are three ways in which ABC improves the costing procedure. It does this by increasing the variety of cost pools that can be combined to create overhead charges. It pools costs according to activity rather than adding up all expenditures in one pool

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

for the entire organization. In order to avoid allocating costs based on volumetric metrics like machine hours or direct labor expenses, it also establishes a new basis for allocating overhead costs to specific goods. Last but not least, ABC changes the nature of a number of indirect costs, making expenses that were previously classified as indirect—like depreciation, utilities, or salaries—traceable to specific operations (Kaplan & Anderson, 2003; Sedgley & Jackiw, 2001). As an alternative, ABC increases the unit price of low-volume products by shifting overhead costs from high-volume products to low-volume ones. Activity-based costing can assist businesses in evaluating expenses, verifying those activities that produce value for firms while lowering those activities that have no value addition, hence enhancing business profitability by researching and analyzing the activities that drive costs (Major & Hopper, 2005).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

There is a significant difference between traditional costing systema and ABC system (Esmalifalak, Albin, & Behzadpoor, 2015). Generally, the difference is based on the Cost Allocation Basis, cost accuracy, complexity, overhead allocation, cost behavior, product profitability analysis and decision making. The detail of these points is a follows;

1. Traditional costing systems often assign overhead costs to goods or services using a single, volume-based cost driver (such direct labor hours or machine hours). ABC System allocates overhead costs depending on the activities or processes that use resources by using a variety of cost drivers, many of which are activity-based.
2. Traditional costing methods may result in inaccurate cost allocation, particularly when goods or services have varied patterns of resource

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

consumption, which makes them less accurate for cost analysis and decision-making. By identifying and allocating expenses to certain actions that directly contribute to the creation of goods or services, ABC System offers a more accurate portrayal of costs.

3. In traditional systems, due to its emphasis on a single cost driver, the traditional costing system is easier to install and maintain. The intricacy of contemporary production procedures or service delivery, meanwhile, might not be adequately captured. ABC System is more difficult to develop and maintain since it necessitates in-depth activity analysis and identification of cost and resource-driven activities. Organizations with complicated operations are better equipped for it.
4. Because overhead expenses in traditional costing systems are frequently distributed equally across all items, some products may be over- or underpriced. By assigning overhead expenses to individual actions, ABC System is better able to determine the actual cost of creating each good or providing each service.
5. Traditional costing systems assume that all overhead expenses change directly in proportion to one cost driver, which may not accurately reflect the cost behavior of many activities. Because ABC System is aware of how different activities' overhead expenses operate differently, cost variances may be understood more precisely.
6. If different products have differing patterns of resource use, traditional costing systems may misrepresent the apparent profitability of those products. By considering the real resource utilization for each product, ABC System offers a

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

more accurate view of product profitability and facilitates better pricing and product mix decisions.

Due to erroneous cost information, the traditional costing system may result in less-than-ideal decisions. By delivering more precise cost data, ABC System improves decision support, enabling businesses to make wise decisions regarding product pricing, resource allocation, and process enhancements.

2.8.2 Dimensions of ABC Implementation Critical Success Factors

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

2.8.2.1 Complexity of Manufacturing/Costing

The standard methodologies for cost assignment have challenges in accurately allocating costs due to the presence of the ABC system in industrial processes and the complex patterns of resource consumption. Accurate cost data is necessary for the implementation of ABC (Bhimani & Pigott, 1992; Priyatmo & Akbar, 2019). Correctly allocating the costs of resources used and activities requires accurate cost data. Information about operating expenses is crucial to the effective implementation of ABC, especially when it comes to cutting costs. Companies that use ABC typically look for sources of unnecessary spending and places to cut costs. Several elements are crucial to the effective implementation of ABC. Recognizing these influences and investing in an efficient ABC implementation positions businesses to better manage

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

costs, allocate resources more precisely (Al-Dhubaibi, 2021), and make strategic decisions that help them stay competitive in their markets.

2.8.2.2 Cost Data Usage within the Business Unit

Organizations that want to better understand their cost structures and make educated decisions are increasingly turning to ABC (Zamrud et al., 2020). The diversity of the product range is an important feature in the successful implementation of ABC. The term "product line diversity" is used to describe how many distinct goods and services a business provides, each of which has its own unique manufacturing methods, resource needs, and cost structures. ABC's strength is that it can account for the subtleties of cost allocation in businesses (Bhimani & Pigott, 1992; Fei & Isa, 2010) that offer a wide variety of products. While ABC has its benefits when it comes to allocating costs, it can be difficult to implement when dealing with a wide range of products. ABC's ability to provide a granular perspective of cost allocation can aid businesses with several product lines in making more educated decisions and better managing their cost structures. Data collection and analysis for several product lines presents unique difficulties, though. Customization and a thorough grasp of the particular cost factors associated with each product category are generally necessary for successful ABC implementation in such firms.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

2.8.2.3 Top Management Support

In recent years, ABC has gained popularity as a useful method for managing operational expenses, especially for small and medium-sized businesses. Strong ownership buy-in, adequate resources, and strategic alignment are only a few of the ingredients for a successful implementation of ABC in SMEs. The success of ABC depends heavily on the buy-in and participation of business owners (Intakhan, 2014). Employee participation in ABC processes may benefit from such encouragement (Hoozée & Bruggeman, 2010). Allocating sufficient resources is another important consideration for successful ABC implementation in SMEs. This includes spending money on training, tools, and infrastructure necessary for implementing ABC. For ABC to be effective, it must be adapted to fit in with the existing competitive strategies of SMEs. Small and medium-sized enterprises (SMEs) should centre the ABC system around initiatives that support their competitive strategy. This literature analysis has shown how important it is to have the backing of owners, to use resources wisely, and to align with competitive strategy. The benefits of improved cost management, better decision-making (Zimmerman & Yahya-Zadeh, 2011), and higher competitiveness are more likely to be realized when SME owners actively advocate ABC, provide the appropriate resources, and link ABC initiatives with their competitive goals.

2.8.2.4 Employee Training on ABC

Employees buy-in, enthusiasm, and confidence are crucial to the success of any ABC rollout. Training staff members is crucial for a successful ABC rollout (Dubihlela &

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Rundora, 2014). Training that actually works gives workers the tools they need to actively participate in ABC's success. When companies invest in ABC training for their staff, they see gains in the quality of their data (Mazbayeva et al., 2022), their awareness of costs, and the reliability of their decisions. By teaching them how their work affects the bottom line, training programs can help employees take responsibility for their actions and feel more invested in the company's success. Greater employee engagement in cost control measures is a perk of working for a company with a culture of ABC acceptance. Communicating with employees, involving them in ABC creation, and emphasizing the benefits can all increase ABC's chances of being accepted. Employees' familiarity with ABC indicates how well the system fits into their habits. The long-term success of ABC in an organization depends heavily on the people involved feeling at ease with it. Therefore, it is essential to provide employees with training programs designed to increase their familiarity, knowledge, and comfort level with ABC methods (Mazbayeva et al., 2022). Businesses that put these concerns first will be better able to cut costs, ensure reliable information, and give workers the tools they need to make good choices.

2.8.2.5 ABC as Performance Measurement

Using staff productivity as a performance measure is an important part of a well-rounded ABC implementation strategy. One of the most important aspects of a successful ABC rollout is monitoring staff output (Al Mashkoor, 2022; Charaf, Rahmounib, & Sabar, 2022). Unlike more conventional approaches, ABC allocates expenses directly to the operations that generated them. Company success can be

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

evaluated in terms of resource use and cost-effectiveness by tracking employee productivity. To evaluate operational efficiency, pinpoint improvement opportunities, and ensure that cost management methods are in line with strategic goals, businesses can benefit from using staff productivity as a performance indicator within the ABC framework. Organizations that are able to successfully include staff productivity measurements into their ABC projects can create greater cost-effectiveness and overall performance improvements despite facing hurdles such as selecting appropriate metrics and maintaining a happy work environment.

2.9 Hypotheses Development

In this section, the relationships between independent variables and dependent variables are reviewed and the mediating role of ABC implementation critical success factors on the relationship between independent variables and the dependent variable is discussed.

2.9.1 Technological Factor and SMEs Performance

Researchers have found that SMEs benefit greatly from adopting and integrating new technologies (Lima et al., 2018; Shahadat et al., 2023; Wani, Garg, & Sharma, 2004). Chege and Wang (2020) emphasized the fact that SMEs can improve their performance through the application of technology by increasing their operational efficiency and competitiveness. Chege and Wang (2020) research found that SMEs who invest in technology see gains in productivity, cost savings, and overall performance. The

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

proliferation of technology and the digital economy have revolutionized how SMEs operate. Online SMEs have greater potential for sales and revenue growth than their offline counterparts, according to research. Ghobakhloo et al. (2011) study found that technology helped SMEs expand their customer base and boost their bottom line.

In today's business world, information technology and technology at large are globally growing at a faster rate (Chege & Wang, 2020) and have become an integral part of business. Any profit-making organization that aims to withstand and survive the contemporary business competition should strive to embrace technology in its operational activities. Today, virtually all organizations strive to have and be equipped with quality and necessary information. In the contemporary competitive market, which focuses on tracking and satisfying the needs of each customer, organizations need to have an adequate insight into the information of their business information (Stjepić et al., 2019). Important information is generated in the business process that is successfully conducted by an organization, thus resulting into large amount of different information or data that need to be judiciously filtered, analyzed, saved, and distributed. As a result, a need arises for the application of information technology to obtain such an achievement (Stjepić et al., 2019).

Technology has five dimensions that influence the performance of SMEs and these comprise IT infrastructure, relative advantage, compatibility, security, and complexity (AlSharji et al., 2018). Relative advantage of technology refers to the extent to which the technology is perceived as being better than the idea it supersedes (Mndzebele, 2013). In other words, it encompasses the tangible and intangible benefits derivable from the application of information systems. Scholars have established that

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

there is a positive significant influence of relative advantage on whether organizations decide to use a particular technology (AlSharji et al., 2018). Arising from this, organizations should recognize that the adoption and implementation of technology will either provide solutions to the organizational existing problems or offer new opportunities for production such as improved productivity and enhanced operational efficiency (Mndzebele, 2013). Compatibility, on the other hand, refers to the extent to which a technology is perceived as being consistent with existing values, needs, operating practices, past experiences, and beliefs (Mairura, Ngugi, & Kanali, 2016; Sabbah et al., 2019). Also, complexity refers to the degree to which an innovation or technology is perceived as relatively difficult to understand and use (Stieninger et al., 2018).

Evidence from the literature has shown an empirical research gap related to the relationship between technology and SMEs performance (Aksoy, 2017; Chege & Wang, 2020; Ismail, Talukder, & Panni, 2007; Rehman et al., 2018; Rhee & Stephens, 2020). For instance, a study carried out in 2014 by the Office for National Statistics revealed a clear gap in the adoption and implementation of technology by SMEs and bigger organizations (Chege & Wang, 2019). In a related study by the European Commission on Digital Entrepreneurship, only about 2% of SMEs were found to take advantage of technology innovation (Chege & Wang, 2020). A study on the variables influencing the success of small and medium-sized businesses in KwaZulu-Natal, South Africa, was also done by Sitharam and Hoque (2016). A cross-sectional study using an anonymous online questionnaire was conducted on 74 SMEs owners and managers who were Durban Chamber of Commerce members. The findings showed that technological innovation enhances corporate effectiveness. The majority of respondents believed that

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

competition was one of the biggest issues. Almost all of the respondents said that corruption and crime have an impact on business performance. Among the examined internal and external elements, only the competition showed a significant correlation with the success of SMEs in KwaZulu-Natal. Implementing state-of-the-art technologies boosts operational efficiency, lowers expenses, and promotes overall productivity for SMEs. Utilising sophisticated communication tools enhances teamwork and expands market reach. Nevertheless, SMEs encounter difficulties when faced with the upfront expenses of adopting new technology and providing training for their employees. The successful incorporation of technology allows SMEs to maintain their competitiveness, promptly adapt to market fluctuations, and efficiently meet client requirements. Inability to adjust to technological progress might result in decreased competitiveness and impede growth prospects for SMEs in the ever-changing economic environment.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

This is consistent with the position of the Organisation for Economic Cooperation and Development - that only a few numbers of SMEs have been able to take the advantage and reap the benefits of the technological transition. Efforts have been made by scholars to analyze the reasons for the low adoption and implementation of SMEs by organizations and the benefits derivable from the implementation (Chege et al., 2020) for improving SMEs performance. Results from previous literature have revealed mixed findings as a great number of the studies showed a positive significant relationship between technology and the performance of SMEs, whereas few others have shown that technology has no significant impact on the performance of SMEs. In Kenya, Chege and Wang (2020) examined the impact of technology innovation on the performance of SMEs. The study focused on the agribusiness enterprise in the country

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

employing a quantitative approach and a cross-sectional design. Based on the hierarchical regression models conducted, the outcome of the study revealed a positive significant relationship between technological innovation and the performance of SMEs in Kenya. This result is consistent with the finding of Ramdani et al. (2013) who also found that technology has an impact on the adoption of enterprise application (EA) by SMEs and invariably the performance of SMEs.

Ramdani et al. (2013) empirically investigated the effect of using TOE framework on the adoption of enterprise application (EA) by SMEs in England. Enterprise applications (EAs) are essential for improving the functioning of SMEs. These programmes are specifically developed to optimise and merge several business processes, providing a comprehensive solution to enhance efficiency. SMEs can achieve enhanced resource management, heightened efficiency, and enhanced decision-making by implementing enterprise architectures. With the aid of interviews, the finding of the study revealed a strong relationship between technology and EA adoption by SMEs. Furthermore, the study of Lo et al. (2016) examined the key factors influencing the performance of SMEs in Malaysia. The study considered technology as one of the factors that have an impact on the performance. The study employed a quantitative approach, namely a questionnaire in obtaining information from the owners of SMEs and senior managers working in SMEs in three states in Malaysia. The finding of the study revealed that technology has a significant impact on the financial and non-financial performance of SMEs in the Malaysia context. Other studies also indicated the crucial impact of technology in the determination of the performance of SMEs. Arising from the discussion, coupled with the fact that a lot of findings indicate a significant relationship between technology and SME performance. Various other

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

studies in the literature also identified the use of technology in SMEs (Aksoy, 2017; Črešnar et al., 2023; Demirbag et al., 2006). Finally, the following hypothesis was formulated:

H_1: There is a positive relationship between technological factor and SME performance.

2.9.2 Organizational Factor and SMEs Performance

The organizational context is an aspect of TOE framework and it has an impact on SMEs performance (Palacios-Marqués et al., 2015; Ramdani et al., 2013). The organizational factor refers to the structure and process of an organization, and it can enhance the development or performance of an organization (Cao, Jones, & Sheng, 2014). It has to do with all the characteristics of the organization including the managerial structure, turnover, number of employees, the degree of formalization and centralization, and the organizational resources including the employees and their relationships (AlSharji et al., 2018; Baker, 2012). Organizational structure tends to relate to the innovation adoption process. Specifically, in this study, organizational context consists of four dimensions comprising absorption capacity, owners' or top management support, organizational resources, and employee training.

A study carried out by Nguyen et al. (2021) investigated the mediating role of organizational factors. This study highlighted that organizational factors have a significant role to promote SMEs performance. Organizational factors have the

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

potential role to transfer the positive effect of leadership on performance. Along with the indirect effect, organizational factors also have a direct effect on the SMEs' performance. Another study carried out by Qalati et al. (2022) considered the effects of technological-organizational-environmental factors on SMEs performance. This study revealed that organizational factors have a major role in the promotion of firm performance among SMEs.

Absorption capacity is one of the dimensions of organization context. Scholars in the field of management (Jansen, Van Den Bosch, & Volberda, 2005; Scuotto, Del Giudice, & Carayannis, 2017), have identified and categorized absorptive capacity into two, comprising potential absorptive capacity and realized absorptive capacity. According to Scuotto et al. (2017), potential absorptive capacity is characterized by the acquisition and assimilation of knowledge. Knowledge acquisition, in this context, refers to the capability of an organization to value, recognize, and acquire external knowledge. On the other hand, knowledge assimilation refers to the organization's capability to absorb external knowledge. Realized absorptive capacity, according to them, consists of knowledge transformation and exploitation. Knowledge transformation refers to an organizational ability to develop routines through the combination of the present knowledge in the organization and the newly acquired and assimilated one.

As for knowledge exploitation, it is the process by which an organization enhances, extends, and leverages competences already existing or creates new ones through acquisition and transformation of knowledge externally. This process enables organizations to create a tangible interaction or network with their relevant

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

stakeholders. Through implicit and explicit knowledge integration, organizations' capabilities tend to improve. Thus, the performance of an organization or business is dependent on its ability to make use of external knowledge, and how the reported knowledge is employed to develop new goods and services (Gopalani & Shick, 2011; Grönroos & Ravald, 2011; Scuotto et al., 2017). In other words, absorptive capacity allows SMEs to convert external knowledge into new knowledge that will enhance their performance (Del Giudice, Della Peruta, & Scuotto, 2014; Scuotto et al., 2017).

Top management is another dimension of organizational context and it can foster innovation by creating a context that allows change and supports innovations that enhance the major objectives of an organization (Baker, 2012). According to Garrett Jr and Neubaum (2013), top management support or owner's support refers to commitments and backing by the highest ranking officers for projects and strategies implementation. The leadership behaviors of top management and the process of communication include describing the role of innovation within the firm's general strategy, indicating the essence of innovation to subordinates, formal and informal rewards of innovation, and building a formidable executive team that can cast a compelling vision of the organization's future (Baker, 2012). Many previous studies (Islami & Kashurnikov, 2019; Tung, Baird, & Schoch, 2011) have found owners' or management support as having a positive relationship with the performance of an organization.

Furthermore, organizational resources play an important role in the success and performance of an organization (Price & Stoica, 2015). The concept of organizational resources is looked at in different ways. For instance, Hoq and Chauhan (2011)

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

considered organizational resources as from four orientations comprising market orientation, social capital orientation, strategic orientation, and entrepreneurial orientation. Market orientation refers to the extent to which an organization develops a strategy of marketing, and it has a great impact on the performance of an organization (Masa'deh et al., 2018; Presutti & Odorici, 2019). Also, entrepreneurial orientation consists of the combination of organizational innovativeness, risk, and proactiveness (Zhang, Ma, & Wang, 2012). An organization that has a robust innovative culture, a proactive stance compares to its competitors, and a zeal to take risks has a chance of engaging in operations across borders and perform well (Zhang et al., 2012). Social capital orientation and strategic orientation are also considered essential for the performance of SMEs and organizations generally (Campbell & Park, 2017; Sulistyo & Ayuni, 2020). Other scholars look at organizational resources from the perspective of tangible and intangible resources specified by the resource-based view theory (Galati et al., 2019; Kamasak, 2017).

For instance, RBV's hypotheses hold that businesses would gain competitive advantages by developing and using their organizational, human, and physical resources in a special and distinctive way. Physical and intellectual resources continue to be the foundation of an organization's competitive advantage in this regard (Barney, 1991). Moreover, employee training is crucial for the expansion and development of SMEs (Antonioli & Della Torre, 2016; Chege & Wang, 2019). Thus, organizations should have policies that promote SMEs development and enable them to attract and retain qualified or skilled employees both within and across the border because they are crucial for promoting growth. Previous studies have established that there is a relationship between organization context and organizational performance.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

For instance, the study of AlSharji et al. (2018) in UAE, the study of Ramdani et al. (2013) in England, and that of Pan and Jang (2008) in the communication industry in Taiwan have indicated a significant relationship between organizational factors and the performance of SMEs. Thus, the impact of the organizational factor on performance cannot be underestimated. Based on the above discussions, this study proposes the following hupothesis:

H_2: There is a positive relationship between organizational factors and SME performance.

2.9.3 Environmental Factors and SMEs Performance

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Business environment offers a way to market threats and opportunities which SMEs and other organizations have to take cognizance of and respond (Yan, 2010). In contemporary society, the business environment tends to be the most dynamic challenge organizations confront. To enhance their performance, organizations are trying to reduce the fall-out from price wars, and continuous cost efficiency drives, and concurrently optimize new opportunities in the market (Masa'deh et al., 2018).

The business environment and its associated factors are described in different ways in the literature. In their study, Chege et al. (2020) posit that the business environment is characterized by fast changes in the market and technology that pose a risk to the processes of product or service. Environmental changes, as stated, comprise continuous changes in technology, stiff competition, and market demands, which all

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

have an impact on business performance. According to Akanni, Oke, and Akpomiemie (2015), there are three perspectives on the business environment. The first one relates to the individuals outside the organization that interrupt the organizational undertakings, including government regulations, sellers, competitors, and clientele. The second perspective lays emphasis on the exterior forces, such as intricacy, munificence, and lethargy. The third perspective is related to sensitivities of decision-making on environmental aspects.

Studies such as Cao et al. (2014) addressed the business environment from the view of competitive pressure and government support. Consequently, competitive pressure and government support are considered environmental factors that influence the adoption of MAIs and the performance of SMEs in general. Although other environmental factors such as economic and social values, stakeholders' collaborations, consumers' readiness, partners' readiness, and external pressure among others have been used in the literature, competitive pressure and government regulation are found to have more significant powers than the rest (Cao et al., 2014; Erind, 2015; Ramdani et al., 2013).

Furthermore, the influence of government on the performance of an organization cannot be underestimated. Government regulations can be advantageous or disadvantageous; they can have a beneficial or a detrimental effect on organizational innovation (Baker, 2012). Government support in the form of initiatives or strategies that encourage and promote SMEs to adopt MAIs can enhance the performance of SMEs (Erind, 2015). According to Chege and Wang (2019), assisting SMEs by the government through the provision of necessary amenities will go a long way in

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

improving their performance. He recommended improving the necessary infrastructure for the growth and development of business. These infrastructure facilities include road construction, maintenance, rehabilitation, construction of bridges, seaports, airports, railway lines, transmission lines, and telecommunication systems.

Different studies have established that there is a relationship between the environment and the performance of organizations. Specifically, the study of Cao et al. (2014) investigated the influence of environment, organization, and technology on the adoption of Radio Frequency Identification (RFID) in tracking patients in the United States of America hospital. The finding of the study revealed a significant relationship between the environment and the adoption and invariably the performance of the hospital. Also, the study conducted by Nair and Tan (2018) examined the factors that are responsible for the implementation of Activity-Based Costing by SMEs in Malaysia to improve their performance. The study revealed that the environment has a significant impact on the implementation of SMEs in Malaysia. Other studies carried out by Ramdani et al. (2013) and AlSharji et al. (2018) have also indicated a significant relationship between environment and organizational performance. Consequently, the following hypothesis was formulated:

H_3: There is a positive relationship between the environment factor and SME performance.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

2.9.4 ABC Implementation Critical Success Factors and SME performance

Many studies have examined the performance of SMEs in different contexts most especially in developed nations (Al-Nuaimi, Mohamed, & Alekam, 2017; Mahmood & Hanafi, 2013; Pratono & Mahmood, 2015; Quartey et al., 2017) and the consensus among the scholars is that the contribution of SMEs is germane for the development of a nation and that ABC reduces cost allocation inaccuracies and improves organizational performance. Based on the reviewed literature, this study focuses on examining ABC adoption and SME performance. In Thailand, Vetchagool, Augustyn, and Tayles (2020) studied purposely the assessment of activity-based costing and its impact on business performance. In their study, ABC extensive use of cost analysis, cost evaluation, and cost strategy significantly impact business performance financially and non-financially. Albalaki, Abdullah, and Kamardin (2018) in their study found a positive relationship between ABC implementation and performance.

Similarly, Raucci and Lepore (2020) examined ABC implementation effect on SMEs performance. The model for the study was designed starting from the distinctive characteristics of the SMEs' collaborative culture. The findings provided evidence that ABC influences the performance of SMEs in the Italian context. Likewise, in the study carried out by Mohammed (2019), it was found that ABC usage positively influences SMEs performance. It was further concluded that the modern cost management techniques such as ABC are relevant factors influencing SMEs performance.

Maiga (2017) in another context found that Activity-based costing positively and significantly improves operational performance. In contrast, Ríos-Manríquez,

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Colomina, and Pastor (2014) findings show that there is low penetration of ABC usage in the Mexican SMEs sectors which further impacts their performance negatively. Alvarez et al. (2021) also established that management accounting practices such as costing enhances SMEs performance. Likewise, Maziriri (2017) examined the management account practices impact on SMEs performance in the context of South Africa. The study made known that managing accounting practices such as costing system impacts SMEs performance significantly. In the same context, AlKhajeh and Khalid (2018) established the positive relationship between the management accounting practices such as costing system and SMEs performance. Based on the above discussion, the following hypothesis was formulated in the study:

H_4: There is a positive relationship between the ABC implementation critical success factors and SME performance.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

2.9.5 Technological, Organizational and Environmental Factors, and ABC Implementation Critical Success Factors

2.9.5.1 Technological Factor and ABC Implementation Critical Success Factors

A successful deployment of technology for the adoption of ABC depends on the internal technology resource of an organization comprising infrastructure (Wegmann, 2019), technical skills, and user time. Thus, an organization with higher levels of technological infrastructure and competence has a better chance of adopting ABC (Awa et al., 2015). However, empirical studies, specifically on the ABC adoption, seem to be scarce

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

(Jaradat et al., 2021). Besides, few available recent studies have established that there is a relationship between technology and the adoption of other innovations. For example, Awa, Ukoha, and Igwe (2017) examined the technological, organizational, and environmental factors in the adoption of technology in six groups of small service enterprises that have strong operational activities in Nigeria. Using a survey method, the finding of the study revealed that technological factors have a strong relationship with technology adoption in the enterprises. In another study conducted by Ruivo, Oliveira, and Neto (2014), enterprise resource planning use and value determinants were examined in the context of Portuguese SMEs. The finding revealed that the compatibility and complex components of technology are significant determinants of performance.

Ahmad et al. (2017) looked at how Activity-Based Costing was implemented in Malaysian SMEs. A total of 108 completed replies were received from Malaysian SMEs in the manufacturing sector, who were included in the sampling. Only 17% of respondents, according to the results, have adopted the ABC implementation critical success factors in their businesses, and the majority of ABC users are still in the adaption stage. The degree of production environment complexity and strong top-level support are key factors in this system's success. It was also discovered that the primary causes of the ABC system's rejection in SMEs are a lack of resources, competence, and cost. Management accounting system is based on ABC (Moalla & Basti, 2020), therefore, the use of ABC success factors is important to implement in SMEs. Aldukhil (2012) employed a survey method for developing and testing a model of successful adoption of ABC system. The findings showed that ABC's adoption rate is lower than what has been noted in the literature.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Chege and Wang (2020) looked at the impact of environmental sustainability practices on SME performance in Kenya in a different study. Hierarchical regression models were utilized in the research, and 204 small firms were included in the sample. The findings indicated that technological innovation has an impact on environmentally conscious business owners who enhance the performance of the company. Successful companies can achieve greater financial success if they go above and beyond their financial responsibilities to support environmental community projects and social welfare. Management creativity and staff participation in environmental protection initiatives can boost a company's performance and reputation among stakeholders.

According to Cleary et al. (2022), ABC implementation success factors are important for SMEs performance. The success elements for implementing ABC are crucial for SMEs because they improve cost accuracy, which allows for precise pricing and resource allocation methods. An efficient culture can flourish when there is open dialogue and backing from upper management. SMEs can optimise their performance and competitiveness in the market by integrating ABC in a phased strategy that allows for smooth training of employees and leveraging ABC's insights for better decision-making. Similarly, other latest studies also highlighted the major role of ABC implementation critical success factors in SMEs performance (Mwila, Masaka, & Tukumana, 2022; Paradzal, Wadesango, & Sitsha, 2023; Yahaya, 2019). In addition, Durowoju (2017) investigated how technology advancements affected the performance of SMEs in Lagos State, Nigeria. 153 managers and owners of SMEs in the Lagos metropolis participated in the study's descriptive survey research approach. A linear regression strategy was the main statistical method employed. According to the hypothesis that was put to the test, technological advancement has an impact on small

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

and medium-sized businesses. Arising from these findings, this study proposed the following hypothesis:

H_5: There is a positive relationship between technological factor and the ABC implementation critical success factors.

2.9.5.2 Organizational Factor and ABC Implementation Critical Success Factors

Previous literature has indicated that organizational factors have an influence on the adoption of ABC in different industries and different countries (Bhimani & Pigott, 1992; Fei & Isa, 2010; Hoang et al., 2020; Krumwiede, 1998; Mazbayeva et al., 2022). In the context of the present study, organizational factors comprise absorption capacity, owners' support, organizational resources, and employee training. The majority of the studies on ABC adoption and implementation show the significance of organizational factors in the achievement of successful adoption or implementation for the SMEs. For instance, the study by Ahmad et al. (2017) examined the factors influencing the implementation of ABC in the Malaysian SME sector employing a quantitative approach namely a questionnaire survey in obtaining information from owners of SMEs operating in the manufacturing industry. The finding revealed that the organizational factors such as management support and organizational resources have a significant influence on the adoption and implementation of ABC in the Malaysian SME sector. This finding is consistent with the result of Awa et al. (2017a) who found organizations influencing the ABC adoption in Nigeria. In a similar study conducted in Chin (2010), it was found that organizational and behavioral constructs affect the success of ABC

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

implementation critical success factors in the manufacturing industry. The results also found organizational factor, specifically the management support, as having a strong influence on the success of ABC in the manufacturing industry. This finding is consistent with the earlier and later findings of Brown et al. (2004), Maelah and Ibrahim (2006), and Ahmad et al. (2017).

However, Nassar et al. (2009) indicated another organizational factor, other than the management support, as an essential one for the success of ABC system. The study examined the critical success factors and barriers for the implementation of ABC system in the Jordanian industrial sector. The finding revealed that training can make or mar the successful implementation of ABC in the Jordanian industrial companies. Based on the above findings, the following hypothesis was formulated:

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

H_6: There is a positive relationship between organizational factor and the ABC implementation critical success factors.

2.9.5.3 Environmental Factor and ABC Implementation Critical Success Factors

Environment is considered an essential factor in any adoption decision (Baker, 2012). In this regard, environment refers to all those factors outside the organization and the conditions in which it operates (AlSharji et al., 2018). In the context of this study, environment comprises government support and competitive pressure from the industry in which an organization operates. Previous empirical studies have established that there is a relationship between the environment in which an organization operates and

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

adoption decisions. For example, Ahmad et al. (2017) investigated the factors influencing the implementation of ABC system by SMEs in the manufacturing industry in Malaysia. The findings revealed that manufacturing environment is one of the factors responsible for the successful implementation of ABC system in Malaysia. In another study in the telecommunication industry, AlSharji et al. (2018) empirically examined the major drivers of social media adoption intention by SMEs in UAE. The study focused on the technological, organizational and environmental components influencing the adoption by the SMEs. The finding showed a strong relationship between environment and adoption intention by the SMEs. Another study by Nair and Tan (2018) supports this and confirms that the external environment has an influence on ABC implementation by SMEs in Malaysia. Previous studies highlighted the role of environmental factors in the implementation of ABC system (Al-Omiri, 2003; Ismail & Mahmoud, 2012; Jusoh & Miryazdi, 2015; Weshah et al., 2022). However, these studies are conducted in different industry and country contexts, and this may be the justification for the inconsistencies in the results.

Competitive pressure refers to the extent of pressure from other organizations in the same industry (competitors), which is an external power pressing an organization to make use of a new technology to avoid the decline in competitiveness (Ruivo et al., 2016). In other words, it is the degree of pressure that an organization feels from its competitors within the same industry (Cao et al., 2014). Competition and a high level of rivalry among companies in the same industry increase the possibility of adopting innovation with a motive of gaining a competitive advantage (Erind, 2015). Thus, the competition intensity is an essential driver of technology adoption and the adoption of other initiatives in an organization (Palacios-Marqués et al., 2015). According to

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Ramdani et al. (2013), competitive pressure is regarded as one of the best determinants of organizational adoption of innovative practices such as MAIs. Industrial competition is generally perceived as having a positive impact on the adoption of innovative practices (Yan, 2010). Consequently, the following hypothesis was formulated:

H_7: There is a positive significant relationship between environmental factor and the adoption of ABC implementation critical success factors by SMEs in UAE.

2.9.6 The Mediating Role of ABC Implementation Critical Success Factors

The mediating variable, also known as an intervening variable, mediates the relationship between the exogenous variable (i.e., independent variable) and the endogenous variable (i.e., dependent variable or result) (Baron & Kenny, 1986; Kenny, 2014). In a typical paradigm for mediational research, it is assumed that the exogenous and endogenous variables do not interact directly but rather that the exogenous variable first influences the mediating variable before having an impact on the endogenous variable. A "casual chain of effects" refers to the relationship between the exogenous and endogenous variables, and this is what is meant by it.

Therefore, this section focuses on the mediating role of ABC implementation critical success factors on the relationships between technological factors, organizational factors, environmental factors, and SMEs performance. However, it was discovered in literature that limited studies in the past have used ABC implementation critical success factors as a mediating variable. Thus, this limits the analysis of vast

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

relevant studies in this section. In particular, no substantial evidence was found in the Arab regions, whereas the implementation of ABC system is already in place in some of the regions of business enterprise. The few existing studies will be discussed and analyzed in this section.

Mahmood Albalaki et al. (2019) conducted a cross-sectional survey of 114 manufacturing enterprises in Iraq to determine the extent to which the adoption of ABC mediates the relationship between external contingency factor and organizational performance. PLS-SEM was used to evaluate the data, and the findings showed that market orientation and environmental uncertainty have positive and significant effects on ABC implementation as well as a positive and substantial impact on organizational performance. In light of this, the study determined that ABC implementation mediates the association between external contingency elements and organizational performance. Based on this statement, it appears that the study's ABC implementation mediates the relationship between organisational performance and external contingency elements. Put simply, ABC is a way for outside forces to influence performance. With this mediation in mind, businesses can better understand ABC's function in dealing with outside forces, which could lead to better decisions and more efficient use of resources, ultimately leading to better performance. This realisation highlights the value of ABC in reducing the effect of outside factors on business results.

In another study, Olusola et al. (2013) focused on Technology-SMEs performance nexus in Nigeria. Using a multi-stage sampling technique, the data were collected from 200 SMEs which operate in diverse economic sectors/industries. It was found that information technology enhances the performance of the selected SMEs.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

They further concluded that SMEs investment in technological capability has the potential of improving their performance in terms of cost efficiency, business turnover, productivity enhancement, and saving operation time. Besides, Albalaki et al. (2018) aimed to establish the mediating role of ABC implementation on how competitive strategies impact the performance of an organization. A SEM approach was employed by the authors and the study was conducted in the manufacturing sector of Iran. Their study found that ABC implementation mediates the direct relationship between competitive strategies and firm performance. ABC is crucial in shaping how strategic choices affect operational efficiency and financial results. The mediation implies that ABC may help firms connect their competitive strategy with cost management, improving firm performance. Understanding this mediation illuminates the complex relationship between strategic choices, cost structures, and business success.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Similarly, Fei, Namazi, and Isa (2017) assessed how the ABC application enhances firm performance in the Chinese manufacturing industry. Based on their analysis, they established that successful application ABC significantly influences organizational performance and enhances quality production. Further, Soobaroyen and Poorundersing (2008) used a regression path-analysis in assessing how MAS mediates decentralized structure and organizational performance in the developing countries of Africa. The findings of their study also established a mediating role of MAS such as ABC in enhancing the direct relationship between decentralized structure and organizational performance. Also, Elhamma and Zhang (2013) investigated how ABC adoption enhances organization performance, and the findings affirmed that ABC adoption impacts organization performance in the Moroccan firms.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Hardan and Shatnawi (2013) also confirmed this conclusion, indicating that ABC implementation improves organizational financial performance. In assessing the relationship between information technology and organizational performance in the context of Iraq, Al-Nuaimi et al. (2017) expanded on earlier studies and incorporated ABC. Their research's conclusions showed a clear connection between information technology use and business performance. However, the relationship is partially mediated by ABC implementation. In a similar study, Rasid et al. (2011) investigated the mediating effect of MAS on organizational factors, such as competition intensity, innovation, and technological factor on the performance of organizations in the context of Malaysia. They found that MAS mediates the relationship between the organizational factors and its performance.

In a different study, Xiao, Duh, and Chow (2011) investigated the direct and indirect performance effects of management accounting and controls and information/communication technologies (MAC). The analysis was based on survey and archival data from 219 Chinese companies with stock market listings. They found that although there is significant variance amongst firms in the utilization of each technique, ICT and a variety of MAC are both widely used. With a few exceptions, such as activity-based costing/management, the study indicated that both ICT and MAC have large and positive direct performance benefits, and that ICT also enables MAC to have a significant and good indirect performance effect. These findings imply that explicitly taking into account the mediating function of ICT in MAC deployment would increase the effectiveness of both the use and evaluation of ICT and MAC. Therefore, when the process and understanding of users improve, this will subsequently have an effect on SME performance. Hence, it is been established based on the above discussion that

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

different factors, such as technology, internal organizational, and environmental factors influence ABC adoption, and similarly, the adoption and application of ABC system further enhance organizations performance.

Adoption of the ABC system is theoretically and empirically suitable to serve as the mechanism (mediator) via which the gaps observed will be closed, according to the postulation of Baron and Kenny (1986). In their studies, Baron and Kenny (1986) and Hair et al. (2017) found that if a relationship between the independent variable and the mediating variable and between the mediating variable and the dependent variable is established, then there is a chance that a particular construct will act as a mediator or an intervening variable. The viewpoint of Preachers and Hayes' (2009; 2010) mediation analysis approach is likewise in line with this. As stated above, numerous studies have established relationships between technological, organizational, environmental factors and performance. Accordingly, it can be proposed that ABC implementation critical success factors can play the role of a mediator in this study.

Finally, from aforementioned discussion based on literature, it is observed that the relationship between technological factors and SME performance is mediated by critical success factors in ABC implementation, which guarantee the efficient integration of cutting-edge technologies. Effective leadership support and transparent communication facilitate technological adaptation during ABC implementation. SME utilisation of technology for cost efficiency is made possible through comprehensive employee training, and a phased approach facilitates smooth integration, thereby collectively optimising performance in the digital environment. In addition, by facilitating efficient integration, critical success factors in ABC implementation serve

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

as mediators between organisational factors and SME performance. Support from leadership and transparent communication facilitates the implementation of ABC, which increases the adaptability of the organisation. SMEs are able to align organisational factors with cost-effective practices through comprehensive employee training and progressive integration, thereby optimising performance in accordance with organisational dynamics. Furthermore, by facilitating adaptability, critical success factors in ABC implementation function as intermediaries between environmental factors and SME performance. Support from leadership and transparent communication improves responsiveness to environmental changes. SMEs are able to better align their operations with the ever-changing business landscape through comprehensive employee training and phased implementation. This ensures a smooth integration of changes that collectively enhance performance in light of environmental dynamics.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Therefore, it is possible that ABC implementation critical success factors could influence the relationship between the two variables. Based on the theoretical and empirical assertion, the following hypotheses were formulated in the study:

H_8: The ABC implementation critical success factors mediates the relationship between technological factor and SME performance.

H_9: The ABC implementation critical success factors mediates the relationship between organizational factor and SME performance.

H_{10}: The ABC implementation critical success factors mediates the relationship between environmental factor and SME performance.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

2.10 Theoretical Framework

Numerous theories such as Venkatesh et al.'s (2003) unified theory of acceptance and use of technology (UTAUT), Rogers's (1995) Diffusion of Innovation (DOI) theory, Davis's (1986, 1989) Technology Acceptance Model (TAM), Meyer and Rowan's (1977) and institutional theory have been adopted so far to ground information system and technology adoption researches. Technology-Organizational-Environmental (TOE) framework is introduced by Tornatzky and Fleischer (1990) is appropriate with the current study to investigate the adoption of Activity-Based Costing in the relationship between technological factor, organizational factor, and environmental factor on organizational performance. Besides, this study adopted Resource-Based View (RBV). Furthermore, other theories such as Knowledge-Based View (KBV), Diffusion of Innovation Theory (DOI) and Technology, Organization and Environment (TOE) are also adopted as the supporting theories in the current study idea.

2.10.1 Relevant Theories

2.10.1.1 Knowledge-Based View (KBV)

KBV is a resource-based view's extension. It transforms the relevant real and intangible resources to knowledge, therefore the business should prioritize knowledge as well as competitive capabilities in its decision-making and attention (Qi & Chau, 2018).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Nonaka and Konno (1998) assert that the only asset that can result in a real competitive advantage is knowledge. Knowledge is the organization's most strategically important resource, according to KBV. It is employed to highlight the critical part knowledge generation and exchange play in raising organizational performance. The KBV focuses on the key knowledge which conceptualizes an organization as an institution to develop and integrate information knowledge. KBV research has shown that the accessibility of knowledge among organizations has an impact on innovation performance (Cheng et al., 2014). Specifically, knowledge acquisition through experiential learning and transfer within or across SMEs could create excellent innovation outcomes. As such, the KBV theory sheds light on the relationship between knowledge and SMEs performance.

05-4506832 Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah ptbupsi

According to an empirical analysis of KBV, SMEs' ability to innovate may be impacted by a variety of knowledge obtained via consumer interaction in technology, organizations, and environments (De Oliveira et al., 2020). For instance, firms can learn customer preferences and identify problems earlier by using technology, organization, and environment (Cui & Wu, 2016). As a result, they can generate more creative product or service concepts that are highly valued by customers (Mahr, Lievens, & Blazevic, 2014). Because technology, organization, and environment enable the creation of customer knowledge and subsequently improve the innovation performance among SMEs in the UAE, the KBV theory is therefore applicable to the relationship between technology, organization, and environment and the performance of SMEs in the current study. As a result, the current study suggested that technology, organization, and environment had a favorable impact on SMEs' performance.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

According to KBV theory, culture is an intangible asset that plays a vital role in an organization (Abdi & Senin, 2014). An organization can exploit a culture to promote knowledge sharing, which is vital to the success of the organization. The interpretation of the results in the relationship between innovative culture and SMEs performance in this study can be explained entirely by this theory. Thus, organizational factor will lead to a positive relationship with innovation performance among SMEs in UAE.

Organizational factor has been described as the acquisition or development of new skills or knowledge in reacting to external or internal stimuli that can result in improving organizational effectiveness and efficiency (Spicer & Sadler-Smith, 2006). The acquisition of knowledge is referred to as the search, identification, and absorption of external knowledge (Santoro & Bierly, 2006). Based on KBV, organizational factor is considered an intangible asset, and it is a crucial knowledge resource for an organization. It is consistent with KBV as organizational factor focuses on knowledge, and eventually, it will lead to organizational innovation. Therefore, the present study proposed that organizational factor will have a positive relationship with SMEs performance. Hence, the relationship between organizational factor and SMEs performance can be interpreted with this theory.

According to Soininen et al. (2012), the technology factor measures an organization's willingness to engage in innovation activities, take calculated risks when developing new goods and services, proactively search for market opportunities, and move more quickly than rivals. According to empirical study, organizations that use technology produce a higher degree of knowledge-based resources that enable competitive advantage (Dada & Fogg, 2016). Thus, the technology component can be

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

seen as supporting KBV theory. As a result, the entrepreneurial attitude helps SMEs perform better in terms of innovation. Consequently, the present study suggests that there is a favorable correlation between the technological element and the performance of SMEs.

Moreover, KBV's awareness of two independent sources of innovation—internal and external—is its most significant contribution (Menon & Pfeffer, 2003). One study found that internal and external sourcing are key factors in the relationship between knowledge sourcing and SMEs' performance (Wang et al., 2016). In terms of open innovation, an organization permits knowledge to be obtained from other firms and used internally to enhance innovation performance and maintain competitiveness. In conclusion, knowledge-based resources are challenging to duplicate and socially complicated. The organization's ability to maintain a competitive advantage and produce superior results is significantly influenced by the diversity of its knowledge base and capabilities. Therefore, in the current study, technology, organization, and environment serve as knowledge sources to enhance SMEs' performance.

2.10.1.2 Diffusion of Innovation (DOI) Theory

DOI is another popular theory that has been used in the research field of innovation. Based on the theory, the result of diffusion is that people act as part of a social system that adopts a new idea, behavior, or product (Rogers, 2010). DOI can be divided into two sections, namely innovation and diffusion. Innovation is characterized as the adoption of novelty and alteration of the attitude and behavior of an individual or

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

groups. When an individual or a group subjectively agrees or perceives something as "new", this constitutes innovation. As for diffusion, it is a mechanism by which an innovation is communicated within a specific period. To achieve a certain degree of consensus, individuals or groups can disseminate innovation through their social networks by exchanging information through specific channels. In short, diffusion can be a process of delivering innovation such as new products, applications, technologies, and ideas through a specific channel among the participants of a social system (Akça & Özer, 2014).

DOI has been applied to understanding the way people convert new ideas into real-world applications. The DOI theory explains how the adoption of innovation is influenced by the communication involved, the characteristics of individual decision-making procedures, the possible consequences, and the features of the innovation (Rogers, 2010). According to Rogers (2010), individual or group characteristics will influence the adoption of innovation. Adoption is considered as a complex psychosocial process. For example, even with the evidence that technology, organization, and environment can enhance SMEs performance, SMEs still lack information and knowledge to adopt innovation. However, via regular social networking, the interaction with others to share knowledge, ideas and experiences can bring the dissemination of new ideas.

In the present study, the DOI theory is used to explain the research framework. The DOI theory is employed because it describes the perceived features of innovation, such as relative advantage, complexity, compatibility, trialability, and observability. These features will affect SMEs' intention and thus significantly contribute to the

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

adoption of innovation and eventually improve the SMEs performance in the era of Industry 4.0. The related characteristics will be discussed as follows.

a) Relative advantage describes the degree to which an innovation is considered to be greater than the idea it supersedes (Rogers, 2010). Since the present study focused on SMES performance among SMEs in UAE, relative advantages are conceptualized as the SMEs perceive the economic benefits associated with innovation that is expected to influence the innovation adoption.

b) Compatibility is the degree to which innovation is shown to be consistent with previously applied innovation and the entrepreneur's current values or norms (Rogers, 2010). Empirical studies have indicated that compatibility is one of the principles of the adoption of innovation (Chau & Hu, 2002; Cosgun & Dogerlioglu, 2012). Therefore, SMEs must focus on the alignment between existing work practices and innovation because of the higher degree of compatibility that is anticipated to have greater innovation adoption.

c) Complexity is stressed by Rogers (2010) as the degree to which an innovation is viewed as relatively tricky to grasp and use, and thus it is likely to have adverse effects in the adoption of innovation. Therefore, if it aligns with an absorptive capacity, SMEs are more likely to embrace an innovation, which reflects the knowledge and skills of the employees that are crucial for successful adoption.

d) Trialability means the degree to which an innovation that allows innovation can experiment on a limited basis (Rogers, 2010). When innovation trial is enabled, it offers adopters the ability to redesign innovation based on initial knowledge

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

(Ramiah, 2009). Previous studies have also revealed that trialability has a positive influence on innovation adoption (Duckworth, 2014).

e) Observability is the degree to which others can view the effects of an innovation (Rogers, 2010). It makes it possible for SMEs to determine the effects of future adoption, thus having a positive influence on the adoption of innovation. Therefore, SMEs are also more likely to innovate because they can imagine the possible advantages and risks.

In a nutshell, the DOI theory is consistent in the present study as it focused on innovation performance among SMEs in UAE. This theory is also compatible with the enablers of SMEs performance. For example, social media is a superior platform that can interact with customers and gain knowledge from customers to generate a better product innovation; innovative culture and organizational learning can lead employees towards innovation adoption in an organization; entrepreneurial orientation and open innovation may bring organization to adopt innovation swiftly. Hence, this theory is feasible in the present study as technology, organization, and environment will lead to SMEs performance adoption. Eventually, it can improve innovation performance among SMEs in UAE.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

2.10.2 Underpinning Theory

2.10.2.1 Technology, Organization and Environment (TOE) Framework

The TOE framework was developed by Tornatzky and Fleischer (1990) initially to understand and describe the influence of technological innovations adoption on organizational environment (Chen, Kang, & Luna-Reyes, 2019). Thus, it is consistent this study that examined technology, organization, and environment and how they influence SME performance and ABC adoption. TOE's implementation critical success factors contextual framework creates a basis for researchers to analyze technology adoption in organizations (Zrzavy, 2020). Three different elements of an organization's setting are explained by the TOE framework, an organizational-level theory, as having an impact on adoption decisions (Baker, 2012). The technology context, organizational context, and environmental context are these three components (Angeles, 2014; Nkhoma, Dang, & De Souza-Daw, 2013).

All of the technologies required for an organization are included in the technical context. This covers both current technologies that are now being used in an organization and those that are commercially accessible but are not yet being used (Baker, 2012). This also involves the existing organizational practices and technological instruments both physically and non-physically that are internal to the firm and those that are outside the control of the firm (Hage, 1980). The available technologies of an organization are essential in the adoption process because they set a broad limit on the scope and pace of technological change that a firm can undertake.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Before adopting technology, organizations do assess a variety of aspects in the technological, organizational, and external environments. Technology is regarded as an instrument for competitive advantage in the knowledge economy. It is also seen as internal aspects of the organization in the adoption process of technology. Organizations seek technological solutions that are simple to use and also reduce cost and time for all stakeholders (Awa et al., 2017b).

Prior studies also suggested that accomplishing innovation in an organization is contingent on important resources and capabilities such as technology (Hadjimanolis, 2000) and is a critical element in enhancing an organization's overall performance (Yunis, Tarhini, & Kassar, 2018). Some studies also contend that technological factor increases information flows both within and outside of firms by removing communication obstacles and enhancing the interconnection of corporate networks and development (Giannakis & Papadopoulos, 2016; Gonzálvez-Gallego et al., 2010). Hence, technology factor has been regarded in prior studies as a performance catalyst owing to its ability to enhance organizational speed (Vendrell-Herrero, Bustinza, & Opazo-Basaez, 2021). In their study, Tornatzky and Fleischer (1990) described the accessibility and features as elements of this context. While the features represent the internal factors that the organization uses in the adoption and implementation of technology, the accessibility elements enable providing factors that are appropriate for external technologies in the business economy (Zrzavy, 2020).

The organizational context is all about the features of the organization, such as organizational readiness, top management support, organizational structure, and so on. The environmental context entails those factors outside the organization in which the

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

organization operates, such as the industry, competitors, and regulation or legal policies by the government (AlSharji et al., 2018). The organizational context also refers to the aspects that are important to the organization. Additionally, organizations keep a close eye on the environmental element to determine the best moment to invest in a certain technology (Musawa & Wahab, 2012). In this context, Tornatzky and Fleischer (1990) describe the communication method, structured and unstructured mechanism, the organization size, and the flexibility of the organization as important elements in the innovation adoption.

Similarly, the environmental context is concerned with the factors that influence organizations in the adoption of innovation in the promotion of organizational performance. The determinants of business characteristics, such as market environment, operational infrastructure, and legal frameworks are elements of this context as described by Tornatzky and Fleischer (1990). TOE, according to Oliveira and Martins (2011), is a solid theoretical premise for studying the adoption of information system advancements. Prior research suggests that organizations' innovative strategies and performance are influenced by both internal and external environmental factors, which are relevant to the TOE framework (Messeni Petruzzelli, Albino, & Carbonara, 2009; Popa, Soto-Acosta, & Palacios-Marqués, 2022).

Also, studies have indicated that the creation and growth of competence are influenced by the external business environment (Messeni Petruzzelli et al., 2009; Teece, 2007). Erind (2015) also argued that the TOE theory is valuable for researchers and professionals because it allows them to gain knowledge about the adoption influence of a broad range of technological innovations. In this sense, an organization's

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

ability to adopt innovations may be dependent not only on the advancement of various internal competencies but also on the flexibility to respond quickly to external constraints such as business environment instability (Chan et al., 2016). Several studies have been conducted on the TOE framework since it has a robust theoretical foundation and solid empirical evidence (Chan, Chong, & Zhou, 2012; Hsu, Ray, & Li-Hsieh, 2014; Palacios-Marqués et al., 2015; Soto-Acosta et al., 2017). In line with some previous studies on the multi-dimensional TOE frameworks (Awotayo, 2020; Lian, Yen, & Wang, 2014; Oliveira & Martins, 2011; Zrzavy, 2020), this study adopts the TOE framework of Tornatzky and Fleischer (1990) to further enhance the understanding of technological innovation adoption.

As discussed earlier, the rationale for adopting the TOE framework in this study is the majority of firm-level IT adoption theories are variations of TOE framework which differentiates or expands its components. For instance, the Institutional Theory (Meyer & Rowan, 1977), which has already been incorporated in the TOE framework, emphasizes on the impact of environmental context on technology adoption. Likewise, the Diffusion of Innovation Theory (DOI) also incorporates technological and organizational elements; both of which are present in the TOE framework (Malik et al., 2021). Similarly, Sahin (2006) established that TOE framework is the most well-established theory for investigating new technology adoption at the organizational level.

As a result of these characteristics, many of the previous studies have adopted TOE framework to examine organizational adoption of various technologies, such as customer relationship management (San-Martín, Jiménez, & López-Catalán, 2016),

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

business-to-business (B2B) e-commerce (Baker, 2012; Lip-Sam & Hock-Eam, 2011; Teo, Ranganathan, & Dhaliwal, 2006) enterprise resource planning (ERP) (Awa, Ukoha, & Emecheta, 2016; Pan & Jang, 2008). Hence, TOE framework is considered a good fit for this study to investigate the nexus between technological factor, organizational factor, environmental factor, ABC implementation critical success factors, and organizational performance.

2.10.2.2 Resource-Based View Theory

Wernerfelt (1984) Resource-Based View (RBV) theory of the firm is universally recognized as one of the most extensively cited theories of strategic management, because of its empirical applicability to modern management practices. The theory was developed and became an influential and relevant theory underpinning organizational innovation literature. Wernerfelt (1984) argued that firm resources and products are the two elements of a firm in gaining a competitive advantage over the competitors. The theory was later developed as an analytical theory for development based on the usability of an organization's resources rather than its products (Awotayo, 2020).

The RBV postulates that firms would achieve competitive advantage through organizational distinct and inimitable approach to acquisition, development and effective deployment of physical, human, and organizational resources (Acar & Polin, 2015; Barney, 1991; Gupta & Mirchandani, 2018). The contribution of Barney (1991) was to see resources as a source of long-term competitive advantage. Resources, according to him, are "all assets, capabilities, organizational processes, firm qualities,

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

information, expertise, etc., possessed by a firm that enable the firm to think of and carry out plans that improve its efficiency" (Barney, 1991). In this study, RBV main focus is on the creation of value (mostly in enhancing SMEs' sustainable competitive advantage) using strategic resources of the firm.

In this study, information system/information technology, organizational structure, and ABC implementation critical success factors are seen as an internal firm resource, strategic and sustainable competitive advantage, and a driver of higher performance. Barney (1991) also stated that RBV's central principle is based on firm resources (IT innovation) which should be valuable, rare, inimitable, and non-substitutable which would further define the organizational competitive advantage. The existing connectivity between the firm resources in terms of technological competence and organizational strategy may lead to organizational leaders' understanding how great technological resources and capabilities enhances value creation (Awotayo, 2020).

Concerning ABC implementation critical success factors, RBV theory been adopted and applied to investigate and analyze the effect of information technology/information system on business organizational performance. The RBV centered its analysis and argument on the assumption that an organization's control over productive resources such as ABC adoption system is important for competitive advantage. ABC implementation critical success factors considers organizational internal resources and capabilities which can lead to enhancing performance. Technological competence is a representation of knowledge, abilities, creativity, and behaviors that an organization may assist build up, which is one of the main reasons behind the acceptance of RBV theory as an auxiliary theory that postulates this study

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

in boosting organizational performance. However, Oliveira and Martins (2011) argued that it is crucial to integrate several theoretical frameworks in order to acquire a thorough understanding of the adoption of IT.

2.11 Summary

In this chapter, a review of the previous literature related to SMEs performance, technology, environment, organization, and with a specific focus on MAIs (ABC) is conducted. The outcome of the reviews reveals that the three factors under examination in this study and the mediator are strong determinants of SMEs performance. Therefore, the review shows the existence of the relationships between technology, environment, organization, ABC implementation critical success factors, and the performance of SMEs. This chapter has also outlined the use of relevant theories, which include TOE framework and RBV theory. Understanding the variables that could affect the adoption of the ABC system has been made possible by the thorough analysis of management accounting innovations and ABC implementation critical success factors. The research approach used for this study is covered in the next chapter.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

CHAPTER 3

METHODOLOGY

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

3.1 Introduction

The research process, research philosophy, research design, study population, sampling method and sample size, unit of analysis, and pilot study are all presented in detail in this chapter. This chapter also covers the process of gathering data and the creation of the tools needed to carry out the study's goals. It gives some useful ethical considerations and supports the data analysis methods employed further. As a result, this chapter gives the foundation and framework for the research.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

3.2 Research Process

Jonker and Pennink (2010) suggest four steps to be followed in the conduct of research "from problem to answer" (p.32) comprising research paradigm, research methodology, research method, and research techniques. As illustrated in Figure 3.1, this study which examines the mediating effect of ABC implementation critical success factors on the relationship between the independent variables (technology, organization, and environment) and the dependent variable (SMEs performance) followed the research pyramid recommended by Jonker and Pennink (2010).

Figure 3.1

Research Pyramid (Jonker & Pennink, 2010).



05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

3.3 Research Philosophy/Paradigm of the Study

The term "research paradigm" simply refers to the researcher's worldview, which is reflected in their fundamental methodology (Jonker & Pennink, 2010; Mertens, 2019). The phrase "research philosophy" describes a collection of presumptions and attitudes towards the creation of knowledge.

As a result of the research questions, philosophical approaches enable the researcher to establish the approach that should be employed and the justification for doing the research. In research philosophy, there are key presumptions that outline the researcher's worldview. These presumptions can help in the choice of a research approach and associated techniques. The word "paradigm" is frequently used when combining several research methodologies. The different parts that make up these shared understandings—epistemology, ontology, and methodology—are all interconnected.

On the nature of reality in the study, the ontological premise is built. The philosophical examination of the nature of social reality and the ways in which different views of reality exist is a key component of social science research. Using this premise as a foundation, the researcher views the problems as though the world doesn't exist despite what you think about it. So, the methodological choice is influenced by the researcher's ontological perspective, which is based on whether the researcher observes an external, independent reality or an experienced, produced world from a social or personal human standpoint (Easterby-Smith, Thorpe, & Jackson, 2012; Saunders, Lewis, & Thornhill, 2009).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Since the researcher aims to find out the technological factor, organizational factor, environmental factor and SMEs performance in UAE, and ABC implementation critical success factors as a mediator, the researcher aims to collect, quantify and statistically measure the data to draw the conclusion of the study. Objectivism view sees the phenomenon which is being studied as physical and measurable. Thus, the researcher uses the objectivist ontology for the research. The subjectivism focuses more on achieving qualitative interpretations of the phenomenon; therefore, it is not suitable for the research study.

The study's epistemological premise is based on what we take to be true. It can also be explained in terms of how knowledge is acquired and how it is accounted for. Because the researcher himself is focused on discovering new information, the epistemological perspective of the researcher is therefore focus on the methodological choice based on the objectives and goals. The technique used determines how knowledge is generated, and the degree to which a methodology is followed over time determines how successfully new knowledge is acquired.

The number of different research epistemologies provide the researcher with ample choice in selecting methods as compared to other disciplines. Nonetheless, it is crucial to consider the implications of various epistemological assumptions related to the choice of methods and the significance and limitations of consequent research outcomes. Within this perspective, the succeeding research outcomes are probably taken as objective or subjective. McNeill and Nicholas (2019) also tried to define epistemological view as concerned with the assessment of the contexts, chances, nature, and restrictions of individual knowledge; consequently, the criteria must be considered

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

to form and assess knowledge. The analysis of the phenomenon of technological factor, organizational factor, environmental factor and SMEs performance is conducted with the fundamental epistemological assumption. As shown by Saunders et al. (2009), different epistemological assumptions can be considered in a research study. However, the researcher discussed only a few of them including positivism, interpretivism, and realism.

Positivism is a crucial epistemological tenet that rejects subjective reality and traditional approaches to truth-seeking in favor of the idea that there is an objective reality. Positive research is predicated on the existence of a past fixed relationship within phenomena that are investigated using a structured research method. Positive research make mostly objective assumptions, measurable empirically, and the subject must be independent of the objectivity. Studies that follow a positivist stance may include hypotheses development and theory testing, with an emphasis on making predictions and providing generalized results.

A prior study emphasized that interpretivism places a strong emphasis on the need to contextualize analysis. This research philosophy is linked to the idea that the universe is a subjective construct and that human experiences are also subjective. The interpretivist approach makes use of meaning-oriented techniques, such as interviews or observations, which rely on the researcher's subjective relationship with the participants. This kind of research stresses the full complexity of people's sense-making as the environment emerges rather than defining dependent and independent variables first. This is referred to as the interpretive position, which concentrates on elucidating the arbitrary motivations and interpretations underlying the social activity.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

When applied to the positivist or interpretivist approach, the critical realism is not seen as a distinct option but as an additional strategy that results in the critical positivist or interpretivist strategy. This viewpoint examines issues like power, control, issue, and contradiction while situating the phenomenon in a much larger context. In addition, critical realism assumes that social realities are influenced by external factors and are biased, whereby such an issue of subjectivity is characterized in a human condition. Therefore, investigators conduct the research by declaring the number of biases. This analyzes exploitative conditions that restrict individuals on the edge from forming to the complete potential by inclining to changes to the limited and unusual present conditions, and ultimately, to motivate liberation and modification of unusual people.

In the past few years, studies related to technological factor, organizational factor, environmental factor and SMEs performance have been dominated by the positivist paradigm. A prior study showed that the significant number of studies in the technological factor, organizational factor, environmental factor and SMEs performance use a positivist approach because of the focus on the relationship between the variables. Positivist studies have been taken as a crucial strand for organizational behavior studies since it helps the organizational behavior researchers achieve insights into which factors have an important contribution in increasing the level of SMEs performance.

The positivist paradigm is seen to be particularly useful in the study since the objective components can be adequately comprehended with the aid of theories and related variables that evaluate predictive hypotheses. The positivist viewpoint adopts

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

the stance that factual knowledge obtained by measuring of observation is trustworthy in this regard. In order to statistically assess the relationship between technological component, organizational factor, environmental factor, and SMEs performance, the researcher is thus adopting a positivist method.

The stage presupposes the preliminary analysis of the situation in the UAE. This is accomplished through the application of the concepts determined in the literature review and their application to the object of research. Next, the research includes a stage of planning and conducting a study amongst the UAE SMEs in an attempt to either confirm or disprove the initial impression. If the situation is found unsatisfactory in the process of analysis, then one must develop recommendations to improve and change the unsatisfactory results. Thus, this study is to be fitted with an in-depth discussion about the results and the steps one must take to improve performance of SMEs. Table 3.1 below shows the summary of the philosophical stance of the study.

Table 3.1

Comparison of the Three Dominant Paradigms

Basic Beliefs	**Positivism/ Post-positivism**	**Interpretivism/ Constructivism**	**Mixed Method/ Pragmatic**
Axiology (nature of ethical behavior)	Respect privacy; informed consent; minimize harm (beneficence); justice/equal opportunity	Balanced representation of views; raising participants' awareness; community rapport	Gain knowledge in pursuit of desired ends as influenced by the researcher's values and politics

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Basic Beliefs	Positivism/ Post-positivism	Interpretivism/ Constructivism	Mixed Method/ Pragmatic
Ontology (nature of reality)	One reality; knowable within a specified level of probability	Multiple, socially constructed realities	Asserts that there is a single reality and that all individuals have their own unique interpretation of reality
Epistemology (nature of knowledge; relation between knower and would-be)	Objectivity is important; the researcher manipulates and observes in a dispassionate, objective manner	Interactive link between researcher and participants; values are made explicit; created findings	Relationships in research are determined by what the researcher deems as appropriate to that particular study
Methodology (approach to systematic inquiry)	Quantitative (primarily); interventionist; decontextualized	Qualitative (primarily); hermeneutical; dialectical; contextual factors are described	Match methods to specific questions and purposes of research; mixed methods can be used as researcher works back and forth between various approaches

(Adapted from Mertens (2019))

Arising from this discussion, this study which examines the mediating role of ABC implementation critical success factors on the relationships between technology, organization, and environment, and the SMEs performance adopted a positivist philosophy and quantitative research approach. This is because the study is based on an empirical stand thereby evaluating relationships between variables, and requires the

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

researcher to be independent and distinct from the research being conducted to make an objective judgment (Cavana, Delahaye, & Sekeran, 2001). This study collected information from the SMEs in UAE. The researcher detached himself in the data collection process to avoid influencing the respondents in accordance with the positivist philosophy. Based on this, this study applied all the positivist philosophical assumptions comprising the epistemological, ontological, axiological, rhetorical, and methodological assumptions. The researcher was independent and did not affect the opinion of the respondents (epistemological), the study was objective in nature (ontological), the process of the study was empirical and deductive (methodological), the researcher was unbiased and value-free (axiological), and the study adopted a formal language (rhetorical).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

3.4 Research Design

The research design is the overall strategy, procedure, technique, or plan for how the researcher intends to carry out his study (Avwokeni, 2010; Bukve, 2019; Kumar, 2018). It entails meticulous planning of the research methods to be applied at different levels of a study, taking into account the objectives of the investigation as well as the resources and time available for the study (Sahu, 2013). The most accurate phrase for it is the "snapshot" (Gray, 2016) or "one-shot" (Sekaran & Bougie, 2016) technique, in which information or data are captured at a single instant in time. A research design is a fundamental approach that directs a study's phases of data collection and analysis. It provides the framework for the study that aids in outlining the kinds of data that must

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

be gathered, the sources to be used, and the data gathering procedure (Aaker, Kumar, & Day, 2000).

Since this study involved the collection of data primarily from the owners and operators of SMEs, a cross-sectional research design and a survey method was employed. A cross-sectional design deals with collecting the data from multiple units once or at a single point in time over days, weeks, or months (Bukve, 2019; Sekaran & Bougie, 2016; Zikmund et al., 2013) to meet the research objectives. According to Melnikovas (2018), there are three types of research designs used in research studies: a descriptive research design, an exploratory research design, and an explanatory research design. He stated that this classification is determined by the objectives of the study area, as each research design has a different end goal.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Exploratory research is a type of a research design that is conducted to solve a research problem when very limited or no research is conducted to refer to or rely on predicting the result. The major emphasis of exploratory research is to gain understanding and insights for future studies when the issue is in an initial phase of research. Exploratory research is sometimes used to form an insight into how effective is to continue studying the problem or what methodology is the best to use to collect data regarding the problem. The major objectives of the exploratory study are centered on generating the best possible outcomes which include understanding the fundamental details, context, and concerns, a proper established snapshot of the situation aim to be formed, formation of the latest ideas, presumptions, and possible theories or propositions, as well as determining if the research is going to be feasible to be conducted in the future.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Descriptive research designs assist in focusing on the questions, such as what, where, who, when, and how that are related to the specific research problems. Descriptive is suitable for the current study as compared to explanatory and exploratory. However, descriptive research cannot provide answers to why related research problems. When a specific phenomenon is being studied, the research needs to define, clarify, and describe the inner relationships and properties. The descriptive study shows the characteristics of people, events, or contexts. It defines questions, individual examination, and the analysis method before starting to collect the data (Shields, 1995). In other words, a descriptive study provides several aspects that form the overall research which enables the researcher to make any changes needed before starting to collect the data.

Explanatory research, which is also referred to as a causal study, is carried out to find out the level and nature of cause-and-effect relationships. The explanatory study can be carried out for evaluating the impacts of particular changes on different procedures or current norms, etc. Explanatory research focuses on the examination of a situation or a particular issue to describe the level of relationships that exist between variables (Kothari, 2004). The most common method of data collection in causal studies are experiments and the existence of cause-and-effect relationships can be validated only if a particular causal indication or proof is there.

The major advantage of causal studies is that they have a huge role in finding out the reasons behind a huge array of processes and evaluating the influences of changes on current processes or norms, etc. Causal research gives the advantage of replication if there is a need. Such type of research is linked with huge extents of

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

internal validity because of the systematic choice of subjects. However, in some cases, with the establishment of correlation between two variables, finding out which variable is a cause and which one is the effect is sometimes very challenging to determine. The study is mainly descriptive because this type of research design extends more theories and attempts to explain different aspects of a phenomenon.

It is found appropriate in this study because it is capable of revealing the relationships among variables (Gray, 2016). In order words, a cross-sectional design assists in achieving the objectives of this study and answering the research questions by creating an avenue for the assessment of the relationship between the independent variables of this study (technology, organization, environment), mediating variable (ABC implementation critical success factors), and the dependent variable (SMEs performance).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

3.5 Research Approach

The research approach is known as the plans and procedures for the study that include stages from wider assumptions, comprehensive methods of data collection, analysis and interpretation. Such a plan includes different choices and these decisions include which approach is feasible to solve the research problem. The method used by scholars to bridge the gap between assumptions and conclusions is referred to as the research approach. Deductive and inductive reasonings are the two approaches used in management and organizational research.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

The deductive approach is an important reasoning method in social science research that has been majorly connected with logical positivism. Most purely, the deductive approach is linked with a hypothetical-deductive approach (Saunders et al., 2009). This includes generating different hypotheses regarding a phenomenon that is based on practical or theoretical knowledge. The hypothesis is then evaluated under experiments. This method flows from general to more specific, and it is often known as a top-down approach. The researcher starts by developing an existing theory on the topic. It is then narrowed down to develop different hypotheses that can be tested by using any method. It is further narrowed down when the observations are collected to test the developed hypothesis. Consequently, a researcher can test the hypotheses made for the research and confirm the applicability of the existing theories.

The inductive approach, which is also referred to as the inductive reasoning method, begins with observations. Based on these observations, theories are provided at the end of research procedures (Saunders et al., 2009). The inductive approach includes finding patterns from the observations and the formation of explanations and theories for such patterns with the help of several hypotheses. There are no such theories or hypotheses that can be applied in this approach from the beginning of the study and the researcher is independent from changing the course of the research after the beginning of the research procedure.

The inductive approach intends to provide interpretations of the data set collected for finding out patterns or relationships to form a theory. Nonetheless, this approach does not stop the investigator from using an already established theory to make research questions that need to be answered. This reasoning method is actually

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

based on learning from experience. Different patterns in premises are observed to draw a conclusion or develop a theory (Saunders et al., 2009). Table 3.2 shows the stages followed in an inductive research approach.

Table.3.2

Difference between the Deductive and Inductive Approach

	Deductive Approach	**Inductive Approach**
Logic	In this approach, if premises are true, then the conclusion is also considered true.	In this approach, known premises are used to produce unproven conclusion.
Generalizability	Flow from general to specific	Flow from specific to general
Use of Data	Data collection is used to analyze hypotheses or test the theory	Data collection is used to determine a phenomenon, find themes, and develop the conceptual framework.
Theory	Theory acceptance or rejection	Theory generation
Availability of literature	Abundance	Limited
Time availability	Short time	No shortage of time

In the present study, when considering the aspects of both deductive and inductive approaches and making a comparison between the characteristics underpinning the approach of the present study, it is apparent that the present study applies the deductive approach of reasoning. As the study aims to provide causal relationships between TOE and SMEs performance, thus the deductive reasoning method is the suitable one for the research. Moreover, the researcher intends to measure

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

the concepts of the research quantitatively and provide the generalized results regarding the TOE and SMEs performance in UAE, which means that a deductive reasoning method is the most suitable. Most importantly, the research follows positivist philosophy which is founded on the concept that reality is free from research, yet the major goal is to accept or reject theories based on empirical studies. The hypotheses are already established by reviewing different studies. The researcher thus uses a deductive approach, and the hypotheses are tested by following different statistical methods and accepting or rejecting the hypotheses based on the findings of the study.

3.6 Research Strategy

The research strategy refers to the plan of action that provides guidance to the researcher's efforts, allowing the investigator to carry out a study in a systematic manner instead in a haphazard manner. Blaikie and Priest (2017) stated that a research strategy is a way where different questions of the research related to what, why, and how of the research questions are catered, contributing to the fact that a research strategy needs to be determined earlier so that the investigator is very clear regarding the methods of data collected and selected source to collect the data. Researchers have decided on suitable methodology into account as a crucial aspect of research. More specifically, the research strategy provides the actual direction of the study which includes the procedures by which the overall study is carried out. It is also known as the general plan by which the investigator will make a strategy to acknowledge the questions of the research or a general orientation to carry out the study (Saunders et al., 2009).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

A quantitative survey research strategy employs questionnaires with numerically rated options, whereas a qualitative survey research strategy employs open-ended questions. Survey research is useful for reporting existing conditions, different aspects of a population, and different people's perspectives. Survey research is an important method used in measurement processes that include asking various questions of respondents. Survey research has been explained in various ways by researchers. Survey research is a method of discovering and describing practical phenomena. Survey research evolved from social surveys conducted by social reformers to collect data on poverty and working-class people. As an important part of survey research, the investigator employs the questionnaire method to facilitate answering questions and taking into account the various samples to be examined. In quantitative studies in business and management research, survey research is commonly used.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

In this study, the survey strategy was used because it is associated with the deductive research approach in social sciences. As a result, the survey strategy is best suited to the current study, which used a deductive research approach. The survey research strategy is carried out by collecting data from a large sample population via the responses they provide to questions about the topic under investigation, ensuring the generalizability of the findings. When compared to other research strategies, the collection of large data in the survey strategy is usually more cost-effective. The survey strategy also allows for the collection of standardized data, which allows for easy comparisons of observations (Saunders et al., 2009). In addition, the survey strategy is appropriate for exploratory and descriptive research in nature. As a result, the survey research strategy is the most applicable to the current study.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

The survey research strategy was carried out using questionnaires. Questionnaires are data collection tools that ask questions about the topic's hypotheses (Bee & Murdoch-Eaton, 2016). Questionnaires can be distributed to the respondents via mail, internet programs such as SurveyMonkey, or emails. The purpose of this study is to investigate the relationship between organizational factor, technology factor, environmental factor, and SMEs performance and the mediating effect of ABC implementation critical success factors. Given the research's objectives and needs, the researcher used the survey research as a research method. The researcher conducted an owners/managers' survey to learn about their thoughts on the organizational factor, technology factor, environmental factor, and SMEs performance. This will assist the researcher in reaching a broad conclusion about the topic under consideration.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

3.7 Research Choice

The researcher has primarily three options for conducting a study: quantitative research, qualitative research, and mixed-method research. Mixed-method research incorporates some aspects of quantitative research and some elements of qualitative research.

Quantitative research is one of the research methods that refers to the systematic investigation of phenomena through the collection of quantifiable data that can be analyzed numerically, mathematically, or statistically. It is concerned with numbers or anything that can be measured in a systematic study of phenomena and their relationships. When conducting quantitative research, the researcher addresses questions about the relationships between quantifiable variables to describe, predict, or

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

regulate a phenomenon. The quantitative research process begins with the formulation of hypotheses and concludes with their acceptance or rejection. Researchers who use quantitative research identify various variables to include in the study and then collect data while keeping the variables of the study in mind. A quantitative study typically begins with data collection while keeping the hypothesis or the theory in mind, and then the researcher employs various analytical methods to analyze the relationships between the variables. When conducting quantitative research, the common strategies are surveys and observations.

In contrast to quantitative research, qualitative research is important in explaining multiple realities, developing theories, and capturing daily life. According to the literature review, qualitative research methods attempt to comprehend and interpret specific phenomena using meanings that individuals assign to them, thereby creating an understanding of the context and its impact on the surrounding environment. Qualitative research employs inductive reasoning with specific examples to achieve complete generalizability and includes the collection of textual, visual, or audio data to interpret the meaning from them and draw conclusions. Researchers explain qualitative research as subjective since it includes interpretations, experiences, and explanations. In addition, this method is generally unstructured and open as it enables generalization and validation with the help of verification. Data collection in qualitative research is a social interaction that includes the researcher and respondents and they are examined with the help of different research designs i.e., descriptive, exploratory, or causal studies.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

The phenomenon of organizational factor, technology factor, and environmental factor is not new and numerous studies have already been conducted on this topic. The majority of the studies have employed a quantitative research method to discover the phenomenon of organizational factor, technology factor, and environmental factor in different contexts. The present study aimed to investigate the organizational factor, technology factor, and environmental factor on SMEs performance; thus, a larger sample is required to collect the data from the SMEs in UAE. That is, quantitative research is used in the study. The researcher coded different variables of the study numerically and tested them statistically.

As explained earlier, the researcher adopted the positivist approach since it allows testing the hypotheses and theory. The research also included a deductive reasoning method which begins with adopting theories and testing these theories and hypotheses for making conclusions, thus, accepting or rejecting a theory to provide generalized results. Consequently, the researcher used the quantitative research method which is used when the researcher addresses questions related to the relationships between quantifiable variables with an aim to describe, predict, or regulate a phenomenon. Therefore, quantitative research will have a major role in testing the conceptual framework of organizational factor, technology factor, and environmental factor on SMEs performance. The research then identifies and develops appropriate research methods and collect data with the help of questionnaires. This study investigated the proposed relationships by using a quantitative approach which allows the researcher to generalize the findings of the study, which is the key drawback of the qualitative approach.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

3.8 Population of the Study

The entirety of the elements, people, events, or interesting objects that the researcher plans to explore are referred to as the population of a study (Sekaran & Bougie, 2003). It is the total entities qualified to be included in the study. In other words, it comprises all individuals of interest to the researcher. Arising from these definitions, the population of this study comprises all SMEs in Dubai and Abu Dhabi. Based on the statistical information available in the SME report of Dubai published in 2019 (Ministry of Economy, 2019), the total number of SMEs reached 157,500, while he total number of SMEs in Abu Dhabi is 112,000. Thus, the total number of SMEs in both Dubai and Abu Dhabi is 269,500, making the population of this study. The justification for the choice of Dubai and Abu Dhabi is because these cities host the largest number of SMEs in UAE as earlier indicated in Figure 2.1. This decision is, therefore, consistent with the recommendation of Soh and Martinov-Bennie (2011) that an appropriate set of individuals or entities that will be able to provide answers to the research questions should serve as the targeted population of a study.

3.9 Sample Size

Sample size refers to the number of individuals or elements selected from a larger population to participate in a research study. It represents the size of the group that intends to study and collect data. In most cases, it is difficult to cover the entire population because of cost, time, and other resource constraints. Consequently, scholars recommend the use of a representative sample. A sample is a portion or a subset of the

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

population selected for a study (Goddard & Melville, 2004). Based on this, this study selected samples from the population of SMEs in Dubai and Abu Dhabi. Scholars have recommended different methods of determining the sample size, such as Krejcie and Morgan (1970) and G*power (Hair et al., 2014). Based on the method that produces the highest number of sample size, this study employed Krejcie and Morgan's (1970) technique of generating the sample. Since the population of the SMEs in this study is 269,500, the sample size depicted in Table 3.3 is 384. Arising from this, this study selected a sample size of 384 from Dubai and Abu Dhabi.

Table 3.3

Sample Size Determination

N	***S***	***N***	***S***	***N***	***S***
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

N	***S***	***N***	***S***	***N***	***S***
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	**1000000**	**384**

Note. —*N* is population size. *S* is sample size

Source: Krejcie & Morgan (1970)

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

3.10 Sampling Technique

Sampling is a crucial research technique that enables researchers to include data about the population based on findings from a small sample of the population that can accurately reflect the entire population. Sampling enables the researcher to include important subsets of the population without the need to research every single individual from the population. Decreasing the number of respondents in research also reduces the cost and workload in research and may make it simple to achieve quality data, but this needs to be balanced against a large sample size with proper power to find a true connection.

The process of selecting a sample from the population is known as the sampling procedure (Gravetter & Forzano, 2018). A good sample should be representative, meaning that each person in the population should have an equal probability of being chosen for it. The three main categories of sampling techniques in the literature are probability, non-probability, and mixed method sampling techniques (Gray, 2016; Kumar, 2018). Every person in the population has an equal chance of getting chosen when using probability sampling. It includes stratified random sampling, clustered sampling, systematic sampling, and basic random sampling (Mertens, 2019; Sekaran & Bougie, 2010).

In contrast, every person of the population does not have an equal chance of being selected for the sample when using a non-probability sampling technique. It includes convenient, quota-based, and subjective sampling techniques (Kothari, 2004; Moore et al., 2016). The sample for this study was drawn from the population using a

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

probability sampling technique, specifically stratified random sampling technique. This implies that some managers of SMEs were randomly selected from Dubai and Abu Dhabi as respondents to represent the entire population. This approach avoided the issue of bias in the selection because every member of the population has an equal chance of being chosen as the representative of the population.

The current study collected data from Dubai and Abu Dhabi. There are 269,500 SMEs operated in UAE at the end of 2019 as reported in Figure 2.1. Dubai exhibits a relatively greater prevalence of SMEs in comparison to Abu Dhabi. The business climate, infrastructure, and economic policies in Dubai have proven to be highly appealing to a considerable number of firms, particularly SMEs, spanning across diverse sectors. It is imperative to acknowledge that the commercial environment is subject to dynamic transformations, hence causing variations in the quantity of SMEs throughout different emirates. These fluctuations can be attributed to economic circumstances, governmental regulations, and various other determinants. As this study collected data by using stratified sampling technique, two strata were formed based on Dubai and Abu Dhabi. As Dubai has a greater number of SMEs, the population is higher in Dubai as compared to Abu Dhabi, hence, a greater number of questionnaires were distributed randomly in Dubai as compared to Abu Dhabi in order to increase the representativeness of the sample. The population of Dubai is 157,500 and population of Abu Dhabi is 112,000. Thus, based on the representation of the population. A total of 58.44% of the questionnaires were distributed in Dubai while 41.56% were distributed in Abu Dhabi. In total, 224 questionnaires were distributed in Dubai and 160 questionnaires were distributed in Abu Dhabi. The detail of sample proportion is given in Table 3.4.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Table 3.4

Proportion of Sample

Sr. No.	City	Population	Percentage	Questionnaires For Distribution
1	Dubai	157,500	58.44%	224
2	Abu Dhabi	112,000	41.56%	160
Total		269,500	100%	384

3.10.1 Sampling Approach

The sampling approach or techniques are employed by researchers to choose samples from large groups of people. Barnes, Grove, and Burns (2003) define sampling as the process of selecting a group of individuals, occasions, or behaviors. Using sampling methods is done to cut back on time and costs (Zikmund et al., 2013). The two primary categories of alternative sampling approaches are probability sampling techniques and nonprobability sampling techniques (Zikmund et al., 2013).

Every member of a population has an equal chance of being chosen for or included in the sample being studied when using a probability sampling technique. The foundation of probability sampling is the idea of controllable random selection, ensuring that each population element has a known non-zero chance of being chosen. Simple random sampling, systematic sampling, stratified sampling, cluster sampling, and multi-stage sampling are some of the probability sampling approaches. In contrast, non-probability sampling approaches, according to Sekaran and Bougie (2016), occur

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

when the respondents of a study have no way of knowing if they will be chosen as sample subjects. In other words, chance rather than a random method is used to choose a sample in non-probability sampling. Many methods, including judgment sampling, convenience sampling, purposive sampling, snowball sampling, and quota sampling, are included in a nonprobability sampling (Zikmund et al., 2013).

The present study adopted stratified sampling and simple random technique since the study included the samples from two different entities of Abu Dhabi and Dubai that have different mandates in providing services to people of Abu Dhabi and also involve large population. A stratified sampling technique was deemed fit for this study because the technique would ensure equal distribution among the sampled SMEs and also take care of any sample bias. Some explanations underly the adoption of the stratified sampling technique, whereby each SMEs in those areas is considered as a stratum which will further enhance the validity and reliability of the results. Large population (Cooper & Zmud, 1990), homogeneity within the group and heterogeneity across the groups of the population (Cooper & Zmud, 1990), and unavailability of enough resources (time and money) for the researchers (Zikmund et al., 2013).

In the case of this study, the adoption of a stratified sampling technique is due to the notion of being unbiassed as the collection of data is from different government entities with a different number of SMEs along with a large population. In addition, the stratified sampling technique is suitable for this study because this approach divided the study's targeted population into strata (i.e. smaller groups) premised on common characteristics. This approach makes it possible for each stratum to be proportional in

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

size to the population so that the sample to a great extent highly represents the population under study and that the statistical findings are valid.

Homogeneity exists within the SMEs operators of the sample in Dubai and Abu Dhabi, and heterogeneity exists among the owners/managers of Abu Dhabi who belong to different sectors/industry. The researcher also has limitations in terms of time and money. Hence, for this investigation, a stratified sampling strategy is adequate and suitable. Also, the technique is more applicable when some strata are expected to have unequal variability or when some strata appear to be too small or large (Cavana et al., 2001).

A stratified sampling methodology entails a number of phases that start with defining the population and end with a stratified sample procedure. In particular, because the study wants to apply its findings to the entire population, the use of the probability sampling method and simple random sampling technique is justified.

3.11 Unit of Analysis

The level of aggregation of the data gathered during the subsequent data analysis step is referred to as the unit of analysis (Sekaran & Bougie, 2016). The unit of analysis is categorized as individuals, dyads, groups, organizations, or cultures based on the issue statement (Sekaran & Bougie, 2016). For instance, if the problem statement emphasizes each individual data source, each individual data source is designated as the unit of analysis (Sekaran & Bougie, 2016). Also, the analysis's unit specifies who or what

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

should supply the data and at what level of aggregation (Sekaran & Bougie, 2010; Zikmund et al., 2013). This study collected data from the SMEs' owners/managers in the UAE, specifically in Dubai and Abu Dhabi. These managers/managers are considered as the representatives of the SMEs. Hence, the unit of analysis of this study is organization which is also reflected from the scale items to measure the variables. In other words, the information obtained from the individual owners/managers regarding the SMEs formed the basis of the analysis.

3.12 Method of Data Collection

The instrument for data collection in this study depended on using a questionnaire. The major benefit of a questionnaire is that it is flexible in data collection for different types of research as well as cost-effective method. Most importantly, this technique of data collection enables the researcher to include larger sample size in the research which further increases the generalizability of the study.

An online questionnaire was used to collect the data from the respondents in this study. Employing the online data collection method aids in eliminating the problem associated with missing data which is predominant in the self-administered survey instrument. The email address of the owners/managers were taken from the websites of various SMEs and online form was sent for data collection. Various other social media platforms were also used to share online form. This is the result of the features of the online data collection approach, whereby the respondents will not be able to proceed to the next page or submit the questionnaire form without filling all the required

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

questionnaire boxes. The respondents received thorough instructions on how to fill out the questionnaire. Respondents from SMEs without an ABC system deployment was not permitted to complete the questionnaires. Therefore, only those respondents whose SMEs had previously adopted the ABC system were allowed to fill in the questionnaire.

Furthermore, an online data collection procedure is common at present in social and management sciences studies due to the effect of COVID-19 pandemic which negatively affected face-to-face interaction following the social distancing policy and work-from-home policy implemented by various government organizations and business enterprises. Hence, it will be quite difficult for the researcher to follow the common traditional face-to-face meeting with SMEs' owner and or managers of the sampled sectors. Therefore, the current study adopted the online data collection procedure. The period of collecting the data commenced in the early month of May 2021 until the end of June 2021.

3.13 Questionnaire Design

The research questions on the study's variables and the respondents' profiles were divided into two portions of a survey questionnaire. The questionnaire can be created from scratch, modified from similar studies, or adopted from such studies and reframed to appropriately answer the study questions. The variables and measuring components or elements used in this analysis come from many investigations. A 5-point Likert scale was used to rate the measurement items for the endogenous, intervening/mediation, and external components. The Likert scale is one of the most widely used scales of

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

measurement in survey research because it is a unidimensional scale of measurement that ensures all items of the constructs measure the same thing. The study chooses to utilize a 5-point Likert scale since the responses gathered using this scale are not too biased. Studies have also shown that 5-point Likert scale is mostly preferable by academics.

3.14 Demographic Information

Information on demographics has a relevant effect on organizational behavior. It has been found that demographic variables, such as gender, age, and educational qualification have impacted employee behavior. Thus, the questionnaire included several questions regarding the demographic information of the respondents; this included gender, age, educational level, term of positions used, years of business experience, and business ownership structure.

3.15 Pre-Testing

Pre-testing is a trial survey with a group of respondents before the questionnaire is officially distributed to the targeted respondents. The purpose of conducting pre-testing is to assure that the respondents have genuinely understood the questions in the survey and detected the ambiguity of the questionnaire instructions and designs (Hunt, Sparkman Jr, & Wilcox, 1982; Sekaran & Bougie, 2016). The other reasons to conduct pre-testing are to find out the ways to improve or increase the interest of respondents,

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

increase the likelihood of respondents to complete the survey, assure that the questions are required by the researcher, and detect the problems of the question content, wording, and sequence as well (Cooper & Schindler, 2014). In short, pre-testing is to discover the way how to improve the entire quality of the survey.

To avoid exhausting the respondents required in the actual survey, a limited number of pre-test respondents are chosen (Cooper & Schindler, 2014). Hair et al. (2010a) also recommended a minimum of four or five respondents to be chosen for a pre-test. However, the chosen pre-test respondents are not eligible to take part in the actual study to avoid bias since they are already familiar with the questions. Thus, the pre-testing of the present study was conducted with five managers from SMEs who were omitted from the sample size in this study.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Five managers from SMEs in Dubai and Abu Dhabi were randomly chosen for the pre-testing. First, the managers were approached and informed about the intention of the pre-testing. Next, the managers who agreed to participate in the pre-testing were asked to read carefully and go through the questionnaire. Then, the managers were asked to provide feedback and comments. As a result, all of them commented that they understood the items well, and some comments and suggestions were given. The questions were used to gather feedback and suggestions from the pre-test respondents. Based on the suggestions and feedback, the necessary criteria of the questionnaire were revised to ensure clarity and consistency.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

3.16 Measurement of Variables

The measurements of the dependent, independent, and mediating variables are adapted from previous studies. The study adopted a five-point Likert scale questionnaire ranging from strongly disagree (1) to strongly agree (5) to obtain the opinion of the respondents on each of the variables. The dependent variables, the independent variables, and the mediating variable have a total number of seventy (70) items adapted from different previous studies (Ahmad et al., 2017; Chege et al., 2020; Lo et al., 2016). The items are contained in the subsequent subsections.

3.16.1 Dependent Variable – SMEs Performance

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

The dependent variable of this study is SMEs performance. The measurement for this variable is adapted from Lo et al. (2016). The measurement has forty (40) items as shown in Table 3.5.

Table 3.5

Measurement for SMEs Performance

S/N	Items
	Non-Financial Performance
1	We have more repeat sales in our enterprise
2	It is easy to see repeat clients in our enterprise
3	If a client trade with us at least once, he/she remains with us forever.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

S/N	Items Non-Financial Performance
4	Our enterprise ensures that customers´ product and/or service preferences are satisfied.
5	Our enterprise delivers products and/or services that are exactly what customers want
6	Our enterprise delivers products and/or services that exceed customers' expectations.
7	Our employees would be happy to make personal sacrifices if it is too important for the enterprise's well-being.
8	The bonds between our enterprise and our employees are strong.
9	Our employees have little or no commitment to this company.
10	Most of our employees like their jobs in this company
11	Most of our employees think their supervisor treats them well
12	Most of our employees do not intend to work for a different company.
13	Overall, our employees are quite satisfied with their jobs.
14	Our product development cycle time has been reduced.
15	Overall, our product development costs have been reduced.
16	Our project duration has been reduced.
17	Our enterprise has more open sharing of information with our customers.
18	Our enterprise has a more effective working relationship with our customers.
19	Our enterprise has an enhanced commitment to work with our customers in the future.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

S/N	Items
	Non-Financial Performance
20	Our enterprise has an overall more productive working relationship with our customers.
21	Our enterprise is fast in adopting process with the latest technological innovations.
22	Our enterprise uses up-to-date or new technology in the process.
23	Our enterprise has enough new products introduced to the market.
24	Our enterprise is able to produce products with novelty features.
25	It required a major learning effort or experience by customers to use our product.
26	It took a long time before customers could understand our product's full advantages.
27	The product/service concept was difficult for customers to evaluate or understand.
28	The quality of our products/services compares well with competitor's products
29	Our products/services are of higher quality than competing products/services
30	The quality of our current products/services compares well with others we have offered in the past.
31	Our enterprise generates a relatively higher return on assets than our competitors do.
32	Our business unit has a cost advantage compared to our major competitor.
33	Our company is highly effective in terms of capital investments.
34	The return on investment of our company has improved over the past three years.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

S/N	Items
	Non-Financial Performance
35	Our company has remarkable customer growth over the past three years.
36	The sales volume of our product offerings has increased over the past three years.
37	Our enterprise is more effective in opening up new markets or expanding existing markets than our competitors.
38	Our enterprise is able to change the market or lead customers' needs in new directions.
39	The profit of our company grew over the past three years.
40	Our company achieves higher profit margins, even when charging comparable prices than our major competitors.

Source: Lo et al. (2016)

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

3.16.2 Technological Factor

The items of this variable are adapted from Chege et al. (2020). The variable has nine items of measurement as contained in Table 3.6. In this study, the technological factors are described as promotion of business efficiency, enhance quick service to customers, access to the market information, better connectivity, user friendly applications and promotion of business performance.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Table 3.6

Measurement for Technological factor

S/N	Items
1	Technology promotes business efficiency.
2	Use of technology enhances quick service to customers.
3	Use of technology enables the firm to get market information.
4	New technology improves the existing business processes.
5	Some applications were replaced by a new system in the firm.
6	Availability of technology has increased business performance.
7	Is it easy to adopt new technology irrespective of new functionality.
7	Internet connectivity is available to the business if needed.
9	Technology applications are user-friendly.

Source: Chege and Wang (2020)

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

3.16.3 Organizational Factor

The measurement for this variable is adapted from Lo et al. (2016). It has seven indicators as contained in Table 3.7. In this study, the organizational factor is described as the use of new technologies, new ideas for process and products, promotion of innovative ideas by the employees, new solution of problems, tolerance on mistakes, promotion of good communication with customers and compensation to the employees based on their performance.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Table 3.7

Measurement for Organizational factor

S/N	Items
1	Owner of SME researches the new technologies, processes and product ideas.
2	SME owner actively seeks innovative ideas.
3	SME owner encourages innovation activities.
4	SME owner promotes the advantages of new solutions and ideas enthusiastically.
5	Mistakes regarding creative and innovative efforts of individuals are tolerated by the owner.
6	Our enterprise has developed a program to maintain good customer communication.
7	In our enterprise, people are rewarded in the proportion to the excellence of their job performance.

Source: Lo et al. (2016)

3.16.4 Environmental Factor

The items of measurement of this variable are also adapted from Chege and Wang (2020). The variable has four items as shown in Table 3.8.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Table 3.8

Measurement for Environmental factor

S/N	Items
1	Government regulations support SMEs.
2	Government makes available necessary infrastructure for the performance of SMEs.
3	Organization innovation and initiatives improve SMEs performance.
4	Our enterprise has a competitive advantage over its rivals.

Source: Chege et al. (2020)

3.16.5 ABC Implementation Critical Success Factors

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

The adoption of ABC system adoption among SMEs is adapted from a study by Ahmad et al. (2017). It has ten indicators as illustrated in Table 3.9. In this study, the ABC implementation critical success factors are described as the competitive product cost, competitive operating cost to reduce the price, information of cost, resources provided by the owner, use of competitive strategies, understanding of ABC mechanism, training activities, ABC implementation critical success factors acceptance and suitability for the employees to promote performance.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Table 3.9

Measurement for ABC implementation critical success factors

S/N	Items
1	Product line must be diverse and costs must be highly reliable to compete in our markets.
2	Operating cost data are extremely important because of our cost reduction efforts.
3	Cost information is the most important factor in pricing decisions.
4	ABC receives strong active support from the owner of SMEs
5	SME owners provide adequate resources to the ABC adoption effort.
6	Adoption of ABC is closely tied to the competitive strategies of the business unit.
7	Employees understand the ABC mechanisms.
8	Adequate training and employee productivity is used to measure performance of ABC.
9	ABC is well accepted by employees.
10	Employees feel comfortable with ABC.

Source: Ahmad et al. (2017)

3.17 Pilot Test

The main aim of conducting a pilot study is to evaluate the authenticity of the study measurements to affirm their consistency and accuracy and determine the reliability and validity of the measures before the final questionnaire is administered (Sekaran &

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Bougie, 2010; Zikmund et al., 2013). Hence, there is a need to carry out a pilot study before the main data collection for the study analysis. In other words, it represents a scale-down of the full-scale study or a trial conducted in lieu of the complete study. The pilot study's goal is to assess the quality of the measures to ensure consistency and accuracy, thus determining the measures' reliability and validity before the final questionnaire is distributed (Sekaran & Bougie, 2016; Zikmund et al., 2013). As a result, a pilot study must be conducted prior to data collection for the main study. The Cronbach alpha technique is the most widely used reliability testing method for determining the internal consistency and reliability of a social science study. According to Sekaran and Bougie (2003), the closer the consistency coefficient is to 1.00, the greater the reliability and consistency of the survey. However, Cronbach's alpha of 0.6 is considered acceptable but not optimal (Sekaran & Bougie, 2003).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Typically, the objective of a pilot study is to conduct a preliminary test on a small sample of the targeted respondents in which the findings of the test can help the researcher recognize the ambiguous items and then delete them before the main data collection is carried out. The main benefit of carrying out the pilot study is that it improves the likelihood of success in the final study. For the pilot study, the required sample size can be between 25 to 100 respondents (Cooper & Schindler, 2014). In this study, as recommended by Hair et al. (2010a) and Sekaran and Bougie (2003), the mechanism employed in conducting the pilot study began with face and content validity.

The most adopted and prominent methodology employed in testing reliability is Cronbach Alpha (CA) which shows the internal reliability and consistency of the

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

social science research. According to Sekaran and Bougie (2003), the closer the reliability and consistency coefficient is to 1.00, the greater the survey's reliability and consistency. If the value of CA is 0.6, it is acceptable but poor, whereas an CA value of 0.7 and above is considered appropriate (Sekaran & Bougie, 2003). A pilot analysis is usually performed on a small sample of the intended respondents, with the results of the test assisting the researcher in identifying vague items and deleting them before the main data collection begins. It is worthy stating that one of the biggest advantages of doing a pilot study is that it increases the chances of effectiveness in the final study. The appropriate sample size for the pilot study can range from 25 to 100 people (Cooper & Schindler, 2008).

Furthermore, Pallant (2010) stated that the pilot test should be conducted on a similar category of respondents who are targeted in the main study to ensure that criteria, questions, and scale items are transparent, thereby supporting the sampling component of the study's sampled respondents. Following that, a sample size of 30 SMEs were selected for the pilot study. The selected sample was those who have similar characteristics to the considered study sample used to explain clearly. Table 3.10 shows the result of the items of the constructs. One item (TF2) was removed from the items measuring technological factor and five items (PF2, PF8, PF18, PF19, PF29) were also removed from the items measuring organizational performance. The above-mentioned items were removed from their respective constructs because their CA values fell below the acceptable limit of 0.70 (Sekaran & Bougie, 2003). A higher alpha value shows higher internal reliability of the questionnaire and a value that is more than 0.70 is acceptable as satisfactory internal reliability (DeVon et al., 2007; Sekaran & Bougie, 2003). The Cronbach alpha values for each construct are reported in Table 3.10.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

By using Smart PLS 3.3 software and a PLS route modeling convergent and discriminant validity test, the pilot study process was concluded. Because the PLS Algorithm determines the average variance extracted and the composite reliability coefficients, it was estimated to acquire convergent and discriminant validity of the study's constructs. According to Hair, Ringle, and Sarstedt (2011), the composite reliability coefficient must be at least 0.70, while the AVE must be at least 0.5 (Fornell & Larcker, 1981). The following is shown in Table 3.10.

Table 3.10.

Pilot Internal Consistency and Convergent Validity (N=30)

Constructs	No. of Original Items	No. Deleted items	Alpha	CR	AVE
Organizational Factor	7	Nil	0.865	0.885	0.562
Technology Factor	9	1	0.927	0.921	0.675
Environmental Factor	4	Nil	0.753	0.852	0.551
ABC Implementation Critical Success Factors	10	Nil	0.916	0.954	0.594
SMEs Performance	40	5	0.952	0.973	0.567

Note: OF = Organizational Factor, TF = Technology Factor, EF = Environmental Factor, ABC = ABC implementation critical success factors, PERF = SMEs Performance.

The results of the pilot study are shown in Table 3.10; each latent construct's Cronbach Alpha value ranged from 0.753 to 0.952. Each latent construct's composite reliability coefficient, which ranged from 0.852 to 0.973, was higher than the threshold of 0.700. Overall, this shows that the measures utilized in this pilot study have

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

appropriate internal consistency and reliability (Hair et al., 2011). Similar to this, Table 3.10 demonstrates that the values of the average variances extracted (AVE) fell within the permissible range of 0.551 and 0.675.

3.18 Statistical Analysis

In this study, SPSS version 26 software was used to perform data screening and compute the descriptive statistics of the respondents. Besides that, this study is based on PLS-SEM to evaluate the measurement and structural model through the use of Smart PLS 3.3.3 software. PLS-SEM is a technique of second-generation multivariate. The measurement model and the structural model can be tested simultaneously to minimize error variance (Sang, Lee, & Lee, 2010). For example, PLS-SEM enables simultaneously in examining theories via the structural model and examining measures via the measurement model. Furthermore, the mediator can be tested simultaneously as part of the comprehensive through the bootstrapping function.

PLS-SEM was chosen as the primary data analysis technique to test the hypotheses in the present study which were discussed below. The research framework meets the prediction goals of PLS-SEM.

i. With small sample sizes and complex models, PLS-SEM operates efficiently.
ii. PLS-SEM does not presume multivariate normality, but when analyzing the structural model, it considers a measurement error.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

iii. PLS-SEM is a variance-based approach that enables to help in maximizing the variance explanation of the model.

iv. PLS-SEM might help reveal results that might not be discovered when multiple regression is used.

v. Other than that, the PLS-SEM model was evaluated and interpreted into two phases as below.

vi. The measurement model, which is an external model used to determine validity and reliability, is the first phase.

vii. The structural model, which is an internal model used to evaluate the collinearity, path coefficients, predictive accuracy, effect size, and predictive relevance, is the second phase.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

The data analysis for this study comprised both descriptive and inferential analyses. The descriptive analysis in this study was conducted using IBM SPSS Version 26. In addition to the descriptive analysis, the research data screening and preliminary analysis were conducted using the same analytical software. Further, the inferential analysis was conducted by employing a PLS-SEM approach using SmartPLS analysis software version 3.3.3. The choice of PLS-SEM is premised on the ground that the method is capable of predicting the relationship between two or more variables concurrently (Hair Jr et al., 2014b). Thus, the relationship between the independent variables (technological factor, organizational factor, environmental factor), the mediating variable (ABC implementation critical success factors) and the dependent variable (SMEs Performance) were determined at the same time. PLS-SEM is appropriate to analyze the latent constructs, especially the analysis of the causal relationship between latent constructs. PLS-SEM also overcomes the limitations of

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

first-generation techniques and allows researchers to test substantive/theoretical and measurement hypotheses against empirical data statistically (Chin, 1998). Besides, it provides simultaneously overall testing of model fit and individual parameter estimation tests, thus providing adequate fit for the data as the best model.

The inferential analysis for this study was carried out using SmartPLS 3.3 software in light of the aforementioned PLS-SEM facts. The inferential analysis was performed using SmartPLS version 3.3 software, which also tested the measurement model's internal consistency reliability, convergent validity, and discriminant validity (Hair et al., 2011; Reinartz, Haenlein, & Henseler, 2009), as well as the structural model, which includes a common bootstrapping procedure (Hair et al., 2011; Hair et al., 2012; Reinartz et al., 2009). The processes in the structural model analysis approach include testing the significance of the route coefficients (direct and indirect hypothesis testing), coefficient of determination (R2) values, effect size (f2), and predictive relevance (Q2) (Hair, Ringle, & Sarstedt, 2013). Testing mediation and moderation is also part of the inferential analysis assessed through the structural model evaluation. The finding of the aforementioned testing is provided in the subsequent chapter except for the data screening and preliminary analysis.

3.18.1 Data Screening and Preliminary Analysis

Before engaging in structural equation modelling, it is important to do preliminary evaluations of the study items (Hair Jr et al., 2014b). This will make it simpler to spot instances where multivariate data analysis techniques may have been improperly

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

applied. Thus, it is crucial to do a preliminary analysis prior to the final analysis in any multivariate analysis (Hair et al., 2007). Missing values, abnormal data, lack of normality, and the presence of multicollinearity were all checked for in the acquired data. Additional information is available in the following parts (Hair et al., 2010b; Tabachnick & Fidell, 2007). The following are the results of the preliminary analyses of the research data. The empirical data collected from the questionnaire had to undergo screening after collection. The goal of screening is to identify any gaps in information, unusual patterns, or key drivers of change. Screening also included a normality test and a review of the common method variance to guarantee reliable outcomes.

3.18.2 Missing Data Analysis

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Missing data typically happens when a respondent fails to respond consciously or unconsciously to a questionnaire or multiple questions. It is recommended to remove the respondent from the data file if the respondent does not answer more than 15% of the total number of questions on a questionnaire. It is also suggested to remove the respondent from the data file when a respondent fails to answer a series of questions which is from a particular construct even if the total missing data in the questionnaire does not more than15%.

However, by using the online data collection method, the missing data issue can be avoided because the respondents will be notified by the online system regarding the unanswered questions, and respondents are not allowed to submit the questionnaire if they do not answer a particular item. Thus, Google Form was employed in this study to

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

collect data from the respondents. Using Google Form can prevent the respondents either intentionally or unintentionally from failing to answer the questions, and it is a very cost-saving method.

3.18.3 Outlier

An outlier refers to a value that is substantially different from other responses, and it consequently can influence the results. An outlier can result from an entry error of data collection, exceptionally high or low values, and a combination of variables. Standard Statistical Software is a tool that can be used to identify outliers and has provided a multitude of univariate, bivariate or multivariate graphs and statistics. For example, IBM SPSS Statistics has an option called "Explore" that can be used to develop the stem-and-leaf plots and box plots to facilitate the identification of outliers (Sarstedt & Mooi, 2014). Outliers are recommended to be retained if there is a reason for the exceptionally low or high values as they might represent genuine responses from the population. As suggested by Hair et al. (2016) and Sarstedt and Mooi (2014), the researcher should run two types of analyses; one with outliers and another one without the outliers to make sure that there are just very few or extreme observations that do not significantly affect the results. If the reason indicates that outliers are most probably due to a data entry or a typing error, then it should be removed. Otherwise, outliers should be retained if there is no clear explanation. As a result, Standard Statistical Software was used to detect the outliers in the present study. If outliers are identified, the researcher must decide whether the outliers should be retained or removed based on

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

the explanations found. Furthermore, two times of analyses are run to view the influential results.

According to Hair et al. (2016), outliers are values with rare characteristics that differentiate them from other values. In other words, outliers are observations that appear uncommon in a dataset as a result of the wrongful data entry. In a regression analysis, outliers may have a negative impact on regression coefficient results, making the findings inaccurate. As a result, it is essential to look for any potential outliers in the dataset before moving on to the final or key data analysis. This study adopted Mahalanobis Distance (D2) in detecting outliers. The Mahalonis distance measures the distance relative to the centroid or a base or central point which can be thought of as an overall mean for multivariate data (Hadi & Simonoff, 1993; Hair Jr et al., 2014b). As the number of predictors in this study is four, which form the degree of freedom, the chis-square would be 13.28 at 10% significance level ($p<0.01$) (Tabachnick & Fidell, 2007). Based on this degree of freedom value, any case having Mahalanobis distance value greater than 13.28 ($df = 4$) at 10 percent significance level would be treated as an outlier and deleted.

3.18.4 Normality

PLS-SEM is a non-parametric statistical method that does not need normally distributed data. However, it is still crucial to ensure that the data collected are not extremely non-normal since extremely non-normal data will inflate the standard errors from

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

bootstrapping and consequently affect the path coefficients. There are two measures of distribution that can be used in testing normality, namely skewness, and kurtosis.

Skewness refers to the extent of a variable's distribution, whether it is symmetrical or not. The distribution is defined as skewed if the distribution of responses of a variable is stretched towards either the left or right tail of the distribution. When a distribution is skewed to the right, and the mean is higher than the mode, a positive skewness occurs. In contrast, a negative skewness occurs when a distribution is skewed to the left, and the mean is less than the mode. For the kurtosis, it is used to measure the peakedness or flatness of a distribution. For a negative value of kurtosis, it indicates a flatter distribution. However, a positive value of kurtosis will indicate as peaked distribution. To make sure that the data are a normal distribution, the skewness and kurtosis values should be in between -1 and +1. As a rule for the skewness, it is skewed distribution when the number is higher than +1 or lower than -1. For the general guideline of kurtosis, the distribution is too peaked when the number is higher than +1, while distribution is too flat when the number is less than -1.

For more preliminary analyses, the data were further subjected to a normality test. It is important that the data depict some form of normality. Although this study employed PLS-SEM and it has been established by prior studies that PLS-SEM provides an appropriate model estimation in situations with small samples and non-normal data distribution (Hair et al., 2011; Kock, 2016; Reinartz et al., 2009; Wetzels, Odekerken-Schröder, & Van Oppen, 2009). Hair et al. (2012) suggested that normality test of data should be conducted to better enhance the data authenticity and validity.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Thus, skewness and kurtosis statistics were used to check the normality of each individual item. Kurtosis assesses the peak or flatness of a distribution in comparison to a normal distribution, whereas skewness measures the symmetry of a distribution (Hair Jr et al., 2014a; Tabachnick & Fidell, 2007). Thus, the study used a statistical technique to verify the normalcy (Hair et al., 2010b; Tabachnick & Fidell, 2007). As opined by Kline (2023), the acceptable threshold value for skewness is -3 and +3 whereas that of Kurtosis is between -10 and +10 when employing SEM (Brown, 2015). However, values above the recommended values signify a non-normality problem.

3.18.5 Multicollinearity Test

Multicollinearity is a situation in which there is a strong correlation between two or more independent variables. The estimations of regression coefficients and their statistical significance tests can be greatly impacted by the presence of multicollinearity between the exogenous latent variables (Hair et al., 2007; Sekaran & Bougie, 2010). Particularly with multicollinearity, the coefficients' standard errors rise, making them statistically insignificant (Tabachnick & Fidell, 2007). The method of identifying multicollinearity includes two approaches, which are correlation matrix, and Variance Inflation Factor (VIF) and tolerance as suggested by Chatterjee and Yilmaz (1992) and Peng and Lai (2012). VIF and tolerance methods were adopted in this study. Lin (2008) described that, the VIF values for the study variables should be below 10, whereas Hair et al. (2011) later recommended 5 as the threshold value for VIF and 0.20 as the lowest value for the tolerance threshold.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

3.18.6 Non-Response Bias

Non-response bias is defined as "the error one expects to make in predicting a population characteristic based on a sample of survey data in which, due to non-response, certain types of survey respondents are under-represented," according to Berg (2010). As survey response rates decrease, academicians and researchers have become more adept at performing non-response bias checks (Brick & Williams, 2013). Although high response rates improve the robustness of a sample, non-response bias can also occur even with relatively high response rates (Groves & Peytcheva, 2008).

Furthermore, Pearl and Fairley (1985) and Sheikh and Mattingly (1981) stated that bias in the non-response rate is likely to be detected regardless of its size. Singer (2006) emphasized this point further and noted that there is no required minimum response rate at which a survey judgment must be biased. Likewise, there is no response rate in which a survey assessment is not biased. This shows that response bias could be possible with a low or higher response rate. Therefore, checking non-response bias becomes important in this study.

The extrapolation method of Armstrong and Overton (1977) was used to demonstrate the non-response bias. The comparison of the sampled respondents' early and late responses is a key component of this strategy. According to Armstrong and Overton (1977), a delayed response is equivalent to one that is not given at all. According to the chosen strategy, the survey participants were divided into two separate groups based on their responses. After distributing the questionnaires to the sampled respondents, the data collection period ran from early May 2021 through to end of June

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

2021. Some of the respondents started filling out the form right away, while others took their time. As a result, there are two types of survey responses, referred to as early responses and late responses.

3.18.7 Common Method Variance

One of the most popular techniques for determining the common method variance is Harman's single factor or single-factor (Podsakoff et al., 2003). All the variables used in the study were loaded to perform an exploratory factor analysis and test the unrotated factor solution in order to execute this test. If the factor analysis reveals just one component or if the majority of the covariance between the measures is explained by one general factor, it indicates that the common method bias is presented (Podsakoff et al., 2003). In other words, if there is no common method variance, it should not be a common single factor that constitutes most of the covariance between tests.

The common method variance (CMV), according to Podsakoff et al. (2003), is the variance that results from the measuring method as opposed to the study's constructs. CMV produces an incorrect internal consistency or an explicit correlation among constructs or variables that are all provided by the same sources (Chang, Van Witteloostuijn, & Eden, 2020). The common method variance is commonly used when self- report questionnaires were employed in collecting data from the same respondents at the same time. This problem is enhanced when both the independent and dependent constructs are indicators originating from the same participants (Podsakoff & Organ, 1986). As a result, the common method variance can lead to systematic measurement

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

errors that increase or dampen observed construct-to-construct relationships, thereby resulting in Type I and Type II errors (Chang et al., 2020; Conway & Lance, 2010).

3.19 Descriptive Statistics

Descriptive statistics were used to analyze the respondents' demographic profiles. To fully understand the respondents' demographics, the percentages, frequencies, means, and standard deviations of the demographic variables were calculated. In this study, gender, race, level of education, age, position, and period of working experience were used for the calculation. Besides that, descriptive statistics were used to explore the perception level for each of the study variables. Thus, the scores of mean and standard deviations were used to compute each of the study variables, such as organizational factor, technology factor, environmental factor, and SMEs performance.

3.19.1 Assessment of the Measurement Model

As stated previously, the measurement model was evaluated first, and the structural model was afterward. Validity and the reliability of each construct must be inspected to evaluate the measurement model. In fact, validity and reliability are always the two main criteria that need to be concerned to identify the goodness of measurements.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

3.19.1.1 Validity

The term "validity" refers to a set of measurements that accurately reflect the study's concept and are free from any non-random or systematic error (Hair et al., 2010b). To ensure that the measurements are accurate in this study, PLS-SEM was used to assess the construct validity. If a group of measured items is reflected in the theoretical latent construct is referred to as construct validity (Hair et al., 2010b). The most widely acknowledged types of validity, convergent validity and discriminant validity, are used to assess the construct validity. The degree to which a measure positively correlates with other measures of the same structure is known as convergent validity. The indicator's outer loading and the average variance extracted (AVE) are both utilized to assess the convergent validity. If the outer loading is at least 0.708 and the AVE is at least 0.50, convergence is achieved. The degree to which a construct is actually different from other constructs that are theoretically demonstrated to be different is referred to as discriminant validity.

It is implied that the Fornell-Larcker criterion approach should be used to evaluate discriminant validity. The correlation of the latent variable is contrasted with the square root of the AVE values. When the square root of the AVE of each construct is larger than the correlation of other constructs, discriminant validity is attained. However, the uses of Fornell-Lacker criterion have received argument in general research in determining discriminant validity. Therefore, another technique that uses a ratio of correlations called Heterotrait Monotrait (HTMT) to assess the discriminant validity is introduced. Henseler, Ringle, and Sarstedt (2015) state that researchers believed the HTMT ratio to be superior than other criteria like the Fornell-Lacker

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

criterion. To establish discriminant validity, the cut-off values of 0.85 (Kline, 2023) and 0.90 (Gold, Malhotra, & Segars, 2001) for the HTMT criterion are recommended. In the current study, the discriminant validity of the model was evaluated using a level of 0.90 cut-off value, such as the $HTMT_{0.9}$ criterion.

Furthermore, validity is the extent to which a measurement for a construct measures what is purported to measure (Gravetter & Forzano, 2018). In other words, it is the avoidance of systematic deviations of the results of a test from the true values (Eisend & Kuss, 2019). Prior to the administration of the questionnaire instrument, scholars consider the validity test of the instrument as essential and categorize validity into two comprising face and content validity (Mooi, Sarstedt, & Mooi-Reci, 2018). Expert validity, also known as face validity, is typically assessed using a sample of experts who discuss and concur on the level of face validity (Mooi et al., 2018). Contrarily, content validity refers to the appropriateness and completeness of the measurement tool in relation to the observed notion, and this is typically assessed by specialists (Eisend & Kuss, 2019).

Based on this discussion, this study makes use of the local and international experts for examining the research instrument and conducting a validity test on it. To achieve this, the research externalizes the validity request by sending it to the experts who are academics and professionals in the area of SMEs. The intended academic experts who conducted the face and content validity for the instrument was selected based on their expertise on SMEs. In the aspect of the professional experts, the SME owners with a good record of business success in UAE were identified and contacted

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

physically and through emails for review of the instrument. All the comments, additions, or subtractions from all the experts were collated to improve the instrument.

3.19.1.2 Reliability

Reliability refers to the instrument's consistency and stability in evaluating the concept and helps in assessing a better measurement (Sekaran & Bougie, 2016). Reliable instruments are robust because, under different circumstances, they can operate very well at different times. Cronbach's alpha is the most common internal consistency reliability measure. Cronbach' alpha is used to compute the average of intercorrelations among the items that measure the concept. The nearest is Cronbach's alpha to 1, the greater is the internal consistency reliability (Sekaran & Bougie, 2016). Cronbach's alpha assumes that all the indicators have the same outer loading on the construct, but for the PLS-SEM, it prioritizes the indicators according to individual reliability. Besides that, Cronbach's alpha is sensitive to the number of items in the scale, and it tends to underestimate the internal consistency reliability. Therefore, another measure of internal consistency reliability namely composite reliability requires to be applied to resolve the limitation of Cronbach's alpha.

Composite reliability is a measure that can encounter the different outer loading of the indicator variables. The composite reliability varies between 0 and 1, whereby the higher is the value, the higher level of reliability will be. When the value is below 0.60, it indicates that it is a lack of consistency reliability. Moreover, with the use of redundant items, it has adverse consequences for the validity of the measure content,

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

and it may increase the error term correlations. Therefore, it is encouraged to minimize the number of redundant indicators. Overall, Cronbach's alpha is a conservative measure of reliability that tends to have relatively low-reliability values. Further, composite reliability tends to overestimate the consistent internal reliability, which results in a comparatively higher estimation of reliability. The accurate reliability usually lies between an upper bound of composite reliability and a lower bound of Cronbach's alpha when analyzing and assessing the measures of internal consistency reliability.

Once the validity test was completed, the researcher then conducted the reliability test. Reliability refers to the stability or consistency of the results of the study. It is the ability of an instrument to maintain its quantity, quality, and perform the intended function adequately for a given period of time under the stated operating condition or environment (Bairagi & Munot, 2019). The reliability of an instrument can be achieved through test-retest technique (Mooi et al., 2018). This study conducted a reliability test making use of the pilot test.

3.19.2 Assessment of the Structural Model

The assessment of the measurement model should be conducted to make sure that the measurements used are reliable and valid to assess the structural model. In the structural model assessment, the collinearity between the exogenous variables is the first step to be examined. Next, it is followed by the significance of the path coefficients and the predictive accuracy model. The effect size is also evaluated to provide the needs for

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

researchers. Finally, the predictive relevance model is determined. A direct effect refers to the relationship between two constructs with a single arrow. While in the mediation model, an indirect effect refers to the relationship that involves a sequence of relationship with at least one intervening construct involved. An indirect effect is a series of two or more directs effects with multiple arrows in a model. It happens when a mediating variable is causally influenced by an independent variable, whereas a dependent variable is causally influenced by the mediating variable.

3.19.2.1 Collinearity Assessment

Collinearity exists when there is a strong correlation between two independent variables. When there is a strong correlation between an independent variable to a series of other independent variables, multicollinearity occurs. It is considered collinearity when the tolerance value is 0.20 or lower, and the variance inflation factor (VIF) value is five or higher. It is essential to assess collinearity to make sure that it is not at a critical level. However, the high collinearity level may lead substantially biased path coefficient. In the potential collinearity situation, the researcher should therefore consider deleting indicators, combining indicators into a single index, or constructing higher-order or second-order constructs to resolve the collinearity issues.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

3.19.2.2 Structural Model Path Coefficients

The structural model path coefficients are used to hypothesize the relationship between the variables in the study. The path (β) coefficients have standardized values which are in between -1 and +1 to figure out the hypothesis relationship, whether it is a positive or negative value. When the path coefficient has a value that is closer to +1, it indicates that the hypothesis has a strong positive relationship. With a value closer to -1, it shows that the hypothesis has a strong negative value, and with a value closer to 0, it indicates that the relationship is weaker or does not have any relationship among the variables. To determine whether a path coefficient is significant, a standard error obtained by bootstrapping is required. The bootstrap standard error can be used to compute the empirical t values and p values for all structural path coefficients. The calculation of t value is as follows:

$$\text{t value} = \frac{\beta \text{ coefficient}}{\text{standard error}}$$

To determine the path coefficients significance, the t values are used. When t value is greater than the critical value, the coefficient is significant at a specific error probability. The critical values that commonly used in one-tailed tests are 1.28 (significant level = 10%), 1.65 (significant level = 5%), and 2.33 (significant level = 1%). The critical values for two-tailed tests are 1.65 (significant level = 10%), 1.96 (significant level = 5%), and 2.57 (significant level = 1%). Hence, the predetermined significance level of 5% and 1% are used in this study because most of the researchers used p-value to assess significance level, therefore finding can be easier compared with

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

other studies. The obtained t value from the study was used to compare with the critical values. If the t value is higher than the critical values, it will be assumed significant.

3.19.2.3 Coefficient of Determination

To assess the predictive accuracy of the model in this study, the coefficient of determination (R^2) will be evaluated. R^2 is often utilized to evaluate the structural model. The R^2 is a measure of the predictive power model, and it is used to calculate as the square correlation between the predicted and actual values of a particular dependent variable. The R^2 also reflects the combination effect between the independent variables and a particular dependent variable. The value of R^2 ranges from 0 to 1. With a value that is closer to 1, it indicates a higher level of predictive accuracy. However, it is tough to provide rules of thumb for acceptable R^2 values since it depends on the sophistication of the model and the discipline of study.

The structural model evaluation also assesses the variance explained by each independent variable on the dependent variable. The coefficient of determination is commonly used to evaluate the structural model. The R^2 value which is also known as the coefficient of determination represents the degree of variation in the dependent variable which can be attributed to one or more predictor variable(s) (Elliott & Woodward, 2007; Hair et al., 2010b; Hair et al., 2007).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

3.19.2.4 Effect Size

An effect size (q^2) refers to the magnitude of the result found in the population from the study (Ellis, 2010). The f^2 is essential to interpret the results of the study. The f^2 enables the report of the result of the magnitude to practitioners, and it also assists practitioners to determine how important it is in practical significance. Thus, the f^2 is reported in this study to complete the reporting of practical significance and statistical significance for hypotheses testing. In this study, the f^2 is used to compute the direct effect relationship. The q^2 reports on the change in the R^2 value when a defined independent variable is removed from the research model which can be employed to evaluate whether the particular of an independent variable has an impact on the dependent variable. The guideline for small, medium, and large effects for f^2 values are 0.02, 0.15, and 0.35, respectively.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

3.19.2.5 Predictive Relevance

To obtain the predictive relevance (Q^2) values, blindfolding procedure is applied for a particular omission distance. Blindfolding is an iterative process that repeats until each data point has been omitted, and the model is re-estimated. Blindfolding is a technique of sample reuse that eliminates every data point in the independent variable and estimates the parameters with the remaining data points. The difference between the original and estimated data points is used as input for the Q^2 measure. The Q^2 value can be estimated using two different methods, namely the cross-validated community method and cross-validated redundancy method. The cross-validated redundancy

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

approach was chosen to be employed in this study as it enables to estimate both the structural model and measurement model of data prediction. Thus, it can fit the PLS-SEM perfectly to predict the eliminated data points. Instead, by implying the cross-validated community approach, it only estimates the endogenous variable without using the structural model information to predict the omitted data points.

The method of calculating the Q^2 values of a model in a partial least squares involves a blindfolding technique in which the estimation of parameters is by excluding some of the data and by handling them as missing values, and then processing the estimated parameters to rebuild the raw data which were assumed to (Chin, 1998; Fararah & Al-Swidi, 2013; Henseler, Ringle, & Sinkovics, 2009; Tenenhaus et al., 2005). As a result, Stone-Geisser's Q^2 value was used to evaluate the research variable's predictive usefulness.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

3.20 Summary of Data Analysis Test

The research hypotheses were tested through PLS-SEM. First, the measurement model assessment was carried out in which reliability and validity was confirmed. Factor loadings, composite reliability (CR) and Cronbach alpha's were considered to test the reliability. Furthermore, convergent and discriminant validity was considered. Second, structural model assessment was carried out to test the hypotheses through examination of path coefficients. Additionally, variance explained, and effect size was examined.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

The mediator is the variable that intervenes between the independent variable and the dependent variable (Hair et al., 2013). SEM analysis is more popular as it assumes all variables simultaneously (Zhao, Lynch Jr, & Chen, 2010). What matters in the analysis of mediation is the indirect effect. Cheah et al. (2019) call the mediation method "bootstrapping the indirect effect". PLS-SEM bootstrapping is a re-sampling method that collects a sufficient number of sub-samples from the original data and determines each sub-sample. Research suggests many forms of bootstrapping approaches for conducting the mediation test. For example, in their study, Hayes and Preacher (2010) clarified that the bias-corrected bootstrapping confidence interval is the best way to identify the presence of mediation. In addition, PLS-SEM does not assume the distribution shape of the variables or the sampling distribution of the statistics and can, therefore, be used on small sample sizes (Mathew, 2015; Preacher & Hayes, 2008).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Mediation is considered significant when the t-value exceeds 1.96 and the p-value is less than 0.05. The mediation effect occurs when the indirect effects of 95 percent Bootstrapped Confidence Interval Bias Corrected produce lower-and upper-limit values that do not contain 0 in between (Preacher & Hayes, 2008). There are two types of mediation: complete and partial. It is possible to categorize partial mediation into complementary and competitive partial mediation. Complementary partial mediation refers to where the effect (c*) and the indirect effect (a*b) aim in the same direction (positive or negative) (Baron & Kenny, 1986). It explains the misrepresentation of the intermediate variable, and the association between independent and dependent constructs. Competitive partial mediation occurs when there is a negative a*b*c value. The intermediate constructs are expected to either

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

decrease or increase the degree of interaction between the independent and dependent constructs.

3.21 Ethical Consideration

Participation in this study is voluntary. The researcher clearly described the purpose of this study (i.e., purely academic) and informed the respondents the estimated time to fill the questionnaire. Besides, the researcher ensured that all information shared by the respondents will be treated as confidential in all stages. The respondents were not required to provide any identifying information about them. Furthermore, the researcher is the only person who has access to the shared information. It will be the right of all respondents to withdraw from the study at any time. Prior to the collection of data, the researcher got approval from the university. Filling out the consent form was not required by the respondents on the acceptance to fill out the questionnaire is considered consent of the respondents.

3.22 Summary of the Chapter

This chapter elaborated on a thorough research design plan in order to explain how the study was carried out. Furthermore, operationalization of the study variables was considered. Also, methodologies for data analysis as well as the validity and reliability test were described. PLS-SEM was employed as the main analysis method. The analysis

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

was performed using SPSS and SmartPLS. The results based on the test of the hypotheses are presented in the following chapter.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi
05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

CHAPTER 4

RESULTS

4.1 Introduction

The study's data analysis and findings were given in this chapter. The statistical analysis, both descriptive and inferential, was the chapter's main topic. The response rate of the research participants as well as their demographic details are analyzed using descriptive statistics. Concerning the inferential analysis, it entails the assessment of the research measurement items and constructs which was conducted by validating the constructs' reliability, internal consistency, convergent validity as well as the discriminant validity. This also encompasses the structural model (path coefficient significance, R-squared value level, effect size, and model predictive relevance) along with the complementary PLS-SEM analysis features that test the mediating effects in the structural model. This chapter also involved the analysis of the result of the hypotheses and findings.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

4.2 Response Rate

Response rate is the percentage of individuals or elements in sample who actually respond to the survey or data collection effort. It indicates how many of the selected participants completed the survey or provided data. In this study, a response rate analysis of the questionnaire distributed to the study respondents was conducted. As shown in Table 4.1, it was revealed that a total of 384 copies of questionnaires were sent to the study respondents; 274 copies of the questionnaires were filled by the respondents, whereas 110 sampled respondents were unable to fill the questionnaire. The analysis indicates that 274 filled questionnaires out of 384 questionnaires expected to be filled represent an overall response rate of 71 percent. Therefore, the valid response rate of the respondents is adequate for conducting this study. This assertion was based on Sekaran and Bougie (2003), who opined that a minimum response rate of 30 percent is adequate for a survey. Therefore, it can be stated that this study's response rate is suitable and adequate for further analyses.

This study achieved a high response rate because of several reasons. First, after distributing the online questionnaire, reminders were sent to the respondents. Five reminders in total were sent to the respondents. Second, this study kept the questionnaire clear, concise, and well-structured. Avoid long and complex questions which help the respondents to respond without hesitation and in a short time. Third, while data collection, the researcher used social connections in various SMEs and requested the respondents to provide response. Four, multiple channels such as email, Facebook, twitter and other online survey platforms were used for data collection which helped to increase the response rate.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Table 4.1.

Response Rate Analysis

Response	Frequency/Rate
No. of expected filled questionnaires	384
No of filled questionnaires	274
No. of unfilled questionnaires	110
Response rate	71.4 %

4.3 Data Screening and Preliminary Analysis

It is essential to conduct some preliminary assessment of the research items before carrying out structural equation modelling (Hair Jr et al., 2014a). This will help in easily identifying possible breaches of fundamental assumptions in the application of multivariate data analysis techniques. Therefore, in any multivariate analysis, it is essential to conduct a preliminary analysis prior to final analysis (Hair et al., 2007). The data collected were screened for missing values, outlier detection, data normality and multicollinearity. The following sections provide more details (Hair et al., 2010b; Tabachnick & Fidell, 2007).

4.3.1 Missing Value Analysis

One of the most common issues of data analysis is missing data (Tabachnick & Fidell, 2007). It is important to check for missing values in the data set at all times. According

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

to Hair Jr et al. (2014b) researchers could use a 10% tolerance level for missing values as a tolerable threshold, while some scholars such as Schafer (1999) and Tabachnick and Fidell (2007) suggested 5 percent as the threshold. While running the analysis it was observed that some cases had missing values. For example, technology factor has 5 missing values, organizational factor has 3 missing values, ABC adoption system has 3 missing values and SMEs performance has 7 missing values. In all, the missing values sum up to 18 data points representing 0.09 percent of the overall data points.

Thus, the missing values of this study is less than the suggested 5 percent (see Table 4.2) as recommended by Schafer (1999) and Tabachnick and Fidell (2007) who claim that 5 percent missing values or less does not have a significant effect on the result generated. Furthermore, the missing values were replaced using mean substitution which is the commonly used technique for replacing missing values (Hair et al., 2010b; Hair Jr et al., 2014b). Details are contained in Table 4.2.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Table 4.2

Total and Percentage of Missing Values

Variables	Number of Missing Values
SMEs Performance	7
Technology Factor	5
Organizational Factor	3
Environmental Factor	-
ABC Implementation Critical Success Factors	3
Total	8 (out of 4290 data points)
Percentage	0.19%

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

4.3.2 Assessment of Outliers

Hair et al. (2010b) defined outliers as values with rare characteristics that differentiate them from other values. In other words, outliers are observations that appear uncommon in a dataset as a result of wrongful data entry. In regression analysis, outliers may have a negative impact on regression coefficient results, making the findings inaccurate. As a result, it is essential to look for any potential outliers in the dataset before moving on to the final or key data analysis. This study adopted Mahalanobis Distance (D^2) in detecting outliers. The Mahalanobis distance measures the distance relative to the centroid or a base or central point which can be thought of as an overall mean for multivariate data (Hadi & Simonoff, 1993; Hair Jr et al., 2014b).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

As the number of predictors in this study is four, which form the degree of freedom, the chis-square would be 13.28 at 10 percent significance level ($p<0.01$) (Tabachnick & Fidell, 2007). Based on this degree of freedom value any case having Mahalanobis distance value greater than 13.28 (df = 4) at 10 percent significance level would be treated as an outlier and deleted thereof. In this study 7 cases were found to have values greater than 13.28 at ($p<0.01$) and were subsequently deleted. The multivariate outliers that were detected and deleted were presented in Table 4.3.

Table 4.3

Multivariate Outliers

ID	Mahalanobis Distance
27	32.48
69	25.21
98	27.12
162	32.25
185	45.52
192	22.51
247	26.21

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

4.3.3 Normality Test

For more preliminary analysis the study data were further subjected to normality test. It is important that the data depict some form of normality. Although, this study employed PLS-SEM and it has been established by prior studies that PLS-SEM

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

provides an appropriate model estimation in situation with small samples and non-normal data distribution (Hair et al., 2011; Kock, 2016; Reinartz et al., 2009; Wetzels et al., 2009). However, Hair et al. (2012) lately suggested that normality test of data should be conducted to better enhance the data authenticity and validity. Therefore, normality of individual items was tested using skewness and kurtosis statistics.

Kurtosis measures how peak or how flat a distribution is when compared with a normal distribution (Hair Jr et al., 2014b), while skewness is the measure of the symmetry of a distribution (Tabachnick & Fidell, 2007). As such, the study employed statistical method to check for the normality (Hair et al., 2010b; Tabachnick & Fidell, 2007). As opined by Kline (2023), the acceptable threshold value for skewness is -3 and +3 while that of Kurtosis is between -10 and +10 when employed SEM (Brown, 2015). While values above these values signify a non-normality problem. Based on the result generated as shown in Table 4.4, both the Skewness and Kurtosis of metric variables were between -3 and +3 and -10 and +10 respectively (Brown, 2015).

Table 4.4
Numerical Method: Skewness and Kurtosis

Variables	N	Min	Max	Mean	Std. Dev	Skewness	Kurtosis
OF	274	1.00	5.00	4.406	1.518	-0.336	-0.280
TF	274	1.00	5.00	3.325	1.284	-0.238	-0.340
EF	274	1.00	5.00	4.412	1.496	-0.396	0.292
ABC	274	1.00	5.00	4.731	1.508	0.307	-0.881
PERF	274	2.00	5.00	4.974	1.550	-1.049	-0.411

Note: OF = Organizational Factor, TF = Technology Factor, EF = Environmental Factor, ABC = ABC Implementation Critical Success Factors, PERFM = SMEs Performance. (legends should also be explained previously in Chapter 3)

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

4.3.4 Multicollinearity Test

Multicollinearity depicts the circumstance where two or more independent variables are highly correlated with each other. The presence of multicollinearity between the exogenous latent variables can significantly affects the estimates of regression coefficients and their statistical significance tests (Hair et al., 2007; Sekaran & Bougie, 2010). Multicollinearity, in particular, increases the standard errors of the coefficients, making the coefficients statistically negligible (Tabachnick & Fidell, 2007). The method of identifying multicollinearity includes two approaches, which are correlation matrix, and Variance Inflation Factor (VIF) and tolerance as suggested by Chatterjee and Yilmaz (1992) and Peng and Lai (2012).

In this study, the VIF and tolerance method will be adopted. According to Lin (2008) the VIF values for the study variables should be below 10, while Hair et al. (2011) later recommended 5 as the threshold value for VIF and 0.20 as the lowest value for tolerance threshold. Based on Hair et al. (2011) VIF threshold value of 5, it is shown in Table 4.5 that there is no multicollinearity problem in the study since the VIF values and Tolerance values are both below the recommended threshold value. The details are presented in Table 4.5.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Table 4.5

Multicollinearity Test Based on VIF and Tolerance Values

Constructs	VIF	Tolerance
Organizational Factor	1.852	.624
Technology Factor	1.104	.541
Environmental Factor	1.152	.427
ABC Implementation Critical Success Factors	2.012	.544

In Table 4.5 above, it is revealed that there is no multicollinearity among the exogenous latent constructs as the VIF of all the independent variables are less than 5 and the tolerance levels are greater than 0.20 as recommended by Hair et al. (2011). This clearly shows that there is absence of multicollinearity between the variables. Hence, collinearity statistics using VIF and tolerance values indicated that multicollinearity does not exist and it is not an issue in this study.

4.4 Non-Response Bias

As described by Berg (2010), non-response bias refers to "the mistake one expects to make in estimating a population characteristic based on a sample of survey data in which, due to non-response, certain types of survey respondents are under-represented". As survey response rates decrease, academician and researchers have become more adept at performing non-response bias checks (Brick & Williams, 2013). Despite the fact that high response rates improve the robustness of a sample, non-response bias can also occur even with relatively high response rates (Groves & Peytcheva, 2008).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

In addition Pearl and Fairley (1985), and Sheikh and Mattingly (1981), opined that there is likelihood of detecting bias in the non-response rate irrespective of its size. This claim was further stressed by Singer (2006) who also reveal that there is no minimum response rate in which a survey assessment is necessary biased, likewise there is no number of response rate in which a survey assessment is not biased. This shows that response biasness could be possible with low or higher response rate. Therefore, checking for non-response bias becomes important in this study.

To establish the non-response bias Armstrong and Overton (1977), extrapolation approach was adopted. This approach entails the comparison of the early responses and late responses from the sampled respondents. On the premise of Armstrong and Overton (1977) the late response is comparable to no-response. In line with the adopted approach, respondents to the survey were segmented into two distinct groups based on their responses to the survey. The period of collating data commenced in the early of May 2021 through June 2021 with the dissemination of the questionnaires to the sampled respondents. Some of the respondents attended to the questionnaire early while other delayed their response to the questionnaires. Hence, there are two forms of responses to the survey which are categorized as early response and late response.

The early response where those questionnaires that were retrieved in early June 2021 which amounted to 157 representing 57 % of the expected response while the remaining 117 representing 43 % were retrieved in late July 2021 and termed late responses. The two categorized response time were contrasted since the late response was perceived to be samples of the respondents that did not respond to the questionnaire

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

in the early period of questionnaire collation process and it is assumed to represent the non-respondent segment (Miller & Smith, 1983).

From the results of the independent-sample t-test, as depicted in Table 4.6, it was revealed that the equal variance significance values for individual variables of the study were all greater than the 0.05 significance level of Levene's test for equality of variance. Based on the premise of Pallant (2010) and Field (2009), the assumption of equal variances between the early response and late response is therefore established indicating that non-response bias problem is not present in this study.

Table 4.6

Results of Independent-Samples T-test for Non-Response Bias

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Constr.	Group	N	Mean	Std. Deviation	Levene's Test for Equality of Variances	
					F	Sig.
OF	1 Early Response	157	14.42	2.321	0.031	0.239
	2 Late Response	117	9.27	2.257		
TF	1 Early Response	157	12.31	3.835	0.005	0.988
	2 Late Response	117	8.62	1.286		
EF	1 Early Response	157	6.25	1.020	0.009	0.924
	2 Late Response	117	6.28	3.216		
ABC	1 Early Response	157	7.75	0.739	0.001	0.805
	2 Late Response	117	6.25	1.354		
PERF	1 Early Response	157	8.15	1.641	0.045	0.899
	2 Late Response	117	7.72	2.157		

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

4.5 Common Method Variance Test

According to Podsakoff et al. (2003) common method variance (CMV) is the variance that occurs as a result of measurement method rather than the constructs of the study. CMV produces an incorrect internal consistency or an explicit correlation among constructs or variables that are all provided by the same sources (Chang et al., 2020). The common method variance is commonly used when self- report questionnaires were employed in collecting data from the same respondents at the same time. This problem is enhanced when both the independent and dependent constructs are indicators originating from the same participants (Podsakoff & Organ, 1986). As a result, common method variance can lead to systematic measurement errors that increase or dampen observed construct-to-construct relationships, thereby result in Type I and Type II errors (Chang et al., 2020; Conway & Lance, 2010).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

According to Podsakoff et al. (2003), there are four common sources of CMV which he described as; the use of common rater, the mode in which the items on the questionnaire were conveyed to the respondents, the situation in which the items are position in the survey, and the influences that may arise from the situational factors such as time, location and mode employed in measuring the constructs. However, in this study some measures were taken to mitigate the effects of CMV. One of the measures taken was to adopt key measures from different sources in the research design stage. For example, the measures of dependent variable were adopted from different sources that are not same with that of the independent variable.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Additionally, the scale items were also improved as a result of the use of clear, precise, and succinct language, as well as the avoidance of ambiguous words. And lastly, Harman's single factor test was conducted to evaluate the common method variance issue. According to Harman's single-factor method, the total variance value must be below 50%. The total variance value in this present study was 37.52%. Thus, this study established that there is no problem of common method variance and there is not tendency that there would be high correlations among variables of this study.

4.6 Descriptive Statistics: Profiles of Respondents

This section presents demographic statistics based on the demographic characteristics of the respondents. The demographic characteristics include gender distribution, age distribution, education level, and so on. The results are presented in Table 4.7.

Table 4.7

Descriptive Analysis of Demographic Data

Demographic Profile	Frequency	Percentage
Gender:		
Male	181	66.1
Female	93	33.9
Total	274	100.0
Age:		
Less than 25 years	11	4.0

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Demographic Profile	Frequency	Percentage
26-35 years	75	27.4
36-45 years	102	37.2
Over 45 years	86	31.4
Total	274	100.0
Educational level:		
Basic/Secondary	25	9.1
Undergraduate	113	41.2
Masters	94	34.3
PhD	42	15.4
Total	274	100.0
Position:		
Owner	127	46.4
Executive director	95	34.7
Manager	52	18.9
Total	274	100.0
Industry/Sector:		
Manufacturing	106	38.7
Service	48	17.5
Oil & Gas	2	0.7
Information Technology	25	9.1
Construction & Materials	37	13.5
Consumer discretionary	24	8.8
Others	32	11.7

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Demographic Profile	Frequency	Percentage
Total	274	100.0
Number of employees:		
Less than 10	72	26.2
11-50	125	45.6
51-250	35	12.8
Others	42	15.4
Total	274	100.0
Years of operations:		
Less than 10 years	76	27.7
10-30 years	57	20.8
31-50 years	85	31.1
Over 50 years	56	20.4
Total	274	100.0
Business ownership structure:		
Sole proprietorship	35	12.8
Partnership	47	17.2
Private limited liability company	192	70.0
Total	274	100.0

Table 4.7 shows the descriptive information of the respondents. It is indicated that the majority of the respondents representing 66.1 percent of the total population were males, whereas the remaining 33.9 percent % were females which shows that the samples cut across both genders although males were more predominant than females. It was also shown that the majority of the respondents representing 37.2 percent of the

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

total population of the respondents were between the ages of 36-45 years. At the educational level, it was shown that the majority of the respondents representing 41.2 percent are first-degree certificate holders.

Furthermore, the majority of the respondents representing 46.4 percent of the total respondents are owners of the businesses. As regards the industry/sector, the majority of the respondents representing 38.7 percent are in the manufacturing sector. Also, it was revealed that the majority of the respondents representing 45.6 percent have between 11-50 employees in their organization. The majority of the sampled respondents representing 31.1 percent of the total respondents have their businesses in operations between 31-50 years. Finally, concerning the forms of the ownership structure, the majority of the respondents representing 70 percent of the total respondents operate in a private limited liability company. In summary, it can be reported based on the details that the respondents varied substantially in terms of their individual characteristics and this implies that the data used in the study are from respondents of diverse demographic backgrounds, thus enriching the generalizability of the research findings.

4.7 Descriptive Analysis of the Variables

This section presents the descriptive analysis of the study variables using mean and standard deviation. It is revealed from Table 4.8 that TF has an overall mean score of 4.19 (*SD* =1.216). This output shows a positive perception of TF amongst the SMEs business owners. In addition, OF reveals an overall mean score of 4.92 (*SD* = 1.165).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

This result also shows a positive perception of amongst the research respondents. The overall mean score and SD value for EF, ABC, and SMEs_PERF are 4.83 (*SD* = 1.190), 4.53 (*SD* = 1.197) and 4.29 (*SD* = 1.201), thus revealing a positive perception amongst the respondents.

Table 4.8

Descriptive Statistics of The Variaables

	N	Mean	Std. Deviation
TF	274	4.19	1.216
OF	274	4.92	1.165
EF	274	4.83	1.190
ABC	274	4.53	1.197
SMEs_PERF	274	4.29	1.201

Note: TF = Technological Factor; OF = Organizational Factor; EF = Environmental Factor, ABC = ABC Implementation Critical Success Factors, SMEs_PERF = SMEs Performance.

4.8 Measurement Model (Outer Model) Evaluation

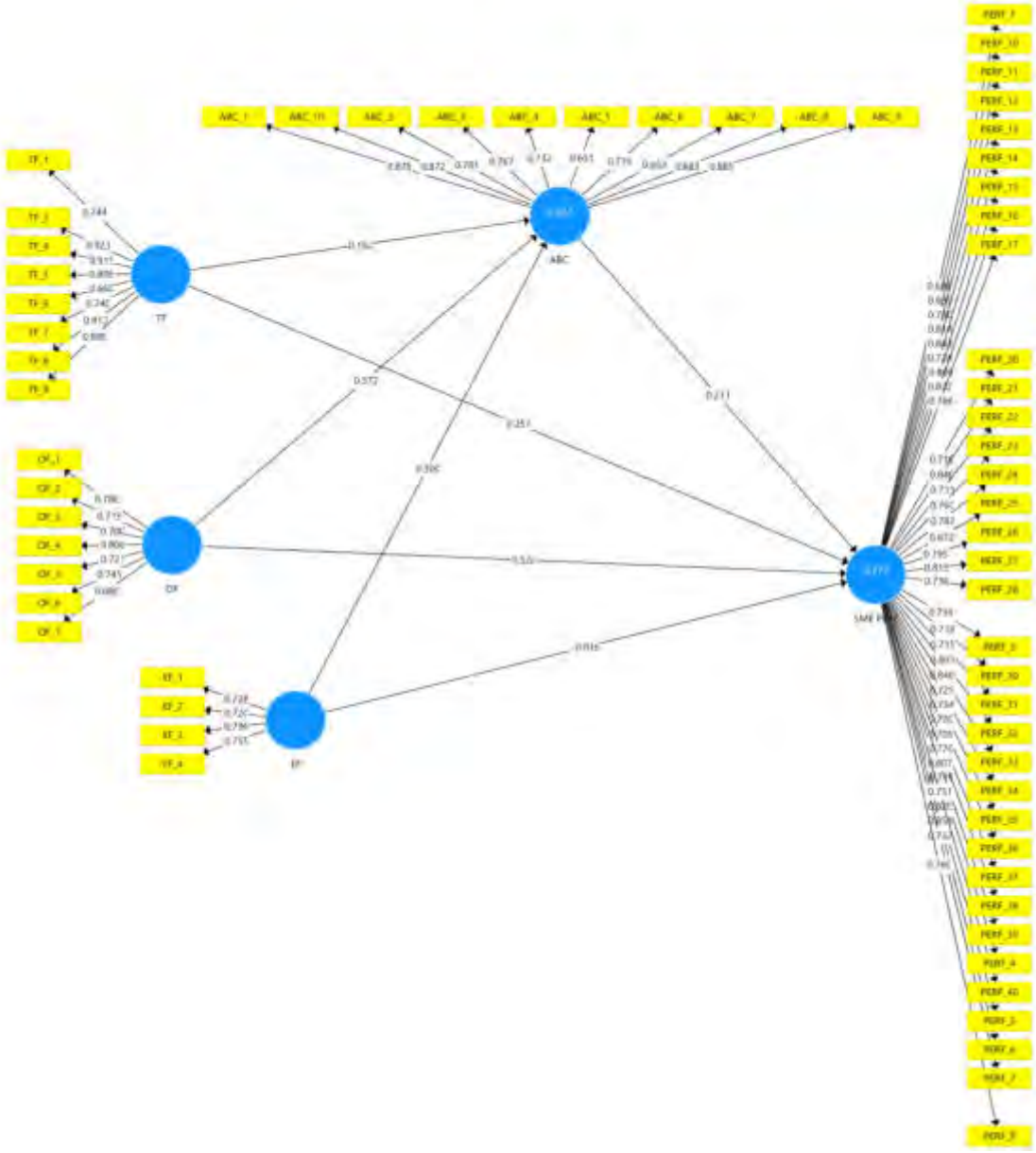
Employing the use of SmartPLS to perform PLS-SEM, the measurement model was used encompassing the determination of individual construct reliability, internal consistency, convergent validity, and discriminant validity (Hair et al., 2011; Hair Jr et al., 2014a; Hair Jr et al., 2014b). The measurement model is presented in Figure 4.1.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Figure 4.1

Measurement Model



4.8.1 Indicator Reliability

Examining the outside loadings of each latent construct allowed researchers to gauge the reliability of each individual item in this study (Hair et al., 2012; Hair Jr et al.,

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

2014b). According to Sekaran and Bougie (2010) advice for keeping item outer loadings, an item outer loading of 0.60 and higher is considered to be well loaded. All of the items' outer loadings on their respective constructs were greater than 0.60, demonstrating that the indicators include appreciably high loadings and supporting the validity of the constructs' content.

However, out of 70 items measuring four reflective constructs (organizational factor, technological factor, environmental factor, ABC adoption system, and SMEs performance), one item TF2 with outer loadings of 0.526 was deleted from technological factor. Similarly, five items PERF2 with loadings of 0.425, PERF8 with loadings of 0.275, PERF18 with loadings of 0.485, PERF19 with loadings of 0.524, and PERF29 with loadings of 0.492 were also deleted from SMEs performance. The deletion of these lower outer loadings items helps achieve the minimum acceptable AVE value of 0.50. Therefore, 63 items were retained in the whole model as they had loadings above the threshold value. The individual indicators loadings are presented in Table 4.9.

Table 4.9

Outer Loadings

Constructs	**Items**	**Loadings**
TF	TF1	0.744
	TF3	0.923
	TF4	0.915
	TF5	0.806

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Constructs	Items	Loadings
	TF6	0.660
	TF7	0.740
	TF8	0.912
	TF9	0.899
OF	OF1	0.786
	OF2	0.719
	OF3	0.700
	OF4	0.806
	OF5	0.721
	OF6	0.745
	OF7	0.680
EF	EF1	0.728
	EF2	0.720
	EF3	0.796
	EF4	0.755
ABC	ABC1	0.878
	ABC2	0.781
	ABC3	0.767
	ABC4	0.732
	ABC5	0.651
	ABC6	0.779
	ABC7	0.653
	ABC8	0.683

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Constructs	Items	Loadings
	ABC9	0.885
	ABC10	0.872
SMEs_PERF	PERF1	0.638
	PERF3	0.739
	PERF4	0.719
	PERF5	0.820
	PERF6	0.854
	PERF7	0.732
	PERF9	0.760
	PERF10	0.839
	PERF11	0.730
	PERF12	0.814
	PERF13	0.843
	PERF14	0.724
	PERF15	0.809
	PERF16	0.832
	PERF17	0.766
	PERF20	0.710
	PERF21	0.840
	PERF22	0.711
	PERF23	0.760
	PERF24	0.787
	PERF25	0.672

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Constructs	Items	Loadings
	PERF26	0.795
	PERF27	0.815
	PERF28	0.738
	PERF30	0.718
	PERF31	0.715
	PERF32	0.801
	PERF33	0.848
	PERF34	0.725
	PERF35	0.734
	PERF36	0.700
	PERF37	0.709
	PERF38	0.770
	PERF39	0.807
	PERF40	0.751

Note: TF = Technological Factor; OF = Organizational Factor; EF = Environmental Factor, ABC = ABC Implementation Critical Success Factors, SMEs_PERF = SMEs Performance

4.8.2 Internal Consistency and Convergent Validity

Internal consistency is the measure of assessing the correlation between multiple items in a survey to measure the same construct. In other words, it is a measure of reliability that refers to the degree to which a measure generates the same measure each time it is administered whereas all other factors are equal. The most widely used indicators of an

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

instrument's internal consistency dependability in academic research, according to Peterson and Kim (2013), are the composite reliability coefficient and Cronbach alpha coefficient. The composite reliability value and Cronbach's alpha value should both be considered when evaluating internal consistency. The composite reliability's cutoff value is 0.70. Also, Sekaran sets a 0.6 minimum cutoff for the value of Cronbach's Alpha (2003). Because the composite reliability and Cronbach's alpha values of all the constructs are significantly higher than the cutoff values of 0.7 and 0.6, respectively, the result in Table 4.10 demonstrates that all of the study's constructs have high levels of internal consistency.

Table 4.10

Internal Consistency and Convergent Validity

Constructs	Items	Cronbach's Alpha (CA)	Composite Reliability (CR)	Average Variance Extracted (AVE)
TF	TF1	0.933	0.946	0.689
	TF3			
	TF4			
	TF5			
	TF6			
	TF7			
	TF8			
	TF9			
OF	OF1	0.860	0.893	0.545
	OF2			

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Constructs	Items	Cronbach's Alpha (CA)	Composite Reliability (CR)	Average Variance Extracted (AVE)
	OF3			
	OF4			
	OF5			
	OF6			
	OF7			
EF	EF1	0.741	0.837	0.563
	EF2			
	EF3			
	EF4			
ABC	ABC1	0.923	0.936	0.597
	ABC2			
	ABC3			
	ABC4			
	ABC5			
	ABC6			
	ABC7			
	ABC8			
	ABC9			
	ABC10			
SMEs_PERF	PERF1	0.979	0.980	0.586
	PERF3			
	PERF4			

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Constructs	Items	Cronbach's Alpha (CA)	Composite Reliability (CR)	Average Variance Extracted (AVE)
	PERF5			
	PERF6			
	PERF7			
	PERF9			
	PERF10			
	PERF11			
	PERF12			
	PERF13			
	PERF14			
	PERF15			
	PERF16			
	PERF17			
	PERF20			
	PERF21			
	PERF22			
	PERF23			
	PERF24			
	PERF25			
	PERF26			
	PERF27			
	PERF28			
	PERF30			

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi
05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Constructs	Items	Cronbach's Alpha (CA)	Composite Reliability (CR)	Average Variance Extracted (AVE)
	PERF31			
	PERF32			
	PERF33			
	PERF34			
	PERF35			
	PERF36			
	PERF37			
	PERF38			
	PERF39			
	PERF40			

Note: TF = Technological Factor: OF = Organizational Factor: EF = Environmental Factor, ABC = ABC Implementation Critical Success Factors, SMEs_PERF = SMEs Performance.

Furthermore, convergent validity examines how well two measures capture a single construct. Weak convergent validity would at any point have an impact on the intensity and interpretability of research findings, according to Carlson and Herdman (2012). A minimum threshold value of 0.5 is used for the convergent validity assessment, which is based on Average Variance Extracted (AVE) values (Fornell & Larcker, 1981; Hair et al., 2010b). The AVE values of the constructs in this investigation ranged from 0.545 to 0.689, as shown in Table 4.5. Because of this, the findings from the item loadings, Cronbach Alpha, composite reliability, and AVE confirm the internal consistency and convergent validity of the study's constructs.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

4.8.3 Discriminant Validity of Measurement Models

In their study, Duarte and Raposo (2010) described discriminant validity as the extent to which particular measures are varied from other latent constructs. As opined by Hubley (2014), discriminant validity is shown by evidence that the measurement of constructs that should not be highly correlated to each other is found not to be highly correlated. Thus, the essence of discriminant validity is to assess the construct validity of measures to establish that measures of the constructs were not related. In earlier studies, two techniques were employed to check the discriminant validity in the measurement model which is Fornell and Larcker's criterion (Fornell & Larcker, 1981) and the cross-loading criterion of Chin (1998; 2010).

05-4506832 Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah ptbupsi

However, recent studies have critically examined the performance of both techniques and found that they do not reliably identify the discriminant validity problem (Henseler et al., 2015). In providing a solution to the deficiency, Henseler et al. (2015) developed the method of Heterotrait-Monotrait Ratio (HTMT). The findings showed that HTMT has a greater accuracy and sensitivity rates of 97-99 percent as compared to Fornell-Lacker's criterion with 20.8 percent and cross-loadings with 0 percent. HTMT is the ratio of the between-trait correlations to the within-trait correlations. This method has been adopted by many recent studies because of its performance level in detecting discriminant validity.

The criterion for HTMT is on the basis that HTMT values that are close to 1 show a lack of discriminant validity. However, some authors, for example, Kline (2011) and Gold et al. (2001) recommend values greater than 0.85 for the stringent criterion

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

and 0.90 for conservative criterion respectively to indicate that there is a problem of discriminant validity. Therefore, this study adopted HTMT in assessing the discriminant validity of the study constructs (See Table 4.11).

Table 4.11

Discriminant Validity (HTMT Criterion)

	ABC	**TF**	**OF**	**EF**	**SMEs_PERF**
ABC					
TF	0.647				
OF	0.841	0.764			
EF	0.616	0.746	0.622		
SMEs_PERF	0.783	0.763	0.542	0.626	

Note: TF = Technology Factor: OF = Organizational Factor: EF = Environmental Factor: ABC = ABC Implementation Critical Success Factors: SMEs_PERF = SMEs Performance.

The result in Table 4.11 affirms the discriminant validity of the current study, as the values for the HTMT of all constructs were below the threshold of 0.85 which was recommended by Kline (2011) and Gold et al. (2001). In sum, having confirmed the content validity, convergent validity, and discriminant validity of the constructs of this study, it can then be concluded that the construct validity has been established in this study.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

4.9 Assessment of the Structural Model

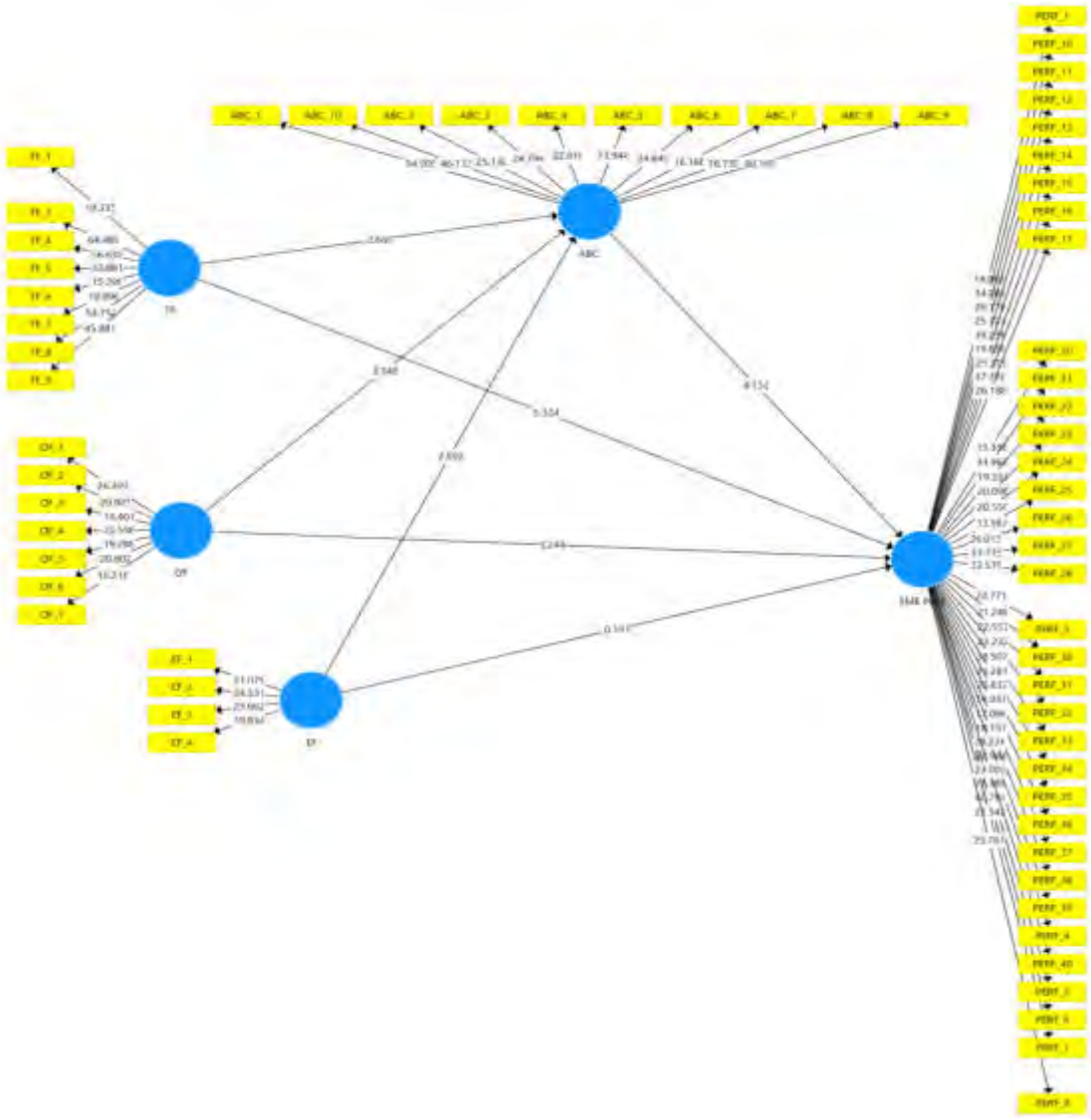
After the successful analysis of the measurement model, the next phase is to assess the standardized path coefficient through bootstrapping in the structural equation model. Bootstrapping analysis was employed using several 5000 bootstrap samples for 274 cases to assess the significance of the path coefficients of both direct relationships and mediating effects (Hair et al., 2012; Hair Jr et al., 2014b; Reinartz et al., 2009). The full structural model is presented in Figure 4.2 and 4.3.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi
05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Figure 4.2

Structural Model (Inner and Outer Model)



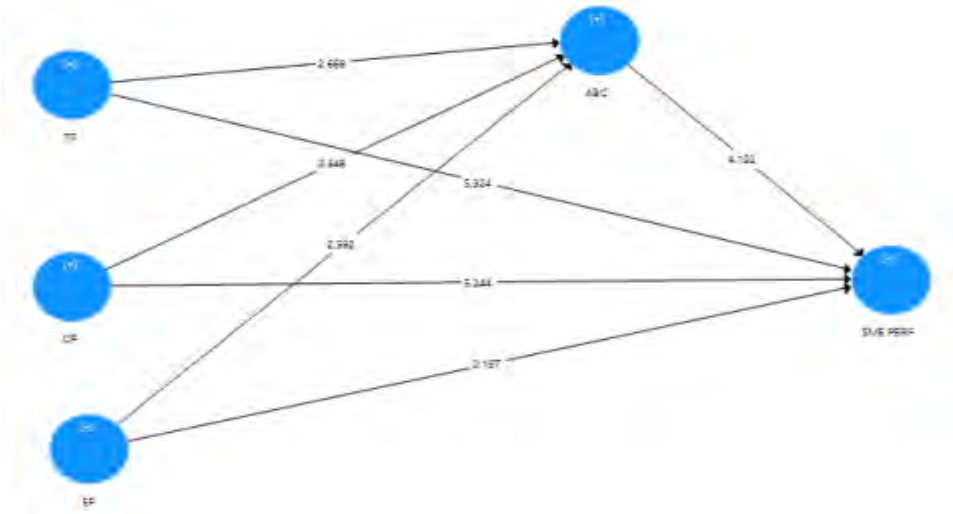
05-45068 ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Figure 4.3

Structural Model (Inner Model)



4.9.1 Hypothesis Testing and Path Coefficients for Direct Hypotheses

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

In this section, the analysis of the research objectives, research questions, and research hypotheses was evaluated. The analysis attempts to provide answers to the following research objectives:

1. To examine the relationship between technological factor and SMEs performance in UAE.
2. To examine the relationship between organizational factor and SMEs performance in UAE.
3. To examine the relationship between environmental factor and SMEs performance in UAE.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

4. To examine the relationship between ABC implementation critical success factors and SMEs performance in UAE.
5. To examine the relationship between technological factor and ABC implementation critical success factors.
6. To examine the relationship between organizational factor and ABC implementation critical success factors.
7. To examine the relationship between environmental factor and ABC implementation critical success factors.

The research questions are:

1. Is there any relationship between technological factor and SMEs performance in UAE?
2. Is there any relationship between organizational factor and SMEs performance in UAE?
3. Is there any relationship between environmental factor and SMEs performance in UAE?
4. Is there any relationship between the ABC implementation critical success factors and SMEs performance in UAE?
5. Is there any relationship between technological factor and the ABC implementation critical success factors by SMEs in UAE?
6. Is there any relationship between the organizational factor and the ABC implementation critical success factors by SMEs in UAE?
7. Is there any relationship between environmental factor and the ABC implementation critical success factors by SMEs in UAE?

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Similarly, the following hypotheses were tested with the aim of examining the direct effect of the study variables for acceptance or rejection.

H_1: There is a positive relationship between technological factor and SMEs performance.

H_2: There is a positive relationship between organizational factor and SMEs performance.

H_3: There is a positive relationship between environmental factor and SMEs performance.

H_4: There is a positive relationship between the ABC implementation critical success factors and SMEs performance.

H_5: There is a positive relationship between technological factor and the ABC implementation critical success factors.

H_6: There is a positive relationship between organizational factor and the ABC implementation critical success factors.

H_7: There is a positive relationship between environmental factor and the ABC implementation critical success factors.

As shown in Table 4.12, PLS algorithm was run to generate the path coefficients and bootstrapping with several 5000 bootstrap samples and 274 cases to examine the significance of the path coefficients (Hair et al., 2014; Hair et al., 2011). The aim of running the model with all variables was to determine the results of direct relationships that stemmed from the research objectives of this study. The result of the structural model, known as the inner model, is depicted in Table 4.12. Based on these results, the first hypothesis (H1) which states that technological factor (TF) positively influences

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

SMEs performance is supported at 0.05 level of significance (β= 0.257, t= 5.393, p<0.05). This result indicates a significant positive relationship between technological factor and SMEs performance.

Table 4.12

Direct Relationship

Hyp.	Hypotheses Effect	Path Coefficient	Standard Error	t-stat	Significance
H1	TF -> SME_PERF	0.257	0.048	5.393	0.000***
H2	OF -> SMEs_PERF	0.520	0.098	5.326	0.000***
H3	EF -> SMEs_PERF	-0.016	0.084	0.194	0.846
H4	ABC -> SMEs_PERF	0.211	0.054	3.897	0.000***
H5	TF -> ABC	0.162	0.062	2.601	0.009***
H6	OF -> ABC	0.372	0.110	3.370	0.001***
H7	EF -> ABC	0.300	0.114	2.635	0.008***

Note: TF = Technology Factor, OF = Organizational Factor, EF = Environmental Factor, ABC = ABC Implementation Critical Success Factors, SMEs_PERF = SMEs Performance.

Also, the findings of the second hypothesis (H2) which states that there is a positive relationship between organizational factor and SMEs performance was tested. The result of the analysis (β= 0.520, t = 5.326, p<0.05) also depicts that the hypothesis is supported at 0.05 level of significance. This revealed that organizational factor positively influences SMEs performance. However, in contrary to the above result, the third hypothesis (H3) which states that there is a positive relationship between environmental factor and SMEs performance was also tested, but it was not supported (β= -0.016, t = 0.194, p>0.005). The output of the findings revealed that there is no

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

positive significant relationship between environmental factor and SMEs performance. Hence, hypothesis 3 is not supported in this study.

Subsequently, the result of the fourth hypothesis (H4) which states that there is a positive significant relationship between ABC implementation critical success factors and SMEs performance was tested and found to be supported (β=0.211, t=3.897, $p < 0.005$). The result of the hypothesis confirmed a positive relationship between ABC adoption system and SMEs performance. Hence, H4 is supported in this study. In addition, the result of the fifth hypothesis H5 which states that there is a positive significant relationship between technological factor and ABC implementation critical success factors was tested. The result of the analysis ($\beta = 0.162$, $t = 2.601$, $p < 0.05$) revealed a positive significant relationship between technological factor and ABC implementation critical success factors. The hypothesis is, therefore, supported.

The result of the sixth hypothesis (H6) which states that there is a positive significant relationship between organizational factor and ABC implementation critical success factors was tested. The result of the analysis (β=0.372, $t = 3.370$, $p < 0.005$) revealed a positive and significant relationship between organizational factor and ABC adoption system. Thus, the hypothesis was supported and accepted. Further, hypothesis (H7) which states that there is a positive significant relationship between environmental factor and ABC implementation critical success factors was tested. The result of the analysis (β=0.300, t= 0.114, $p < 0.005$) revealed a positive significant relationship between environmental factor and ABC implementation critical success factors. Therefore, it can be concluded that the hypothesis is supported and accepted.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

4.9.2 Assessment of the Coefficient of Determination (R^2)

The variance explained by each of the independent variables on the dependent variable is also assessed via the structural model evaluation. Coefficient of determination is the generally employed measure to assess the structural model. The R^2 value which is also known as the coefficient of determination represents the degree of variation in the dependent variable which can be attributed to one or more predictor variable(s) (Elliott & Woodward, 2007; Hair et al., 2006; Hair et al., 2007). It measures the sample predictive accuracy of the model which is estimated through the squared correlation of the predicted values and the endogenous actuals (Hair et al., 2017). The acceptable degree of the R^2 value is based on the research context as claim by Hair et al. (2010b). However, R^2 value of 0.25, 0.50 and 0.75 are regarded weak, moderate and substantial respectively (Hair et al., 2011; Henseler et al., 2009). The R^2 value for the current study is given in Figure 4.13.

Table 4.13

Variance Explained in the Endogenous Latent Variable

Latent Variables	R^2	Variance Explained
ABC	0.602	Moderate
SMEs performance	0.775	Strong

Table 4.13 presents the R^2 value that is explained by the study predictors on the dependent construct. The research model predictors explain 77.5 percent and 60.2 percent of the total variance in SMEs performance and ABC implementation critical success factors system respectively, indicating that technology factor, organizational

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

factor and environmental factors jointly explain 77.5 percent of variance in SMEs performance and approximately 60.2 percent variation in ABC implementation critical success factors. Hence, the result confirms that the endogenous latent variable revealed substantial and acceptable levels of R^2 values. To further establish the individual effect of the exogenous variables on the endogenous variable(s) the change in R^2 value is subsequently estimated.

4.9.3 Assessment of Predictive Relevance of the Model (Q2)

In partial least square structural equation modeling, it is recommended that researchers should evaluate Stone-Geisser's Q^2 value (Geisser, 1974) of the study in addition to the assessment of the R^2 values as a criterion of predictive accuracy which measures the predictive relevance or out-of-sample predictive power. This approach is also regarded as part of the model assessment in the PLS-SEM analysis (Duarte & Raposo, 2010). The Q^2 values larger than zero for the endogenous variable is considered to shows that the path model has predictive relevance for a particular dependent construct and if otherwise, a model is held to have no predictive relevance (Hair et al., 2017).

The approach of calculating the Q^2 values of a model in partial least square involves blindfolding technique in which the estimation of parameters is by excluding some of the data and by handling them as missing values (Chin, 1998; Fararah & Al-Swidi, 2013; Henseler et al., 2009; Tenenhaus et al., 2005), and then processing the estimated parameters so as to rebuild the raw data which were assumed previously as missing and consequently create general cross-validating metrics (Q^2) (Chin, 1998).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Therefore, Stone-Geisser's Q^2 value was employed in assessing the predictive relevance of the study variable. The result of the blindfolding techniques of predictive relevance is presented in Table 4.14

Table 4.14

Predictive Relevance of Exogenous Variables

Construct	SSO	SSE	Q^2 = 1-SSE/SSO
ABC Implementation Critical Success Factors	2490.000	1625.647	0.347
SMEs performance	8715.000	4859.414	0.442

Note: SSO (sum of squared observations); SSE (sum of squared prediction errors)

Table 4.14 indicates the result of the predictive relevance of the exogenous variables (technology factor, organizational factor and environmental factor). Both Q^2 are greater than zero indicating the predictive relevance of the direct path model. Therefore, this confirms that the adopted model of the current study has predictive relevance (Chin, 1998; Hair Jr et al., 2014b; Hayes, 2009).

4.9.4 Assessment of the Effect Size (f2)

As also suggested by Hair et al. (2007), conducting the effect size (f^2) is important because it shows how well the path model can reflect and predict the observed values in the model. f^2 is the value that determines the effect size of exogenous latent construct on the endogenous latent construct. R^2 included and R^2 excluded are the R^2 values of the endogenous latent variable after a particular construct is removed or added to the

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

study model. Unlike the f^2 effect size that is being calculated automatically in the SMARTPLS version 3 software, the f^2 effect size is estimated manually because the SMARTPLS version 3 software does not compute that automatically.

$$Q^2 = \frac{Q^2 \text{ included} - Q^2 \text{excluded}}{1 - Q^2 \text{ included}}$$

Where:

Q^2 is the value of the predictive relevance effect size of each exogenous latent construct on the endogenous construct. Q^2 included and Q^2 excluded are the Q^2 values of the endogenous latent variable after a particular construct is deleted or added to the study model. In this study, the q^2 effect size is calculated to assess the predictive relevance of each exogenous construct on the endogenous construct. Based on the recommendation of Hair et al. (2007), q^2 values of 0.02, 0.15, and 0.35 indicate that an exogenous construct has a small, medium or large predictive relevance, respectively when considering a certain endogenous construct (See Table 4.15) for the Q^2 effect size of all the exogenous latent variables on exogenous variable.

Table 4.15

Predictive Relevance of Exogenous Variable

Latent Variables	**Q^2 included**	**Q^2 excluded**	**Q^2 Effect size**	**Effect size**
TF effect size on ABC	0.347	0.340	0.010	None
TF effect on SMEs performance	0.442	0.424	0.032	Small effect
OF effect size on ABC	0.347	0.334	0.019	None
OF effect on SMEs performance	0.442	0.421	0.037	Medium effect

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

EF effect size on ABC	0.347	0.340	0.010	None
EF effect on SMEs performance	0.442	0.442	0	None
ABC effect on SMEs performance	0.442	0.433	0.016	None

As presented in Table 4.15, the effect size of technology factor on ABC implementation critical success factors and SME performance are 0.010 and 0.032 both representing small effect size, respectively. Similarly, the effect size of organizational factors on ABC implementation and SME performance are 0.019 and 0.037 representing small and medium effect size, respectively. It is also shown in Table 4.15 that the effect size of environmental factor on ABC implementation critical success factors and SME performance are 0.010 and 0 showing small effect size and no effect size respectively. Lastly, the effect size of ABC implementation critical success factors on SME performance is shown to be 0.016 which revealed that the effect size of ABC implementation critical success factors on SME performance is small.

4.9.5 Testing the Mediating Effects

The mediating effect is usually tested or assessed when a third variable construct intervenes in the existing relationship between the independent and dependent variables. The main function of the mediating variable is to show the true relationship between exogenous (independent) and endogenous (dependent) variables. In a study of a multivariate analysis technique, the mediating effect can be conducted using various approaches (Hayes & Preacher, 2010) which include Sobel test (Sobel, 1982),

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

distribution of the product method, causal steps approach (Baron & Kenny, 1986), and bootstrapping (Preacher & Hayes, 2008).

Hence, this section presents the mediating analysis in order to provide answers to the following research objectives;

8. To examine whether ABC implementation critical success factors mediates the relationship between technological factor and SMEs performance in UAE.
9. To examine whether ABC implementation critical success factors mediates the relationship between organizational factor and SMEs performance in UAE.
10. To examine whether ABC implementation critical success factors mediates the relationship between environmental factor and SMEs performance in UAE.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Research Questions:

8. Does the ABC implementation critical success factors mediate the relationships between technological factor and SMEs performance in UAE?
9. Does the ABC implementation critical success factors mediate the relationships between organizational factor and SMEs performance in UAE?
10. Does the ABC implementation critical success factors mediate the relationships between environmental factor and SMEs performance in UAE?

And the research hypotheses are as follows:

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

H_8: ABC implementation critical success factors mediates the relationship between technological factor and SME performance in UAE.

H_9: ABC implementation critical success factors mediates the relationship between organizational factor and SME performance in UAE.

H_{10}: ABC implementation critical success factors mediates the relationship between environmental factor and SME performance in UAE.

Based on the premises that the current study employed SmartPLS as the data analysis software, the bootstrapping method, which shows a more rigid estimation with a high-performance level (Chin, 2010; Hayes, 2009) was adopted to test the mediating effect of ABC adoption system in the study variable relationships. The results of the analyses are presented in Table 4.16.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Table 4.16

Mediating Effect Result

Hyp.	Hypotheses Effect	Path coefficient	Standard Error	T Stat.	Significance
H8	TF ->ABC-> SMEs_PERF	0.034	0.017	1.969	0.049***
H9	OF ->ABC-> SMEs_PERF	0.079	0.028	2.854	0.004***
H10	EF ->ABC -> SMEs_PERF	0.063	0.032	1.972	0.049***

Note: TF = Technology Factor, OF = Organizational Factor, EF = Environmental Factor, ABC = ABC Implementation Critical Success Factors, SMEs_PERF = SMEs Performance.

As presented in Table 4.16, the mediating effect of ABC implementation critical success factors system was evaluated on the relationship between the independent

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

variables and the dependent variable. The result of the mediation effect result shows that all the indirect effects are significant at 0.05 level of significance since neither of the 95% confidence intervals includes zeros as recommended by Hair et al. (2017). Although it is argued that it is not necessary to report the t value(s) and p value (s) when using bootstrap confidence intervals for significance testing, Hair et al. (2017) recommended it for the appropriateness and completeness of the analysis.

Based on the aforementioned recommendation, the path coefficient, t values and p values are estimated and reported. Hence, the eighth hypothesis (H8) which states that ABC implementation critical success factors mediates the relationship between technological factor and SME performance was tested. The result revealed that ABC implementation critical success factors partially mediates the relationship between technological factor and SMEs performance (β = 0.034, t = 1.968, p = 0.049). The partial mediating effect exists because, as earlier presented in Table 4.16, the relationship between technological factor and SMEs performance is statistically significant. Therefore, it is concluded that ABC adoption partially mediates the relationship between technological factor and SMEs performance. Hence, H8 is supported.

Similarly, the result of the ninth hypothesis (H9) which states that ABC implementation critical success factors mediates the relationship between organizational factor and SME performance was tested. The result of the mediation analysis indicates that the relationship between organizational factor and SMEs performance is partially mediated by ABC implementation critical success factors (β = 0.079, t = 2.854, p = 0.004). The existence of partial mediation is also related to the fact

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

that there is a statistically significant relationship between organizational factor and SME performance as presented in Table 4.16. Therefore, it also affirmed that ABC implementation critical success factors partially mediates the positive significant relationship between organizational factor and SMEs performance. Thus, H9 is supported and accepted.

Further, the result of the tenth hypothesis (H10) which states that ABC implementation critical success factors positively mediates the relationship between environmental factor and SME performance was also tested. The findings of the analysis revealed that the relationship between environmental factor and SMEs performance is fully mediated by ABC implementation critical success factors (β = 0.063, t = 1.972, p = 0.049) because the direct relationship between environmental factor and SMEs performance was found to be statistically insignificant in the direct path as presented in Table 4.16. Hence, this result leads to the acceptance of H10 which states that ABC implementation critical success factors mediates the relationship between environmental factor and SMEs performance. Consequently, H10 is supported.

Concerning the expansion of the mediation effect, since the direct effect of environmental factor does not influence SMEs performance, this study concludes that the form of mediation that exists in the relationship between environmental factor and SMEs performance is an indirect mediation which represents a fully mediation. Since the direct effect is found to be insignificant, the current study provides empirical evidence for the mediating role of ABC implementation critical success factors in the study model. More specifically, it was found that ABC implementation critical success factors represents a mechanism that underlies the relationship between technological

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

factor and SMEs performance, organizational factor and SMEs performance and environmental factor and SMEs performance.

4.10 Summary of the Hypotheses Results

Upon the presentation of the results of the hypothesized relationships in the earlier discussions of this chapter, it is important to summarize such findings. Hence, out of 10 formulated hypotheses, 9 hypotheses were supported whereas one of the remaining hypotheses was found to be not supported. The summary of the hypotheses results is depicted in Table 4.17:

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Table 4.17

Summary of the Hypotheses

Hypotheses	Hypothesized Path	Decision
Direct Relationships		
H1	TF -> SMEs_PERF	Supported
H2	OF -> SMEs_PERF	Supported
H3	EF-> SMEs_PERF	Not Supported
H5	ABC -> SMEs_PERF	Supported
H5	TF -> ABC	Supported
H6	OF -> ABC	Supported
H8	EF -> ABC	Supported
Mediating Effects		

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Hypotheses	Hypothesized Path	Decision
Direct Relationships		
H8	TF ->ABC-> SMEs_PERF	Supported
H9	OF ->ABC->SMEs_PERF	Supported
H10	EF ->ABC ->SMEs_PERF	Supported

Note: TF = Technology Factor, OF = Organizational Factor, EF = Environmental Factor, ABC = ABC Implementation Critical Success Factors, SMEs_PERF = SMEs Performance

4.11 Summary of the Chapter

In summary, the focus of this chapter is on techniques and modes of data analysis with the findings/results. The researcher explained and outlined various preliminary analyses conducted in this study after presenting the objectives of this chapter. Following that, the demographic information of respondents was discussed before the major data analysis. The researcher further evaluated the measurement model and structural model by assessing the reliability of individual items, as well as the internal consistency, reliability, and validity of the reflective models and coefficient of determination, effect size, predictive relevance as well as hypothesis testing. Finally, the findings of the analysis were summarized.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

CHAPTER 5

DISCUSSION AND FINDINGS

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

5.1 Introduction

The interaction between the endogenous and exogenous factors was covered in this chapter. The exogenous variables included technological factor, organizational factor, environmental factor, ABC implementation critical success factors, whereas the endogenous variables are SMEs performance and ABC implementation critical success factors. Besides that, this chapter discussed the findings of data analysis in detail. The theoretical and practical implications were further discussed. Besides, this chapter explained the limitations and proposed suggestions for future studies. Finally, the chapter concluded the whole study.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

5.2 Recapitulation of Findings

The predictors of ABC implementation critical success factors and SMEs performance in UAE, namely technological factor, organizational factor, environmental factor, and ABC implementation critical success factors are inspected in this study. The mediating roles of ABC implementation critical success factors in the relationships among the variables in this study were also investigated.

This study intends to answer the following ten research questions so that the objectives of this study are achieved:

1. Is there any relationship between technological factor and SMEs performance in UAE?
2. Is there any relationship between organizational factor and SMEs performance in UAE?
3. Is there any relationship between environment factor and SMEs performance in UAE?
4. Is there any relationship between the ABC implementation critical success factors and SMEs performance in UAE?
5. Is there any relationship between technological factor and the ABC implementation critical success factors by SMEs in UAE?
6. Is there any relationship between the organizational factor and the ABC implementation critical success factors by SMEs in UAE?
7. Is there any relationship between environment factor and the ABC implementation critical success factors by SMEs in UAE?

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

8. Does the ABC implementation critical success factors mediate the relationships between technological factor and SMEs performance in UAE?
9. Does the ABC implementation critical success factors mediate the relationships between organizational factor and SMEs performance in UAE?
10. Does the ABC implementation critical success factors mediate the relationships between environmental factor and SMEs performance in UAE?

This cross-sectional study applied both the TOE framework and RBV theory in examining the predictors of ABC implementation critical success factors and SMEs performance level. The responses from SMEs in UAE to the questionnaires were relied upon. The questionnaires were disseminated, and the responses were collected from SMEs in UAE. A total of 274 responses were collected with the response rate of 71.4%. Prior to data analyses, the data were screened for missing data, outliers, normality, and common method variance. There were no missing data found in this study since the items of the questionnaire were set to be responded compulsory. Furthermore, seven outliers were identified and deleted from the study. Also, there was no issue with normality since the inspection of the skewness and kurtosis of the variables indicated that the data were not intensely non-normal.

A supplementary step, the Harman's single factor test was used to test the presence of common method variance among the responses. Based on the results, it disclosed that the largest factor accounted for 33.02% out of a total variance of 67.40% of all measurement items. Other than the Harman's single factor test, the presence of common method variance was also determined via the correlation among the variables. It was found that none of the variables were correlated with each other for more than

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

0.90. As a result, it was affirmed that the common method bias was not a concern in this study.

In synchronizing with the PLS-SEM analysis, the measurement model was examined first, followed by the structural model. The intention of assessing the measurement model is to inspect the validity and reliability of the constructs. The PLS algorithm was run to yield the outer loadings, composite reliability, and AVE of every construct. The construct validity of the constructs was assessed by investigating the convergent and discriminant. Convergence validity was inspected by studying the outer loadings and AVE of every construct whereas discriminant validity was evaluated by contrasting between the squared root of the AVEs and the inter-correlations of the constructs. Discriminant validity was also assessed by checking the HTMT value with the criterion of HTMT.90 and the HTMT.85. Besides, the 90% bootstrap confidence interval of HTMT was reviewed to determine if the value of 1 is straddled in between the confidence interval. At the same time, the reliability of the constructs was inspected by reading at the composite reliability of every construct. The assessment of the measurement model exhibited that the convergence validity, discriminant validity, and reliability were all-sufficient.

Next, the structural model was inspected to test the hypothesized relationships between the variables. Collinearity evaluation was assessed as part of the structural model, and it was found that collinearity was not a concern in this study. The R^2, path coefficients, t values, and the bootstrapping confidence intervals were obtained by running the PLS algorithm and bootstrapping. Out of a total of 10 hypotheses, 9 hypotheses were supported. Moreover, the direct effect sizes were examined to enrich

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

the statistical significance testing. The predictive relevance of the model was also investigated and the model in this study was shown to be predictively relevant. Further, the q2 effect size was manually calculated to determine the extent of predictive relevance from the exogenous construct toward a particular endogenous construct.

In testing the direct effect relationships between the independent variables and technological factor (H1) and organizational factor (H2), a significant positive relationship with SMEs performance was found. In contrast, according to the results of H3, environmental factor did not have any significant relationship with SMEs performance in UAE.

In the relationships between the ABC implementation critical success factors and SMEs performance in UAE, it was identified that ABC implementation critical success factors (H4) was in a significant positive relationship with SMEs performance. Similarly, technological factor (H5) was found to have a significant positive relationship with ABC implementation critical success factors. It was also determined that organizational factor (H6) possesses a significant and positive relationship with ABC implementation critical success factors. Finally, the study found that environmental factor (H7) has a significant positive relationship with ABC implementation critical success factors.

After examining the direct effects, the indirect effects were also inspected. In testing the mediating roles of ABC implementation critical success factors, it was found that ABC implementation critical success factors mediates the relationships between technological factor (H8), organizational factor (H9) and environmental factor (H10),

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

and SMEs performance in UAE. The subsequent section entails a comprehensive analysis of the study's findings, along with an elucidation of each hypothesis that was either substantiated or refuted. It includes discussion on direct effect and indirect effect.

5.3 Discussion of Findings

Findings of the study highlighted that, H1, H2, H4, H5, H6, H7, H8, H9, and H10 were supported, whereas no support was found for H3. This study is based on TOE framework and Resource-Based View Theory to establish an integrative conceptual framework that highlights the antecedents of SMEs performance. The empirical results show that the factors considered in this study have different impacts on SMEs performance. For all the relationships investigated in this study, thorough explanations are provided in this section. The explanations help in answering the ten research questions, which were tested through the 10 hypotheses. Out of the 10 hypotheses, 9 were supported. Hence, a holistic discussion of the hypotheses is presented in the subsequent sub-sections to enlighten the reasons behind the findings of this study.

Findings of the study are generally consistent with the RBV because technological factors, organizational factors and environmental factors are the major resources of business activities. According to RBV, resources of the business have positive role to promote performance. Similarly, the results of the current study also highlighted the positive role of technological factors, organizational factors, and environmental factors on SMEs performance. Finally, ABC implementation critical

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

success factors is also another resource of the SMEs which can lead to higher performance.

5.3.1 Relationship Between Technological Factor and SMEs Performance in UAE

The first objective of this study is "To examine the relationship between technological factor and SMEs performance in UAE". To achieve this objective, a correspondence hypothesis was formulated which states: There is a positive relationship between technological factor and SMEs performance in UAE. The hypothesis was further evaluated using Variance-Based structural equation modelling.

The results demonstrated that the technology component has a favourable and substantial influence on the performance of small and medium-sized enterprises (SMEs). Prior research has also emphasised the technology factor as a crucial element in improving a company's overall commercial performance (Yunis et al., 2018). These findings of this study are consistent with the previous studies (AlSharji et al., 2018; Chege & Wang, 2019, 2020; Pan & Jang, 2008; Ramdani et al., 2013). Findings gives support to the assumption of TOE framework which states that technological factor forms an indispensable part of the whole organizational competitive advantage that enhances task, targets, and performance of organisations (Ismail & Mahmoud, 2012).

In addition, technological resources remain the basis of a new era of organizational competitive advantage (Palacios-Marqués et al., 2015). Technological factors are seen as a tool in managing organizational capabilities, whereas firm's human

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

resource constitutes the drivers of such capabilities (Ismail et al., 2007). The assumption of Resource-Based View theory of value, rareness, inimitability, and substitutability cannot be achieved without the influence and contribution of the technological capabilities of the organization (Popa et al., 2022). Such findings revealed that an organization should recognize that the adoption and implementation of technology will provide solutions to the organizational existing problems and offer new opportunities for production which will further enhance its performance (Al-Ansari et al., 2013). In addition, this finding purported that enhanced organizational performance and organizational accomplishment are contingent upon its technological availability (Masa'deh et al., 2018). Hence, it can be asserted that technological factor increases information flows both within and outside firms by removing interaction obstacles and enhancing the interconnection of corporate networks, thereby promoting creativity and enhancing organizational performance (Giannakis & Papadopoulos, 2016; Soto-Acosta et al., 2017; Vendrell-Herrero et al., 2021).

5.3.2 Relationship Between Organizational Factor and SMEs Performance in UAE

The second hypothesis formulated stated that there is a positive relationship between organizational factor and SMEs performance in UAE. Evaluating through the same variance based on the structural equation modelling approach, the result revealed that organizational factor positively and significantly impacts SMEs performance. This finding is in line with the previous studies by AlSharji et al. (2018) conducted in UAE, Ramdani et al. (2013) carried out in England, and Pan and Jang (2008) conducted in the communication industry in Taiwan which indicate a significant relationship

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

between organizational factors and the performance of SMEs. This new context of UAE has added to knowledge by proving the same result as those initially conducted outside the current setting.

The results also show that organizational resources play an important role in the success and performance of an organization. This result is consistent with the assumption of RBV theory. The same applies to TOE framework which postulates that organizations would achieve competitive advantages and high performance through organizational distinct and inimitable factor such as the development and effective deployment of physical, human, and organizational resources (Acar & Polin, 2015; Barney, 1991; Gupta et al., 2018). An entrepreneurial-oriented organization is more likely to provide a supportive working environment, encourage employees to discover new ideas, and empower employees with resources for innovation, thereby benefiting the organization's innovation activities and aiding in improving innovation performance (Erind, 2015; Hoq & Chauhan, 2011). This finding may be also situated within the line of extant literature demonstrating that, among the key catalyst of performance, organizational factor is deemed to provide the most gains to an organization.

5.3.3 Relationship between environmental factor and SMEs performance in UAE

The third hypothesis formulated stated that there is a positive relationship between environmental factor and SMEs performance in UAE. Upon the analysis of this hypothesis, the result showed a contrary outcome compared with the previous findings highlighted above. The result of the analysis shows that environmental factor has

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

insignificant effect on SMEs performance in UAE. This finding is inconsistent with the findings of some extant literature such as Nair and Tan (2018), Cao et al. (2014), Ramdani et al. (2013) and AlSharji et al. (2018) whose findings indicated a significant relationship between environmental factor and organizational performance. However, the findings are not in line with the result of Popa et al. (2022) who found that environmental factor or context has no significant impact in enhancing organizational performance and innovativeness. One of the justifications for the inconsistency of the current findings and that of extant literature could be related to the industry/sector under consideration, contextual background, and organizational size. Another explanation for such findings is also related to the fact that changing environmental factor may force businesses to involve in exploitative and exploratory activities (Soto-Acosta et al., 2017), which influence the operational activities of the business rather than its performance (Chang et al., 2020; Soto-Acosta et al., 2017). Besides, the findings are not in tandem with the assumption of TOE framework which also described environmental factor as a catalyst for organizational performance enhancement.

The observed disparity between the research findings, which suggest a lack of direct influence of environmental factors on the performance of SMEs in Dubai and Abu Dhabi, and prior studies that have identified a positive impact in different nations (Agustin, Tarigan, & Hermina, 2021; Awang et al., 2009; Qalati et al., 2022), may be ascribed to many factors. For instance, Dubai and Abu Dhabi exhibit distinctive economic, social, and regulatory environments that deviate considerably from the nations in which prior research endeavors were undertaken. These variations can have an impact on the manner in which environmental factors influence SMEs. Regional disparities in SMEs' performance can be attributed to several factors, including

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

variations in economic development, industry makeup, and government regulations. SMEs contain a diverse array of businesses, varying in terms of their size, industry affiliation, and organizational structure. There is a potential for divergence between the subject matter experts of SMEs in Dubai and Abu Dhabi, as compared to their counterparts in other nations, which may result in a reduced susceptibility to environmental influences.

Moreover, variations in environmental rules, incentives, and enforcement mechanisms throughout Dubai, Abu Dhabi, and other nations might potentially influence the manner in which SMEs perceive and react to environmental variables. In certain nations, the presence of stringent rules has the potential to serve as a catalyst for SMEs to enhance their environmental performance. Conversely, in other countries where regulations are comparatively less stringent, the resulting outcomes may diverge. Moreover, the success of SMEs is characterized by its multidimensionality, which may be attributed to a range of factors such as market conditions, management techniques, and financial resources. The influence of environmental influences on performance in Dubai and Abu Dhabi may not be as prominent compared to other countries, where same elements could exert a more substantial effect.

5.3.4 Relationship Between ABC Implementation Critical Success Factors and SMEs Performance in UAE

The fourth hypothesis formulated stated that there is a positive relationship between ABC implementation critical success factors and SMEs performance. The findings of this study discovered that ABC implementation critical success factors has a positive

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

and significant effect on SMEs performance in UAE. However, a study by Ahmad et al. (2017) showed that ABC implementation critical success factors has no positive and significant effect on SMEs performance because lack of resources, expertise, and cost factor are the main reasons for the rejection of ABC system in SMEs. Further, the current study is in line with Aldukhil (2012), Chege and Wang (2020) and Dubihlela and Omoruyi (2014) who showed that ABC implementation critical success factors has a positive and significant effect on SMEs performance. Their findings further showed that ABC implementation critical success factors significantly influences management evaluation of ABC success: training, differentiation strategy, non-accounting ownership, ABC-based actions, activity efficiency, and process cost improvement. In general, it is a norm that SMEs will encourage their employees to accept more in ABC implementation critical success factors to realize their full potential. ABC implementation critical success factors is crucial to enable an organization to create new products or services successfully and modify existing processes efficiently because mastery of knowledge is very important to innovation. As a result, the impact of the transfer of training enables employees to gain new knowledge and skills, which in turn enhances performance among SMEs in the UAE.

5.3.5 Relationship Between Technological Factor and ABC Implementation Critical Success Factors

The fifth hypothesis formulated stated that technological factor has a positive and significant effect on ABC implementation critical success factors. It has been discovered over time that the majority of the studies on ABC adoption and implementation show the significance of organizational factors in the achievement of

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

successful adoption or implementation for the SMEs. Therefore, this study is not excepted by showing through its finding that technological factor has a positive and significant effect on ABC implementation critical success factors in UAE. This finding is in line with several previous studies (Ahmad et al., 2017; Brown et al., 2004; Maelah & Ibrahim, 2006). Awa et al. (2017b) also found that technology has an influence on technology adoption. In their studies, Fei and Isa (2010) and Ahmad et al. (2017) argued that technology can make or mar the successful implementation of ABC. Indeed, technology acceptance in organizations can improve their organizational performance in terms of ABC implementation critical success factors. Therefore, SMEs in UAE should be more innovative, risk-taking, and proactive to improve innovation performance. It is believed that an organization with strong technology is more likely to have more resources allocated for innovation activities and apply high risk but high reward strategies to stay competitive. Hence, technology should be treated as an essential strategy to be implemented in an organization, especially SMEs in UAE.

5.3.6 Relationship Between Organization Factor and ABC Implementation Critical Success Factors

The sixth hypothesis formulated stated that organizational factor has a positive and significant effect on ABC implementation critical success factors. The findings of this study showed that organizational factor has a positive and significant effect on ABC implementation critical success factors. This is in line with the findings of Ahmad et al. (2017) who examined the factors influencing the implementation of ABC in the Malaysian SME sector. Their finding revealed that the organizational factors such as management support and organizational resources have a significant influence on the

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

adoption and implementation of ABC in the Malaysian SME sector. Further, Awa et al. (2017a) found that an organization has an influence on technology adoption in Nigeria. The findings of this study imply that SMEs in UAE focus their organizational factor in improving SMEs performance. In these SMEs, actively gathered new information and knowledge, share information among the employees, and make sure all employees understand all the processes of their innovation task. Hence, the finding of the study provides empirical evidence that organizational factor is a key driver of performance and this is aligned with the UAE business context. In short, SMEs in UAE have some forms of a proper structure to ensure that organizational learning takes place in the organization, which in turn, enhances performance in SMEs in UAE.

5.3.7 Relationship Between Environmental Factor and ABC Implementation Critical Success Factors

The seventh hypothesis formulated stated that environmental factor has a positive and significant effect on ABC implementation critical success factors. The finding of the study revealed that environmental factor has a positive and significant effect on ABC implementation critical success factors. This result supports the findings by Nair and Tan (2018) who confirmed that external environment has an influence on ABC implementation by SMEs in Malaysia. Also, Ramdani, Chevers, and Williams's (2013) result showed that environmental factor has a positive and significant effect on ABC implementation critical success factors. The environmental factor would influence the adoption of ABC. In fact, SMEs are not affordable to rely entirely on their resources and research for conducting their innovation due to the limited financial and human capital. Therefore, it is not surprising that SMEs depend more on environmental factor

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

collaboration to become more innovative and gain more competitive advantages, thus leading to better innovation performance among SMEs in UAE.

5.3.8 Mediating Role of ABC Implementation Critical Success Factors

The association between a predictor variable and a criterion variable is explained by a mediator variable, in accordance with Baron and Kenny (1986). We learn how or why something works from mediators. The mediator is regarded as an intervening variable that clarifies how one predictor variable and one criterion variable are related. In this section, the indirect relationship between constructs is discussed. The discussion of the mediating effect of ABC implementation critical success factors on the relationship between technological factor, organizational factor, and environmental factor on SMEs performance in the UAE is further explained.

5.3.8.1 Mediating Role of ABC Implementation Critical Success Factors on Technological Factor and SMEs Performance in UAE

The eighth hypothesis formulated stated that ABC implementation critical success factors mediates the relationship between technology factor and SMEs performance in UAE. Though studies showed a positive and significant relationship between technological factor and SMEs performance as stated by Ahmad et al. (2017), Awa et al. (2017a), Fei and Isa (2010), Brown et al. (2004) and Maelah and Ibrahim (2006), the present study went further to establish whether ABC implementation critical success factors mediates the relationship that existed between technological factor and

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

SMEs performance. The finding of this study proved that ABC implementation critical success factors mediates the relationship between technology factor and SMEs performance in UAE. This result is in line with the past studies (Albalaki et al., 2018; Elhamma & Zhang, 2013; Fei et al., 2017; Rasid et al., 2011; Xiao et al., 2011). This result proved that ABC implementation critical success factors is one of the significant factors that UAE can use to improve SMEs performance. Furthermore, UAE Government can enhance the contribution and performance of the SME sector through ABC implementation critical success factors. It is taking a major role in establishing initiatives and programmes to help SMEs performance in the country based on the outcome of the study.

This finding thus signified that MAIs is indispensable to the attainment of organizational performance. TOE framework impact on organizational performance can be enhanced through mechanism of ABC implementation critical success factors. Similarly, RBV theory also highlighted the positive contribution of resources to the performance. The results of the study are also consistent with the RBV because technology, organization and environmental factors are the important intangible resources which help to promote SMEs performance. ABC implementation critical success factors unravels the vagueness in the relationship between the TOE and organizational performance. This thus expands and enriches TOE-performance framework. ABC system involves a move from a precisely financial approach to a new system perspective consisting of financial and non-financial information and acts as a competitive mechanism that assists an organization to sustain its stand in the competitive market.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

5.3.8.2 Mediating Role of ABC Implementation Critical Success Factors on Organizational Factor and SMEs Performance in UAE

The ninth hypothesis formulated stated that ABC implementation critical success factors mediates the relationship between organizational factor and SMEs performance in UAE. The basis for the formulation of this hypothesis was based on the fact that Baron and Kenny (1986) and Hair et al. (2017) opined that there are chances of having a certain construct to be a mediator or intervening variable if there is an established relationship between the independent variable and the mediating variable, and between the mediating variable and dependent variable. The present study found that ABC implementation critical success factors mediates the relationship between organizational factor and SMEs performance in the UAE. This result supports the findings by Mahmood Albalaki et al. (2019) and Hardan and Shatnawi (2013). This results no doubt has helped show that ABC implementation critical success factors help strengthen the relationship that exists between organizational factor and SMEs performance in the UAE.

This finding solidifies the existing literature (Bakhsh et al., 2019), that MAIs particularly the ABC system is influenced by technology, organizational and environmental factors, and that it impacts performance. Therefore, it could be claimed that if SMEs owners/managers adopt MAIs, there could be rise in their business performance, given that ABC system is a MAIs tool which provides a means to create a more accurate representation of how activities are performed in the creation of a product or a service that influences its cost and act as a basis for making strategic decisions for enhancing profit maximization (Ahmad et al., 2017).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

5.3.8.3 Mediating Role of ABC Implementation Critical Success Factors on Environmental Factor and SMEs Performance in UAE

The tenth hypothesis formulated stated that ABC implementation critical success factors mediates the relationship between environmental factor and SMEs performance in UAE. The study found that indeed ABC implementation critical success factors mediates the relationship between environmental factor and SMEs performance in UAE. This is in line with the finding of Fei et al. (2017), Elhamma and Zhang (2013), and Rasid et al. (2011). This result goes a long way to further support the finding by AlSharji et al. (2018) and Ruivo et al. (2016) on the direct relationship between environmental factor and SMEs performance in UAE and can be further strengthened by ABC implementation critical success factors. Also, it has been established based on the above discussion that different factors, such as technology, internal organizational, and environmental factors influence ABC adoption and, similarly, the adoption and application of ABC system further enhance SMEs performance in UAE.

Overall, the findings about the mediation role of ABC implementation critical success factors establish the crucial role of ABC implementation critical success factors in enhancing organizational performance. ABC implementation critical success factors is found to be a significant mechanism through which the 'black box' in-between TOE-performance connection. This has thus expanded the TOE-performance theory. Additionally, results are also expanded the RBV theory. This study suggested adding technological factors, organizational factors and environmental factors to the RBV theory to enhance the business performance. In addition, the findings enrich the existing body of knowledge that if SMEs owners/managers adopts MAIs, there could be rise in their business performance, Due to the fact that the ABC system is an MAIs tool, it

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

offers a way to build a more realistic picture of how actions carried out in the manufacture of a good or service affect its price and serve as a foundation for strategic decisions to increase profit maximization.

5.4 Conclusion of Findings

The overall results of the study suggest that the variables related to Technology, Organisation, and Environmental factors (TOE) have a positive impact on the performance of Small and Medium Enterprises (SMEs). It is worth noting that the environmental component did not have a significant influence on the improvement of SME performance directly. However, it has effect on SMEs performance through ABC implementation critical success factors. Therefore, it is indirect effect on SMEs performance through ABC implementation critical success factors. There exists a potential for enhancing the performance of SMEs in Dubai and Abu Dhabi through fostering the advancement of technological aspects within the SME community. There is a growing significance in focusing on organisational variables, since they have a comparable impact on performance promotion as technology aspects. Consequently, the performance-related issues encountered by SMEs operating in Dubai and Abu Dhabi can be effectively mitigated by strategically implementing technology and organisational elements.

In addition, it is important to note that environmental factors exert a significant influence on the operational outcomes of SMEs. The performance of SMEs is indirectly influenced by environmental factors due to the ABC implementation of essential

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

criteria for success. The significance of each of the TOE variables in enhancing the performance of SMEs is evident. Therefore, technological and organizational factors have direct effect on SMEs performance, however, environmental factors have not direct effect, but it has effect on SMEs performance through ABC implementation critical success factors.

Furthermore, it is worth noting that the incorporation of critical success elements serves as a mediator in the relationships between the variables of Technology-Organization-Environment (TOE) framework and the performance outcomes of SMEs. Nevertheless, the ABC implementation critical success factors represent a significant approach via which TOE variables can enhance the operational efficiency of SMEs. While one may argue that a firm's competitive advantage and improved performance can be attributed to technological and organisational resources, as well as environmental factors, it is also valid to assert that improved performance is the outcome of enhanced performance through which ABC implementation critical success factors play an important role.

5.5 Contributions and Implications of the Study

The current work presents the significant theoretical and practical contributions as well as the consequences that can be helpful to both academics and practitioners. Here is a discussion of the contributions and implications.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

5.5.1 Theoretical Contributions

This study has added knowledge to SMEs performance in UAE regarding the direct relationship between ABC implementation critical success factors, technological factor, organizational factor, and environmental factor on SMEs performance. The study findings indicate that the environmental factor does not make a significant impact on SMEs in the UAE. Consequently, this research framework incorporates multiple constructs, including technology factor, organisation factor, environmental factor, and ABC implementation critical success factors to ensure the better performance of SMEs. The reasons for choosing these variables are because they are a superior platform that can help in acquiring valuable information and knowledge from customers which assist the development of products or services and indirectly impact the SMEs performance of an organization in UAE.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Second, this study contributes by examining ABC implementation critical success factors as a mediator between the independent variables (technological factor, organizational factor, and environmental factor) and dependent variable (SMEs performance). There are empirical studies that have examined the relationship between technological factor, organizational factor, environmental factor and ABC implementation critical success factors and SMEs performance in UAE (Ahmad et al., 2017; Awa et al., 2017a; Chin, 2010; Maelah & Ibrahim, 2006). Unfortunately, the context of ABC implementation critical success factors that acts as a mediator is scanty. Therefore, the purpose of this study is to add knowledge to the mediating role of ABC implementation critical success factors in the relationship between the independent variables and dependent variables among SMEs. The findings indicated that ABC

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

implementation critical success factors acts as a mediator to strengthen the relationship between technological factor, organizational factor, environmental factor, and SMEs performance.

The present study has also contributed RBV. According to RBV, firms have resources, some of which give them a competitive advantage and others which improve long-term performance. If your company is able to shield itself from resource imitation, transfer, or substitution, having precious and unique resources can help you achieve a competitive edge that you can hold onto for a long time. The resource-based perspective has generally been supported by empirical research based on the theory. Theoretically, this study proposes the extension of RBV based on results of survey. According to RBV, resources are the most important elements of success for SMEs performance. The results of the study are also consistent with the RBV. Along with the other resources, such as TOE, ABC implementation critical success factors are the key element of SMEs performance and ABC implementation is also one of the intangible resources of the SMEs. Therefore, implementation of critical success factors should also be included in the framework of RBV. The implementation of an ABC system in SMEs is substantially impacted by the incorporation of a MIS, which contributes to improved performance. By furnishing SMEs with analytical tools and real-time data, MIS enables the smooth incorporation of the ABC methodology. The enhanced precision of cost allocation brought about by this synergy empowers SMEs to make well-informed decisions and optimise the allocation of resources. Financial transparency is promoted by the combination of MIS and ABC, which enables organisations to identify cost drivers and improvement opportunities. In general, the synergistic effect of MIS and ABC enhances

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

the capacity of SMEs to implement economical procedures, formulate strategic choices, and ultimately soar above the competitive business environment.

Other than that, this study also contributes to the works of literature by using the TOE framework which described how the innovation and diffusion that an organization possesses could contribute towards the benefit of the organization. The TOE framework is used to analyze organizations on a macro level. Instead of focusing on specific business actions, the paradigm places more emphasis on higher-level attributes (such as technological, organizational, and environmental aspects). It is a theoretical framework that describes how technology adoption occurs in organizations and shows how the technological, organizational, and environmental settings affect how technological breakthroughs are adopted and used. Although though this distinction between organization level theory and person level theory is well known, it makes it more difficult to look into higher-level features. Information is unavoidably distorted by the viewpoints of those who can only be interviewed within the target company.

In addition to providing support for the RBV and TOE frameworks, the research also validates the hypothesised relationships that were investigated. By establishing the relationships through the application of TOE framework in addition to the RBV. The establishment of significant relationships in this study has facilitated the investigation of additional relationships among the variables by future researchers.

Future researchers will benefit largely from this present study because it will guide them on how and where to focus their research. Past studies have shown that technology, organization, and environmental factor have a positive and significant

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

effect on SMEs performance, but no study was able to further study whether ABC adoption strengthens such a relationship. This study, therefore, took a leading role by examining the mediating role of ABC implementation critical success factors on the relationship between technology, organization, and environmental factor and SMEs performance in Dubai and Abu Dhabi only.

5.5.2 Practical Contributions

Besides theoretical contribution, this study also provides practical implications to SMEs, government, and policymakers. In this study, some of the variables are found to have a significant relationship in SMEs performance. In contrast, one of the variables, was found to have a non-significant relationship on SMEs performance. As a result, SMEs, government, and policymakers should be aware of the important variables to an organization in UAE. The study's conclusions act as a manual for SME managers and owners and can help them comprehend the components necessary for successful SME performance that supports the long-term viability of their company.

SMEs in Dubai and Abu Dhabi should judiciously embrace and spend money on organizational upgrades, environmental sustainability initiatives, and technology. This can entail modernizing their IT setup, adopting digitization, and introducing sustainable business practices. To further enhance their cost management and allocation procedures, SMEs might think about introducing ABC solutions. Making better decisions and obtaining more accurate cost information are possible by identifying and ranking the essential success elements for ABC implementation. To ensure that its staff

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

members can successfully integrate and manage new technology and organizational changes, SMEs should also invest in training and skill development programs for employees. This is crucial when implementing sophisticated technologies or intricate cost accounting techniques like ABC. To help SMEs in Dubai and Abu Dhabi to adopt TOE components and implement ABC, policymakers and industry associations should provide advice and support services. Providing resources and direction can assist SMEs in overcoming potential obstacles and hurdles. SMEs should set up systems for tracking and assessing their overall performance, ABC implementation, and TOE components on a constant basis. They can identify areas for development and modify their techniques as necessary with the aid of regular assessments.

Besides, the findings of the study indicated that technological factor and organizational factor are the key determinants of SMEs performance in UAE. Organizational factor provides good and supportive learning for employees and employees can acquire knowledge and skills from the training, and this will, in the end, affect SME performance. In terms of technological factor, if an organization is technology-oriented, the organization is more likely to offer a supportive working environment, encourage employees to discover new ideas, and empower employees with resources to innovation, which benefits the organization's activities, and help in improving the SMEs performance. Thus, SME owners and managers need to integrate these elements in their strategic planning to enhance their SMEs performance, and help the business remain competitive in the market.

The findings of the study will assist UAE agencies and institutions in understanding the mediating role of ABC implementation critical success factors as the

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

key drivers and exert a strong influence on the performance of SMEs in UAE. The government and policymakers should look at the involvement of external partners in facilitating MAIs activities such as ABC system among SMEs in UAE. For example, different programs such as program interchangeable knowledge among large organizations and SMEs should be conducted. The involvement of external partners in the innovation development can foster SMEs in creating a new product or service as SMEs lacked skills, expertise information, capital, R & D, and so on to improve the performance of SMEs in UAE. Therefore, with the assistance of external partners, all these constraints can be easily solved. In short, more programs relevant to technological know-how or information exchange should be carried out for SMEs, as it can help SMEs enhance performance which helps the businesses achieve long-term sustainability and viability in the competitive marketplace.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

The findings of the study also address the challenges faced by SMEs, particularly with small enterprises in UAE and explain the importance of adopting ABC among SMEs that in the long run will help stimulate ABC adoption and foster competitiveness among SMEs. Both variables can be a potential strategy if managed properly. For instance, too much information obtained from ABC adoption is hard for the organization to manage, which leads to low SMEs performance, but once SMEs acquire new skills and procedures for interpreting and evaluating the huge information derived from ABC adoption, it can be a very useful channel for SMEs performance in UAE. Other than that, if a strong ABC adoption is employed among SMEs, a greater innovation performance will be given to SMEs. Thus, SME owners or managers should play a key role in promoting the innovation of organizational culture within the organization. SMEs owners or managers need to be aware of the importance of ABC

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

adoption as the ability to embrace technology is one of the key factors to enable SMEs to react in a way that will secure their competitive position in the market.

There are critical success elements for SMEs when implementing ABC. Making sure the data is accurate and used properly to support informed decision-making is of utmost importance, and improving cost-effective data usage is a top priority. Consistent backing from top management is also critical, since it helps to link ABC's aims with the larger corporate objectives and secures the funding needed to put them into action. A more seamless adoption of ABC approaches can be achieved by active engagement of employees, which in turn requires training activities to develop a culture of understanding and collaboration. By giving these critical success factors top priority, SMEs may lay a solid groundwork for ABC implementation, which will improve performance by allowing for more precise cost evaluations.

The study further showed that independent variables (technology factor and organizational factor) in this study were significantly correlated to SMEs performance. At the same time, it is exhibited in the f^2 effect size that all the independent variables carry at least small effects on SMEs performance except environmental factor which has no effect on SMEs performance and organizational factor, which were manifested to possess a medium effect size on SMEs performance. Thus, this suggests that more attention should be paid to organizational factor since they have a greater effect on decreasing the burnout level.

Finally, the general belief and the purpose by which a government puts emphasis on SMEs is because they help boost the economy and create wealth and employment

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

for the citizens of the country. The SMEs sector, which makes up more than 94 percent of all businesses operating in the nation, employs more than 86 percent of the private sector's labor force. Almost 95% of businesses are SMEs, which employ 42% of the labor force and provide about 40% of the city's GDP. The government should intensify efforts and emphasis more on technology and organizational factor to promote SMEs operation in the country because of their relevance in the result of the study. Hence, SME performance in Dubai and Abu Dhabi can be improved by embracing technology, enhancing organizational procedures, and implementing eco-friendly practices. Furthering their success is the deployment of ABC implementation success factors with an emphasis on crucial vital influencing elements. The results demonstrate the value of an all-inclusive strategy for business management and growth and provide insightful information for SMEs and stakeholders in these areas.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

5.5.3 Methodological Contribution

Another methodological novelty of this study is the application of PLS path modeling to examine the psychometric characteristics of each latent variable. With regard to convergent and discriminant validity, the current study was particularly successful in assessing the psychometric characteristics of each latent variable. The psychometric variables looked at included individual item reliability, average variance extracted (AVE), and composite reliability of each latent variable. For the purpose of determining convergent validity, the AVE value for each latent variable was analyzed. Also, the square roots of AVE were used to compare the correlations between the latent variables and discriminant validity. The outcomes of the cross-loadings matrix were also

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

examined to find evidence in favor of the conceptual model's discriminant validity. Because of this, this study was able to assess the psychometric properties of each latent variable depicted in its conceptual model by using one of the most reliable approaches (PLS route modeling).

The current study has several methodological implications. One of the methodological implications is the use of situation-specific measures to assess the criteria variables. To address a methodological gap, the current study evaluated ABC implementation critical success factors construct-based scale. Furthermore, in order to truly capture the degree to which ABC implementation critical success factors mediates the relationship between TOE and SMEs performance. Further, this study refined and evaluated the measure of organizational factor, environmental factor, and technology factor and SMEs performance in the context of the UAE, which is different in the context of UAE.

Moreover, the present study has added to the field of knowledge under ABC implementation critical success factors by employing SmartPLS to analyse the collected data of the study. Past studies such as Al-Nuaimi et al. (2017), Albalaki et al. (2018) and Fei et al. (2017) have employed different methods of analysis with different outcomes. In this study, the analysis is concerned with testing a theoretical framework from a prediction perspective, whereby the structural model is complex and includes many independent variables, mediator in model relationships, the population restricts the sample size (Dubai and Abu Dhabi) and the research objective is to better understand increasing complexity by exploring theoretical extensions of established resource based view (RBV) and TOE framework.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

5.5.4 Limitations of the Study

In this section, the limitation of the study was discussed. Even though this study has included substantial theoretical and practical implications, there are still several limitations in this study to be addressed in future studies.

The first limitation of the study was related to the research design. Due to time constraints, the cross-sectional design was followed, which is the measurement of the sample at a certain time. Besides, the survey depends on the single respondent, which is the owner and/or manager of SMEs and this can also cause issues with the validation and verification of the results as self-report might be subjected to social desirability bias.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

The second limitation was the way to get a large sample size. In this study, a total of 274 responses were successfully collected from SMEs in Dubai and Abu Dhabi. However, this number of collections was not representative of the whole population of SMEs in Dubai and Abu Dhabi. The challenge of getting a response from the respondents via questionnaire methods was challenging. Even though SMEs were listed in the database as active operating, most SMEs were inactive and most of the addresses were not updated. Besides, the data collection was getting harder for the researcher due to the impact of the COVID-19 pandemic, and many SMEs were unable to participate in the study as some of the respondents indicated that they closed down their companies, and their companies' ceased operations.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Next, the study is also confined to a particular organizational size and country. The sample of this study was collected from SMEs in Dubai and Abu Dhabi. Therefore, the findings of this study might not be generalized to owners or managers from large companies or multi-national companies and other countries. Consequently, the external generalizability and validity of the study may be hindered.

Finally, ABC adoption is a new concept that can be further discussed. Even though it has been addressed in this study, there is still a lack of studies on its implementation among SMEs in the UAE. Perhaps the concerns of SME businesses should be deeply understood to help them improve their performance, particularly in Dubai and Abu Dhabi.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

5.5.5 Recommendations for Future Research

Besides the limitation discussed above, some suggestions are also stated to further understand the current topic, SMEs performance. The suggestions included the nature of the study, the number of sample sizes, the specific national involved and other potential variables to be proposed.

In order to generalize the findings, a longitudinal study is first suggested for a subsequent research project. This is due to the cross-sectional design of the current study, which measures a sample that was gathered over time, and the possibility that the self-report could be influenced by social desirability bias. So, it could be beneficial if future researchers do a longitudinal study to provide additional light on how

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

technology, organizational, and environmental factors affect ABC adoption among SMEs in the United Arab Emirates.

Furthermore, future research can include a large sample size as the number of collections in the current study was not representative of the whole population of SMEs in Dubai and Abu Dhabi. Thus, it is suggested to involve both online and offline methods when collecting data such as walk-in physically to companies and token appreciation should be given as well as the online email and other online methods.

Next, the sample in this study was limited to SMEs in Dubai and Abu Dhabi only. Therefore, the generalization of the present study's findings to other cultural and international contexts might be restricted. Hence, this study can be further replicated in other countries to acquire a more comprehensive understanding of enablers and their relationships with ABC adoption.

Another suggestion for future research can be extended in different ways. For instance, the research can investigate other potential antecedents in impacting ABC adoption among SMEs in Dubai and Abu Dhabi. Besides the factors (technology, organizational and environmental) that were investigated in the present study, other variables such as absorptive capacity and human capital can be potential variables in enhancing SMEs performance in Dubai and Abu Dhabi.

Apart from ABC adoption, the method of analysis and the population size, future studies should also consider the management skill as one of their variables because Another thing that prevents SMEs from expanding is a lack of management

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

expertise. Wide-ranging skill sets are needed when firms expand in order to manage both the technology operations and the workforce. Many managers specialize in a certain field but do not have the full range of skills to manage those operations. This suggests managerial skills as one of the research avenues that can help provide more insights into ways to further improve SMEs performance.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi
05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

REFERENCES

Aaker, D. A., Kumar, V., & Day, G. S. (2000). *Marketing Research* (7th ed.). John Wiley & Sons, Hoboken.

Abbas, J., Mahmood, S., Ali, H., Ali Raza, M., Ali, G., Aman, J., Bano, S., & Nurunnabi, M. (2019). The effects of corporate social responsibility practices and environmental factors through a moderating role of social media marketing on sustainable performance of business firms. *Sustainability, 11*(12), 3434.

Abd Aziz, N. N., & Samad, S. (2016). Innovation and competitive advantage: Moderating effects of firm age in foods manufacturing SMEs in Malaysia. *Procedia Economics and Finance, 35*, 256-266.

Abdelrahman, O. E., Abdullah, Z. B., & Abas, Z. (2017). Conceptual model of predictors of SMEs' performance in the context of Sudan. *Journal of Business and Social Review in Emerging Economies, 3*(2), 263-276.

Abdi, K., & Senin, A. A. (2014). Investigation on the impact of organizational culture on organization innovation. *Journal of Management Policies and Practices, 2*(2), 1-10.

Abeysekera, I., & Sharma, R. (2023). Activity-based costing technology adoption in Australian universities. *Frontiers in Psychology, 14*, 1168955.

Acar, W., & Polin, B. (2015). The ascent of resource-based theory as constructive rational-behavioral integration for looking inward and outward. *International Journal of Commerce and Management, 25*(4), 603-626.

Afsharghasemi, A., Zain, M., Sambasivan, M., & Imm, S. N. S. (2013). Market orientation, government regulation, competitive advantage and internationalization of SMEs: A study in Malaysia. *Journal of Business Administration Research, 2*(2), 13-22.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Agustin, K. I., Tarigan, H. b., & Hermina, N. (2021). The Influence of Consumer Behavior and Environmental Factors Through Business Strategies on Marketing Performance of MSMEs in West Java During the Pandemic Covid-19. *Psychology and Education Journal, 58*(3), 655-663.

Agyabeng-Mensah, Y., Ahenkorah, E. N. K., & Korsah, G. N. A. (2019). The mediating roles of supply chain quality integration and green logistics management between information technology and organisational performance. *Journal of Supply Chain Management Systems, 8*(4), 1-17.

Ahmad, K. (2014). The adoption of management accounting practices in Malaysian small and medium-sized enterprises. *Asian Social Science, 10*(2), 236.

Ahmad, K., & Mohamed Zabri, S. (2015). Factors explaining the use of management accounting practices in Malaysian medium-sized firms. *Journal of Small Business and Enterprise Development, 22*(4), 762-781.

Ahmad, K., Teng, N. W., & Zabri, S. M. (2017). The Implementation of activity-based costing in Malaysian small and medium-sized enterprises. *Advanced Science Letters, 23*(4), 3170-3173.

Ahmad, S. Z., Ahmad, N., & Bakar, A. R. A. (2018). Reflections of entrepreneurs of small and medium-sized enterprises concerning the adoption of social media and its impact on performance outcomes: Evidence from the UAE. *Telematics and Informatics, 35*(1), 6-17.

Ahmadi, S., Keshavarzi, A., & Foroutan, M. (2011). The application of information and communication technologies (ICT) and its relationship with improvement in teaching and learning. *Procedia-Social and Behavioral Sciences, 28*, 475-480.

Ahmadzadeh, T., Etemadi, H., & Pifeh, A. (2011). Exploration of factors influencing on choice the activity-based costing system in Iranian organizations. *International journal of business administration, 2*(1), 61-70.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Ahmed, A., Khuwaja, F. M., Brohi, N. A., Othman, I., & Bin, L. (2018). Organizational factors and organizational performance: A resource-based view and social exchange theory viewpoint. *International Journal of Academic Research in Business and Social Sciences, 8*(3), 579-599.

Akanni, P., Oke, A., & Akpomiemie, O. (2015). Impact of environmental factors on building project performance in Delta State, Nigeria. *HBRC journal, 11*(1), 91-97.

Akça, Y., & Özer, G. (2014). Diffusion of innovation theory and an implementation on enterprise resource planning systems. *International Journal of Business and Management, 9*(4).

Aksoy, H. (2017). How do innovation culture, marketing innovation and product innovation affect the market performance of small and medium-sized enterprises (SMEs)? *Technology in Society, 51*, 133-141.

Al-Ansari, Y., Altalib, M., & Sardoh, M. (2013). Technology orientation, innovation and business performance: A study of Dubai SMEs. *The International Technology Management Review, 3*(1), 1-11.

Al-Dhubaibi, A. (2021). Optimizing the value of activity based costing system: The role of successful implementation. *Management Science Letters, 11*(1), 179-186.

Al-Nuaimi, S. I. M., Mohamed, R., & Alekam, J. M. E. (2017). The link between information technology, activity-based costing implementation and organizational performance. *International Review of Management and Marketing, 7*(1), 452-457.

Al-Omiri, M., & Drury, C. (2007). A survey of factors influencing the choice of product costing systems in UK organizations. *Management accounting research, 18*(4), 399-424.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Al-Omiri, M. F. R. (2003). *The diffusion of management accounting innovations: a study of the factors influencing the adoption, implementation levels and success of ABC* (Doctoral dissertation, University of Huddersfield).

Al Mashkoor, I. A. (2022). The impact of green activity-based costing and green supply chain practices on environmental performance oil refineries in Iraq. *International Journal of Economics and Finance Studies, 14*(4), 96-113.

Albalaki, F. M. M., Abdullah, Z., & Kamardin, H. (2018). The Link between Competitive Strategies, Activity based Costing Implementation and Organizational Performance. *International Journal of Business and Management Invention (IJBMI), 7*(2), 59-68.

Albassami, A. M., Hameed, W., Naveed, R., & Moshfegyan, M. (2019). Does knowledge management expedite SMEs performance through organizational innovation? An empirical evidence from small and medium-sized enterprises (SMEs). *Pacific Business Review International, 12*(1), 11-22.

Alcouffe, S. (2002). The dissemination of the ABC in France: An empirical study using the theory of diffusion of innovations. In *23rd Congress of the French Association of Accounting, Toulouse, May*.

Aldukhil, Y. (2012). *Developing and testing a model of successful adoption of activity-based costing* (Doctoral dissertation, Victoria University).

Aliyu, M. S., & Mahmood, R. (2014). The relationship between market orientation and business performance of Nigerian SMEs: The role of organizational culture. *International Journal of Business and Social Science, 5*(9), 159-167.

AlKhajeh, M. H. A., & Khalid, A. A. (2018). Management accounting practices (MAPs) impact on small and medium enterprise business performance within the Gauteng Province of South Africa. *Journal of Accounting and Auditing: Research and Practice, 2018*, 1-8.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Alleyne, P., & Weekes-Marshall, D. (2011). An exploratory study of management accounting practices in manufacturing companies in Barbados. *International Journal of Business and Social Science, 2*(9), 49-58.

Almeida, A., & Cunha, J. (2017). The implementation of an Activity-Based Costing (ABC) system in a manufacturing company. *Procedia manufacturing, 13*, 932-939.

Alnajjar, M. I. (2017). Impact of accounting information system on organizational performance: A study of SMEs in the UAE. *Global Review of Accounting and Finance, 8*(2), 20-38.

Alraja, M. N., Imran, R., Khashab, B. M., & Shah, M. (2022). Technological innovation, sustainable green practices and SMEs sustainable performance in times of crisis (COVID-19 pandemic). *Information Systems Frontiers, 24*(4), 1081-1105.

Alsayegh, M. F. (2020). Activity Based Costing around the world: Adoption, implementation, outcomes and criticism. *Journal of Accounting and Finance in Emerging Economies, 6*(1), 251-262.

AlSharji, A., Ahmad, S. Z., & Bakar, A. R. A. (2018). Understanding social media adoption in SMEs: Empirical evidence from the United Arab Emirates. *Journal of Entrepreneurship in Emerging Economies, 10*(2), 302-328.

Alvarez, T., Sensini, L., Bello, C., & Vazquez, M. (2021). Management accounting practices and performance of SMEs in the Hotel industry: Evidence from an emerging economy. *International Journal of Business and Social Science, 12*(2), 24-35.

Amoah, J., Belás, J., Khan, K. A., & Metzker, Z. (2021). Antecedents of sustainable SMEs in the social media space: A partial least square-structural equation modeling (PLS-SEM) approach. *Management & Marketing. Challenges for the Knowledge Society, 16*(1), 26-46.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Amornkitvikai, Y., Tham, S. Y., & Tangpoolcharoen, J. (2021). Barriers and factors affecting E-commerce utilization of Thai small and medium-sized enterprises in food and beverage and retail services. *Global Business Review*.

Anderson, S. W. (1995). A framework for assessing cost management system changes: the case of activity based costing implementation at General Motors, 1986-1993. *Journal of Management Accounting Research, 7*, 1-51.

Angeles, R. (2014). Using the technology-organization-environment framework for analyzing Nike's Considered Index green initiative, a decision support system-driven system. *Journal of Management and Sustainability, 4*(1), 96-113.

Antonioli, D., & Della Torre, E. (2016). Innovation adoption and training activities in SMEs. *The International Journal of Human Resource Management, 27*(3), 311-337.

Armitage, H. M., & Nicholson, R. (1993). Activity based costing: a survey of Canadian practice. *CMA magazine, 67*(2), 22.

Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of marketing research, 14*(3), 396-402.

Asada, A., Basheerb, M. F., Irfanc, M., Jiangd, J., & Tahir, R. (2020). Open-Innovation and knowledge management in Small and Medium-Sized Enterprises (SMEs): The role of external knowledge and internal innovation. *Revista Argentina de Clínica Psicológica, 29*(4), 80-90.

Askarany, D. (2012). An exploratory study into the implementation of management accounting changes in Australia. *Journal of Modern Accounting and Auditing, 8*(5), 628-640.

Avwokeni, A. J. (2010). *Practical Research Methodology–Design, Analysis and Reporting* (5th ed.). Lagos: Jovila Publishing.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Awa, H. O., Ojiabo, O. U., & Emecheta, B. C. (2015). Integrating TAM, TPB and TOE frameworks and expanding their characteristic constructs for e-commerce adoption by SMEs. *Journal of Science & Technology Policy Management, 6*(1), 76-94.

Awa, H. O., Ojiabo, O. U., & Orokor, L. E. (2017a). Integrated technology-organization-environment (TOE) taxonomies for technology adoption. *Journal of Enterprise Information Management, 30*(6), 893-921.

Awa, H. O., Ukoha, O., & Emecheta, B. C. (2016). Using TOE theoretical framework to study the adoption of ERP solution. *Cogent Business & Management, 3*(1), 1196571.

Awa, H. O., Ukoha, O., & Igwe, S. R. (2017b). Revisiting technology-organization-environment (TOE) theory for enriched applicability. *The Bottom Line, 30*(01), 2-22.

Awang, A., Khalid, S. A., Yusof, A. A., Kassim, K. M., Ismail, M., Zain, R. S., & Madar, A. R. S. (2009). Entrepreneurial orientation and performance relations of Malaysian Bumiputera SMEs: The impact of some perceived environmental factors. *International Journal of Business and Management, 4*(9), 84-96.

Awotayo, O. S. (2020). *Information Systems Strategies for Small and Medium Size Enterprise Sustainability* (Doctoral dissertation, Walden University).

Ayyagari, M., Demirgüç-Kunt, A., & Maksimovic, V. (2011). Small vs. young firms across the world: contribution to employment, job creation, and growth. *World Bank Policy Research Working Paper,* (5631).

Azarloo, M., Eshghiaraghi, M., Salehi, S. Y., Habibpoor, V., & Jahangiri, M. (2017). Factors Affecting Technological Entrepreneurship and Innovation in Small and Medium Enterprises (SMEs) and its Role in Countries' Economic Development. *EDII Library and Information Centre*.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Azudin, A., & Mansor, N. (2018). Management accounting practices of SMEs: The impact of organizational DNA, business potential and operational technology. *Asia Pacific Management Review, 23*(3), 222-226.

Babu, M. A., & Masum, M. H. (2019). Crucial Factors for the Implementation of Activity-Based Costing System: A Comprehensive Study of Bangladesh. *ABC Research Alert, 7*(1), 20-27.

Baby, A., & Joseph, C. C. (2016). Bank finance challenges faced by UAE SME sector. *Kuwait Chapter of Arabian Journal of Business and Management Review, 6*(1).

Bairagi, V., & Munot, M. V. (2019). *Research methodology: A practical and scientific approach*. CRC Press.

Baker, J. (2012). The technology–organization–environment framework. *Information Systems Theory: Explaining and Predicting Our Digital Society, Vol. 1*, 231-245.

Bakhsh, A., Mahmood, Z., & Chaudhry, S. (2019). The adoption of management accounting practices (maps) in small and medium enterprises (SME's) of Pakistan. *Journal of Accounting and Finance in Emerging Economies, 5*(2), 243-260.

Barnes, R. W., Grove, J. W., & Burns, N. H. (2003). Experimental assessment of factors affecting transfer length. *Structural Journal, 100*(6), 740-748.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management, 17*(1), 99-120.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology, 51*(6), 1173.

Behery, M., Jabeen, F., & Parakandi, M. (2014). Adopting a contemporary performance management system: A fast-growth small-to-medium enterprise (FGSME) in the UAE. *International Journal of Productivity and Performance Management, 63*(1), 22-43.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Berg, N. (2010). Non-response bias. In K. Kempf-Leonard (Ed.), *Encyclopedia of social measurement* (pp. 865–873). London: Academic Press.

Bescos, P., Cauvin, E., Gosselin, M., & Yoshikawa, T. (2001). The implementation of ABCM in Canada, France and Japan: A cross-national study. In *Comunicación presentada en el XXIV Congreso Anual de la European Accounting Association, EAA* (pp. 18-24).

Bhimani, A., & Pigott, D. (1992). Implementing ABC: A case study of organizational and behavioural consequences. *Management accounting research, 3*(2), 119-132.

Bi, K., Huang, P., & Wang, X. (2016). Innovation performance and influencing factors of low-carbon technological innovation under the global value chain: A case of Chinese manufacturing industry. *Technological Forecasting and Social Change, 111*, 275-284.

Blaikie, N., & Priest, J. (2017). *Social research: Paradigms in action*. John Wiley & Sons.

Bogićević, J., Domanović, V., & Krstić, B. (2016). The role of financial and non-financial performance indicators in enterprise sustainability evaluation. *Ekonomika, 62*(3), 1-13.

Booth, P., & Giacobbe, F. (1997). Activity based costing in Australian manufacturing firms: key survey findings. *Management accounting issues report by the Management accounting centre of excellence of ASCPA, 5*, 1-6.

Brick, J. M., & Williams, D. (2013). Explaining rising nonresponse rates in cross-sectional surveys. *The ANNALS of the American academy of political and social science, 645*(1), 36-59.

Brierley, J. A. (2008). An examination of the factors influencing the level of consideration for activity-based costing. *International journal of business and management, 3*(8), 58-67.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Brown, D. A., Booth, P., & Giacobbe, F. (2004). Technological and organizational influences on the adoption of activity-based costing in Australia. *Accounting & Finance, 44*(3), 329-356.

Brown, T. A. (2015). *Confirmatory factor analysis for applied research*. Guilford Publications.

Bukve, O. (2019). *Designing social science research*. Springer.

Campbell, J. M., & Park, J. (2017). Extending the resource-based view: Effects of strategic orientation toward community on small business performance. *Journal of Retailing and Consumer Services, 34*, 302-308.

Cao, Q., Jones, D. R., & Sheng, H. (2014). Contained nomadic information environments: Technology, organization, and environment influences on adoption of hospital RFID patient tracking. *Information & management, 51*(2), 225-239.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Carlson, K. D., & Herdman, A. O. (2012). Understanding the impact of convergent validity on research results. *Organizational Research Methods, 15*(1), 17-32.

Carton, R. B., & Hofer, C. W. (2006). *Measuring organizational performance: Metrics for entrepreneurship and strategic management research*. Edward Elgar Publishing.

Cauvin, E., & Neumann, B. (2007). French cost accounting methods: ABC and other structural similarities. *Journal of Cost Management, 21*(3), 35-41.

Cavana, R., Delahaye, B., & Sekeran, U. (2001). *Applied business research: Qualitative and quantitative methods*. John Wiley & Sons.

Cerchione, R., & Esposito, E. (2017). Using knowledge management systems: A taxonomy of SME strategies. *International journal of information management, 37*(1), 1551-1562.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Chan, F. T., Chong, A. Y.-L., & Zhou, L. (2012). An empirical investigation of factors affecting e-collaboration diffusion in SMEs. *International Journal of Production Economics, 138*(2), 329-344.

Chan, H. K., Yee, R. W., Dai, J., & Lim, M. K. (2016). The moderating effect of environmental dynamism on green product innovation and performance. *International journal of production economics, 181*, 384-391.

Chang, S.-J., Van Witteloostuijn, A., & Eden, L. (2020). Common method variance in international business research. *Research methods in international business*, 385-398.

Charaf, K., Rahmounib, A. F.-A., & Sabar, M. (2022). The association between Activity-Based Costing and performance: Empirical evidence from Moroccan companies. *Accounting and Management Information Systems, 21*(1), 25-45.

Chatterjee, S., & Yilmaz, M. (1992). A review of regression diagnostics for behavioral research. *Applied Psychological Measurement, 16*(3), 209-227.

Chau, P. Y., & Hu, P. J. (2002). Examining a model of information technology acceptance by individual professionals: An exploratory study. *Journal of management information systems, 18*(4), 191-229.

Cheah, J.-H., Ting, H., Ramayah, T., Memon, M. A., Cham, T.-H., & Ciavolino, E. (2019). A comparison of five reflective–formative estimation approaches: reconsideration and recommendations for tourism research. *Quality & Quantity, 53*, 1421-1458.

Chege, S. M., & Wang, D. (2019). Information technology innovation and its impact on job creation by SMEs in developing countries: an analysis of the literature review. *Technology Analysis & Strategic Management, 32*(3), 256-271.

Chege, S. M., & Wang, D. (2020). The influence of technology innovation on SME performance through environmental sustainability practices in Kenya. *Technology in Society, 60*, 101210.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Chege, S. M., Wang, D., & Suntu, S. L. (2020). Impact of information technology innovation on firm performance in Kenya. *Information Technology for Development, 26*(2), 316-345.

Chen, G., Firth, M., & Park, K. (2001). The implementation and benefits of activity-based costing: a Hong Kong study. *Asian Review of Accounting, 9*(2), 23-37.

Chen, G., Kang, H., & Luna-Reyes, L. F. (2019). Key determinants of online fiscal transparency: A technology-organization-environment framework. *Public Performance & Management Review, 42*(3), 606-631.

Cheng, W.-H., Kadir, K. A., & Bohari, A. M. (2014). The Strategic Planning of Smes in Malaysia: A View of External Environmental Scanning. *International Journal of Business & Society, 15*(3), 4.

Chenhall, R. H., & Langfield-Smith, K. (1998). Adoption and benefits of management accounting practices: an Australian study. *Management accounting research, 9*(1), 1-19.

Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern methods for business research, 295*(2), 295-336.

Chin, W. W. (2010). How to write up and report PLS analyses. In *Handbook of partial least squares: Concepts, methods and applications* (pp. 655-690). Springer.

Chiu, C.-Y., Chen, S., & Chen, C.-L. (2017). An integrated perspective of TOE framework and innovation diffusion in broadband mobile applications adoption by enterprises. *International Journal of Management, Economics and Social Sciences (IJMESS), 6*(1), 14-39.

Chongruksut, W., & Brooks, A. (2005). The adoption and implementation of activity-based costing in Thailand. *Asian Review of Accounting, 13*(2), 1-17.

Chuchuen, C., & Chanvarasuth, P. (2011). The adoption factors of e-CRM in service sector of thai SMEs. In *2nd International Conference on Networking and Information Technology IPCSIT* (Vol. 17, pp. 350-355).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Chung, C. J., Nam, Y., & Stefanone, M. A. (2012). Exploring online news credibility: The relative influence of traditional and technological factors. *Journal of computer-mediated communication, 17*(2), 171-186.

Clarke, B., & Mia, L. (1995). Activity based costing systems: use and application in Australia. *SYME Department of Accounting Research Papers in Applied Accounting and Finance*.

Cleary, P., Quinn, M., Rikhardsson, P., & Batt, C. (2022). Exploring the Links Between IT Tools, Management Accounting Practices and SME Performance: Perceptions of CFOs in Ireland. *Accounting, Finance & Governance Review, 28*, 1-31.

CLlarke, P. J., Hill, N. T., & Stevens, K. (1999). Activity-based costing in Ireland: Barriers to, and opportunities for, change. *Critical perspectives on Accounting, 10*(4), 443-468.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Conway, J. M., & Lance, C. E. (2010). What reviewers should expect from authors regarding common method bias in organizational research. *Journal of business and psychology, 25*, 325-334.

Cooper, D., & Schindler, P. (2008). *Business Research Methods* (10th ed.). New York, NY: McGraw Hill.

Cooper, D. R., & Schindler, P. (2014). *Business research methods*. Mcgraw-hill.

Cooper, R. B., & Zmud, R. W. (1990). Information technology implementation research: a technological diffusion approach. *Management science, 36*(2), 123-139.

Cosgun, V., & Dogerlioglu, O. (2012). Critical success factors affecting e-commerce activities of small and medium enterprises. *Information Technology Journal, 11*(12), 1664.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Črešnar, R., Dabić, M., Stojčić, N., & Nedelko, Z. (2023). It takes two to tango: technological and non-technological factors of Industry 4.0 implementation in manufacturing firms. *Review of Managerial Science, 17*(3), 827-853.

Cui, A. S., & Wu, F. (2016). Utilizing customer knowledge in innovation: antecedents and impact of customer involvement on new product performance. *Journal of the academy of marketing science, 44*, 516-538.

Dada, O., & Fogg, H. (2016). Organizational learning, entrepreneurial orientation, and the role of university engagement in SMEs. *International small business journal, 34*(1), 86-104.

Davis, F. D. (1986). *A technology acceptance model for empirically testing new end-user information systems* (Unpublished Doctoral Dissertation, MIT).

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319-340.

De Oliveira, R. T., Indulska, M., Steen, J., & Verreynne, M.-L. (2020). Towards a framework for innovation in retailing through social media. *Journal of Retailing and Consumer Services, 54*, 101772.

Del Giudice, M., Della Peruta, M. R., & Scuotto, V. (2014). Student entrepreneurship, creativity and success. How much does knowledge heterogeneity really matter? *International Journal of Entrepreneurship and Innovation Management, 18*(1), 45-58.

Demirbag, M., Tatoglu, E., Tekinkus, M., & Zaim, S. (2006). An analysis of the relationship between TQM implementation and organizational performance: evidence from Turkish SMEs. *Journal of manufacturing technology management, 17*(6), 829-847.

DET. (2022). Dubai Business Survey Overall Report - Q1. Department of Economy and Tourism. https://ded.ae/DED_Files/Files/StudiesAndResearch/Dubai_Business_Confidence_Index/DED-Q1-2022-Report-ENG-V1.pdf

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

DeVon, H. A., Block, M. E., Moyle-Wright, P., Ernst, D. M., Hayden, S. J., Lazzara, D. J., Savoy, S. M., & Kostas-Polston, E. (2007). A psychometric toolbox for testing validity and reliability. *Journal of Nursing scholarship, 39*(2), 155-164.

Diharto, A. K., & Budiyanto, M. (2017). A causality model of people equity, VRIN resource, social capital, innovation capability and SMEs performance. *Journal of Business and Retail Management Research, 11*(4).

Dobrovic, J., Lambovska, M., Gallo, P., & Timkova, V. (2018). Non-financial indicators and their importance in small and medium-sized enterprises. *Journal of Competitiveness, 10*(2), 41.

Duarte, P. A. O., & Raposo, M. L. B. (2010). A PLS model to study brand preference: An application to the mobile phone market. In *Handbook of partial least squares: Concepts, methods and applications* (pp. 449-485). Springer, Berlin, Heidelberg.

Dubai, S. M. E. (2020). The state of Small & Medium Enterprises (SMEs) in Dubai 2019. https://sme.ae/SME_File/Files/SME_REPORT_2019.pdf.

Dubihlela, J., & Omoruyi, O. (2014). Barriers to effective supply chain management, implementation, and impact on business performance of SMEs in South Africa. *Journal of Applied Business Research (JABR), 30*(4), 1019-1030.

Dubihlela, J., & Rundora, R. (2014). Employee training, managerial commitment and the implementation of activity based costing; Impact on performance of SMEs. *International Business & Economics Research Journal (IBER), 13*(1), 27-38.

Duckworth, R. (2014). *Examining relationships between perceived characteristics of innovation and adoption intentions of small and medium enterprises*. Northcentral University.

Durowoju, S. T. (2017). Impact of technological change on small and medium enterprises performance in Lagos state. *Economic and Environmental Studies, 17*(4 (44)), 743-756.

Easterby-Smith, M., Thorpe, R., & Jackson, P. R. (2012). *Management Research*. Sage.

Eisend, M., & Kuss, A. (2019). *Research methodology in marketing*. Springer.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Ekasari, N., Nurhasanah, N., Chairunnisa, F., & Siregar, A. P. (2019). Model Performance Supported SMEs Strategy-Based Applications Through E-Money Gofood Business Customer Satisfaction and Grabfood. *Ekonomis: Journal of Economics and Business, 3*(2), 129-136.

Elhamma, A., & Zhang, Y. (2013). The relationship between activity based costing, business strategy and performance in Moroccan enterprises. *Accounting and Management Information Systems, 12*(1), 22-38.

Elliott, A. C., & Woodward, W. A. (2007). *Statistical analysis quick reference guidebook: With SPSS examples*. Sage.

Ellis, P. D. (2010). *The essential guide to effect sizes: Statistical power, meta-analysis, and the interpretation of research results*. Cambridge University Press.

Emine, D. (2012). Financial challenges that impede increasing the productivity of SMEs in Arab region. *Journal of Contemporary Management, 1*(9), 17-32.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Eniola, A. A., & Entebang, H. (2015). SME firm performance-financial innovation and challenges. *Procedia-Social and Behavioral Sciences, 195*, 334-342.

Erind, H. (2015). The technological, organizational and environmental framework of IS innovation adaption in small and medium enterprises. *Evidence from research over the last 10 years. International ournal of Business and Management, 3*(4), 1-14.

Esmalifalak, H., Albin, M. S., & Behzadpoor, M. (2015). A comparative study on the activity based costing systems: Traditional, fuzzy and Monte Carlo approaches. *Health Policy and Technology, 4*(1), 58-67.

Fararah, F. S., & Al-Swidi, A. K. (2013). The role of the perceived benefits on the relationship between service quality and customer satisfaction: a study on the Islamic microfinance and SMEs in Yemen using PLS approach. *Asian Social Science, 9*(10), 18.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Fei, Z. Y., & Isa, C. R. (2010). Behavioral and organizational variables affecting the success of ABC success in China. *African journal of business management, 4*(11), 2302.

Fei, Z. Y., Namazi, M., & Isa, C. R. (2017). Investigating the Empirical Effect of ABC Stages on the Performance of Companies. *Iranian Journal of Management Studies (IJMS), 10*(1), 175-205.

Field, A. (2009). *Discovering statistics using SPSS*. London (UK): Sage Publications Ltd.

Fornell, C., & Larcker, D. F. (1981). *Structural equation models with unobservable variables and measurement error: Algebra and statistics*. Sage Publications Sage CA: Los Angeles, CA.

Fox, R. (2013). *Information Technology: An Introduction for Today's Digital World*. CRC Press.

Friedlander, R., & Margulis, N. (1968). Multiple impacts of OC and individual value systems upon job satisfaction. *Personnel Psychology, 22*, 171-183.

Galati, A., Tulone, A., Tinervia, S., & Crescimanno, M. (2019). The role of internal resources in the competitive positioning of Sicilian wine cooperatives. *International Journal of Globalisation and Small Business, 10*(4), 324-337.

Garrett Jr, R. P., & Neubaum, D. O. (2013). Top management support and Initial strategic assets: A dependency model for internal corporate venture performance. *Journal of Product Innovation Management, 30*(5), 896-915.

Geisser, S. (1974). A predictive approach to the random effect model. *Biometrika, 61*(1), 101-107.

Ghobakhloo, M., Sabouri, M. S., Hong, T. S., & Zulkifli, N. (2011). Information technology adoption in small and medium-sized enterprises; an appraisal of two decades literature. *Interdisciplinary Journal of Research in Business, 1*(7), 53-80.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Giannakis, M., & Papadopoulos, T. (2016). Supply chain sustainability: A risk management approach. *International Journal of Production Economics, 171*, 455-470.

Goddard, W., & Melville, S. (2004). *Research methodology: An introduction*. Juta and Company Ltd.

Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge management: An organizational capabilities perspective. *Journal of management information systems, 18*(1), 185-214.

Gonzálvez-Gallego, N., Acosta, P. S., Trigo, A., Castillo, F. J. M., & Varajão, J. E. (2010). El papel de las TIC en el rendimiento de las cadenas de suministro: el caso de las grandes empresas de España y Portugal. *Universia Business Review,* (28), 102-114.

Gooneratne, T., & Wijerathne, C. (2019). Appearance, disappearance and reappearance of activity based costing: a case study from a Sri Lankan manufacturing firm. *Asia-Pacific Management Accounting Journal (APMAJ), 14*(3), 50-80.

Gopalani, A., & Shick, K. (2011). The service-enabled customer experience: a jump-start to competitive advantage. *Journal of business strategy, 32*(3), 4-12.

Gosselin, M. (2006). A review of activity-based costing: technique, implementation, and consequences. *Handbooks of management accounting research, 2*, 641-671.

Government of Dubai. (2018). *Food and beverages sector in UAE*. Dubai Exports. https://www.flandersinvestmentandtrade.com/export/sites/trade/files/attachments/Food-and-Beverages-Sector-Report%20-%202018.pdf

Gozali, L., Masrom, M., Zagloel, T. Y., Haron, H. N., Garza-Reyes, J. A., & Tjahjono, B. (2020). Final framework for a successful business incubator for Indonesian public universities: The influence of information technology on business incubator success. In *Interdisciplinary approaches to digital transformation and innovation* (pp. 70-98). IGI Global.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Graafland, J., & Smid, H. (2017). Reconsidering the relevance of social license pressure and government regulation for environmental performance of European SMEs. *Journal of Cleaner Production, 141*, 967-977.

Gravetter, F. J., & Forzano, L.-A. B. (2018). *Research methods for the behavioral sciences*. SAGE Publications.

Gray, D. E. (2016). *Doing research in the business world*. Sage.

Grönroos, C., & Ravald, A. (2011). Service as business logic: implications for value creation and marketing. *Journal of service management, 22*(1), 5-22.

Groves, R. M., & Peytcheva, E. (2008). The impact of nonresponse rates on nonresponse bias: a meta-analysis. *Public opinion quarterly, 72*(2), 167-189.

Guo, L., Hu, X., Wei, X., & Cai, X. (2020). The influence of personal motivation and environmental stimuli on customer participation and engagement behavior: the mediating role of experience evaluation. *Journal of Hospitality and Tourism Technology, 11*(4), 643-666.

Gupta, G., Tan, K. T. L., Ee, Y. S., & Phang, C. S. C. (2018). Resource-based view of information systems: Sustainable and transient competitive advantage perspectives. *Australasian Journal of Information Systems, 22*.

Gupta, N., & Mirchandani, A. (2018). Investigating entrepreneurial success factors of women-owned SMEs in UAE. *Management Decision, 56*(1), 219-232.

Hadi, A. S., & Simonoff, J. S. (1993). Procedures for the identification of multiple outliers in linear models. *Journal of the American statistical association, 88*(424), 1264-1272.

Hadjimanolis, A. (2000). A resource-based view of innovativeness in small firms. *Technology analysis & Strategic management, 12*(2), 263-281.

Hage, J. (1980). *Theories of organizations: Form, process, and transformation*. Wiley.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010a). *Multivariate data analysis* (7th ed.). New York: Pearson.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010b). *Multivariate data analysis: a global perspective* (7th ed.). Upper Saddle River, NJ: Pearson.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate Data Analysis* (Vol. 6). Pearson Prentice Hall, Upper Saddle River.

Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage Publications.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling*. Thousand Oaks: Sage.

Hair, J. F., Money, A. H., Samouel, P., & Page, M. (2007). *Research methods for business*. Chichester: John Wiley & Sons.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing theory and Practice, 19*(2), 139-152.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial least squares structural equation modeling: Rigorous applications, better results and higher acceptance. *Long range planning, 46*(1-2), 1-12.

Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the academy of marketing science, 40*(3), 414-433.

Hair, J. F. J., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (PLS-SEM)*. United Kingdom, UK: Sage Publications.

Hair Jr, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2014a). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage Publications.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Hair Jr, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014b). Partial least squares structural equation modeling (PLS-SEM). *European Business Review, 26*(2), 106-121.

Hameed, W. U., & Naveed, F. (2019). Coopetition-based open-innovation and innovation performance: Role of trust and dependency evidence from Malaysian high-tech SMEs. *Pakistan Journal of Commerce and Social Sciences (PJCSS), 13*(1), 209-230.

Hansson, S. O. (2015). *The role of technology in science: Philosophical perspectives*. Springer.

Hardan, A. S., & Shatnawi, T. M. (2013). Impact of applying the ABC on improving the financial performance in telecom companies. *International Journal of Business and Management, 8*(12), 48.

Haris, A., Barliana, M. S., Saripudin, D., & Abdullah, A. G. (2019). Effectiveness of Entrepreneurship Communication Skills in Business Group: Ethno-Andragogy Approach to Technical Vocational Education and Training (Ethnographic study: Processed snacks in Sumbawa). In *5th UPI International Conference on Technical and Vocational Education and Training (ICTVET 2018)* (pp. 179-182). Atlantis Press.

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication monographs, 76*(4), 408-420.

Hayes, A. F., & Preacher, K. J. (2010). Quantifying and testing indirect effects in simple mediation models when the constituent paths are nonlinear. *Multivariate behavioral research, 45*(4), 627-660.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science, 43*, 115-135.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In *New challenges to international marketing* (Vol. 20, pp. 277-319). Emerald Group Publishing Limited.

Hilmersson, M. (2014). Small and medium-sized enterprise internationalisation strategy and performance in times of market turbulence. *International small business journal, 32*(4), 386-400.

Hilmersson, M., & Johanson, M. (2016). Speed of SME internationalization and performance. *Management International Review, 56*, 67-94.

Ho, L. A. (2008). What affects organizational performance? The linking of learning and knowledge management. *Industrial management & data systems, 108*(9), 1234-1254.

Hoang, T. B. N., Pham, D. H., Nguyen, T. M. G., & Nguyen, T. T. P. (2020). Factors affecting activity-based costing adoption in autonomous Public Universities in Vietnam. *The Journal of Asian Finance, Economics and Business (JAFEB), 7*(12), 877-884.

Hoozée, S., & Bruggeman, W. (2010). Identifying operational improvements during the design process of a time-driven ABC system: The role of collective worker participation and leadership style. *Management accounting research, 21*(3), 185-198.

Hoq, M. Z., & Chauhan, A. A. (2011). Effects of organizational resources on 373 organizational performance: An empirical study of SMEs. *Interdisciplinary Journal of Contemporary Research in Business, 2*(12), 373-385.

Hsu, P.-F., Ray, S., & Li-Hsieh, Y.-Y. (2014). Examining cloud computing adoption intention, pricing mechanism, and deployment model. *International Journal of Information Management, 34*(4), 474-488.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Hubley, A. M. (2014). Discriminant validity. In *Encyclopedia of quality of life and well-being research* (pp. 1664-1667). Springer Dordrecht.

Hunt, S. D., Sparkman Jr, R. D., & Wilcox, J. B. (1982). The pretest in survey research: Issues and preliminary findings. *Journal of marketing research, 19*(2), 269-273.

Innes, J., & Mitchell, F. (1991). *Activity based cost management: A case study of development and implementation*. Chartered Institute of Management Accountants.

Intakhan, P. (2014). Direct & indirect effects of top management support on ABC implementation success: Evidence from ISO 9000 certified companies in Thailand. *Procedia-Social and Behavioral Sciences, 164*, 458-470.

Ishengoma, E. K., & Kappel, R. (2011). Business environment and growth potential of micro and small manufacturing enterprises in Uganda. *African Development Review, 23*(3), 352-365.

Islami, N. M., & Kashurnikov, S. N. (2019). The effect of company sizes, user involvement of information system, and top management support on accounting information system performance. *International Journal of Engineering and Advanced Technology, 9*(1), 2089-2096.

Ismail, H. B., Talukder, D., & Panni, M. F. A. K. (2007). Technology dimension of CRM: the orientation level and its impact on the business performance of SMEs in Malaysia. *International Journal of Electronic Customer Relationship Management, 1*(1), 16-29.

Ismail, T. H., & Mahmoud, N. (2012). The influence of organizational and environmental factors on cost systems design in Egypt. *British Journal of Economics, Finance and Management Sciences, 4*(2), 31-51.

James, S., & Alley, C. (2002). Tax compliance, self-assessment and tax administration. *Journal of Finance and Management in Public Services, 2*(2), 27-42.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Jansen, J. J. P., Van Den Bosch, F. A. J., & Volberda, H. W. (2005). Managing potential and realized absorptive capacity: how do organizational antecedents matter? *Academy of management journal, 48*(6), 999-1015.

Jansen, M. R., & Hlongwane, P. (2019). *Employee performance reward and recognition inequity in the Western Cape provincial department of transport and public works*. International Conference on Public Administration and Development Alternatives (IPADA).

Jaradat, Z., Taha, R., Mat Zin, R., Wan Zakaria, W. Z., & Abdul Aziz, R. (2021). The use and implications of management accounting practices in small and medium-sized enterprises. *Asia-Pasific Management Accounting Journal, 16*(1), 250-295.

Jawabri, A. (2020). The impact of big-5 model leadership traits on team entrepreneurship: An empirical study of small businesses in the UAE. *Management Science Letters, 10*(3), 497-506.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Jonker, J., & Pennink, B. (2010). *The essence of research methodology: A concise guide for master and PhD students in management science*. Springer Science & Business Media.

Jusoh, R., & Miryazdi, S. (2015). The influence of technological and environmental factors on the diffusion of activity-based costing in Iran. *Tékhne, 13*(2), 95-109.

Kaczka, E. E., & Kirk, R. V. (1967). Managerial climate, work groups, and organizational performance. *Administrative science quarterly, 12*(2), 253-272.

Kamasak, R. (2017). The contribution of tangible and intangible resources, and capabilities to a firm's profitability and market performance. *European Journal of Management and Business Economics, 26*(2), 252-275.

Kaplan, R. S., & Anderson, S. R. (2003). Time-driven activity-based costing. *Available at SSRN 485443*.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Katua, N. T. (2014). The role of SMEs in employment creation and economic growth in selected countries. *International Journal of education and Research, 2*(12), 461-472.

Katz, D., & Kahn, R. L. (1978). *The social psychology of organizations* (Vol. 2). Wiley New York.

Keh, H. T., Nguyen, T. T. M., & Ng, H. P. (2007). The effects of entrepreneurial orientation and marketing information on the performance of SMEs. *Journal of business venturing, 22*(4), 592-611.

Kenny, D. (2014). *Lexis and creativity in translation: A corpus based approach*. Routledge.

Kiani, R., & Sangeladji, M. (2003). An empirical study about the use of the ABC/ABM models by some of the Fortune 500 largest industrial corporations in the USA. *Journal of American Academy of Business, 3*(1/2), 174-182.

Kitsantas, T., Vazakidis, A., & Stefanou, C. (2022). Factors that Facilitate and Motivate the Adoption and Implementation of Activity Based Costing in Greek Companies. *Advances in Business-Related Scientific Research Journal, 13*(1), 1-25.

Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). Guilford Press.

Kline, R. B. (2023). *Principles and practice of structural equation modeling*. Guilford Publications.

Kock, N. (2016). Non-normality propagation among latent variables and indicators in PLS-SEM simulations. *Journal of Modern Applied Statistical Methods, 15*(1), 16.

Kongolo, M. (2010). Job creation versus job shedding and the role of SMEs in economic development. *African journal of business management, 4*(11), 2288.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement, 30*(3), 607-610.

Krumwiede, K. R. (1998). The implementation stages of activity-based costing and the impact of contextual and organizational factors. *Journal of Management Accounting Research, 10*, 239.

Krumwiede, K. R., & Roth, H. P. (1997). Implementing information technology innovations: The activity-based costing example. *SAM Advanced Management Journal, 62*(4), 4.

Kumar, R. (2017). *Targeted SME financing and employment effects: What do we know and what can we do differently?* World Bank.

Kumar, R. (2018). *Research methodology: A step-by-step guide for beginners*. Sage Publications Ltd.

Kuntchev, V., Ramalho, R., Rodríguez-Meza, J., & Yang, J. S. (2013). What have we learned from the enterprise surveys regarding access to credit by SMEs? *World Bank Policy Research Working Paper,* (6670).

Lee, D.-J., Yu, G. B., Sirgy, M. J., Singhapakdi, A., & Lucianetti, L. (2018). The effects of explicit and implicit ethics institutionalization on employee life satisfaction and happiness: The mediating effects of employee experiences in work life and moderating effects of work–family life conflict. *Journal of Business Ethics, 147*, 855-874.

Lee, J. Y., Park, Y.-R., Ghauri, P. N., & Park, B. I. (2014). Innovative knowledge transfer patterns of group-affiliated companies: The effects on the performance of foreign subsidiaries. *Journal of International Management, 20*(2), 107-123.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Lestari, S. D., Leon, F. M., Widyastuti, S., Brabo, N. A., & Putra, A. (2020). Antecedents and consequences of innovation and business strategy on performance and competitive advantage of SMEs. *The Journal of Asian Finance, Economics and Business, 7*(6), 365-378.

Li, F., Lu, H., Hou, M., Cui, K., & Darbandi, M. (2021). Customer satisfaction with bank services: The role of cloud services, security, e-learning and service quality. *Technology in Society, 64*, 101487.

Lian, J.-W., Yen, D. C., & Wang, Y.-T. (2014). An exploratory study to understand the critical factors affecting the decision to adopt cloud computing in Taiwan hospital. *International Journal of Information Management, 34*(1), 28-36.

Lima, E., Hopkins, T., Gurney, E., Shortall, O., Lovatt, F., Davies, P., Williamson, G., & Kaler, J. (2018). Drivers for precision livestock technology adoption: A study of factors associated with adoption of electronic identification technology by commercial sheep farmers in England and Wales. *PloS one, 13*(1), e0190489.

Lin, F.-J. (2008). Solving multicollinearity in the process of fitting regression model using the nested estimate procedure. *Quality & Quantity, 42*, 417-426.

Lip-Sam, T., & Hock-Eam, L. (2011). Estimating the determinants of B2B e-commerce adoption among small & medium enterprises. *International Journal of Business & Society, 12*(1).

Lo, M. C., Azlan, M. A., Ramayah, T., & Wang, Y. C. (2015). Examining the effects of leadership, market orientation and leader member exchange (LMX) on organisational performance. *Engineering Economics, 26*(4), 409-421.

Lo, M. C., Wang, Y. C., Wah, C. R. J., & Ramayah, T. (2016). The critical success factors for organizational performance of SMEs in Malaysia: a partial least squares approach. *Revista brasileira de gestão de negócios, 18*, 370-391.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Lou, A. T. F., & Li, E. Y. (2017). Integrating innovation diffusion theory and the technology acceptance model: The adoption of blockchain technology from business managers' perspective. In *Proceedings of The 17th International Conference on Electronic Business* (pp. 293-296). ICEB, Dubai, UAE.

Love, J. H., & Roper, S. (2015). SME innovation, exporting and growth: A review of existing evidence. *International small business journal, 33*(1), 28-48.

Low, D. A. (1997). *Human Development*. Pretoria: Kagiso.

Maelah, R., & Ibrahim, D. N. (2006). Activity based costing (ABC) adoption among manufacturing organizations-the case of Malaysia. *International Journal of Business and Society, 7*(1), 70.

Mahmood Albalaki, F. M., Abdullah, Z., & Kamardin, H. (2019). The Influence of External Contingency Factors and Activity-Based Costing Implementation on Organizational Performance. *Jurnal Pengurusan,* (55), 111-124.

Mahmood, R., & Hanafi, N. (2013). Entrepreneurial orientation and business performance of women-owned small and medium enterprises in Malaysia: Competitive advantage as a mediator. *International Journal of Business and Social Science (IJBSS), 4*(1), 82-90.

Mahr, D., Lievens, A., & Blazevic, V. (2014). The value of customer cocreated knowledge during the innovation process. *Journal of Product Innovation Management, 31*(3), 599-615.

Maiga, A. S. (2017). Assessing the main and interaction effects of activity-based costing and internal and external information systems integration on manufacturing plant operational performance. In *Advances in Management Accounting* (Vol. 29, pp. 55-90). Emerald Publishing Limited.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Mairura, K. O., Ngugi, P. K., & Kanali, C. (2016). The role of compatibility in technology adoption among automobile mechanics in micro and small enterprises in Kenya. *International Journal of Academic Research in Business and Social Sciences, 6*(5), 503-511.

Major, M., & Hopper, T. (2005). Managers divided: Implementing ABC in a Portuguese telecommunications company. *Management accounting research, 16*(2), 205-229.

Malik, S., Chadhar, M., Vatanasakdakul, S., & Chetty, M. (2021). Factors affecting the organizational adoption of blockchain technology: Extending the technology–organization–environment (TOE) framework in the Australian context. *Sustainability, 13*(16), 9404.

Malmi, T. (1999). Activity-based costing diffusion across organizations: an exploratory empirical analysis of Finnish firms. *Accounting, organizations and society, 24*(8), 649-672.

Masa'deh, R. e., Al-Henzab, J., Tarhini, A., & Obeidat, B. Y. (2018). The associations among market orientation, technology orientation, entrepreneurial orientation and organizational performance. *Benchmarking: An International Journal, 25*(8), 3117-3142.

Masadeh, A. (2023). Application of Using the Activity-Based Costing System on Product Development in Jordan's Manufacturing Listed Manufacturing Firms. *International Journal of Professional Business Review, 8*(6), e02458.

Mathew, A. (2015). Talent management practices in select organizations in India. *Global Business Review, 16*(1), 137-150.

Mazbayeva, K., Barysheva, S., & Saparbayeva, S. S. (2022). The influence of the importance of cost information, product diversity and accountants' participation on the activity-based costing adoption. *Journal of accounting & organizational change, 18*(2), 346-366.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Maziriri, E., & Chinomona, E. (2016). Modeling the influence of relationship marketing, green marketing and innovative marketing on the business performance of small, medium and micro enterprises (SMMES). *Journal of Economics and Behavioral Studies, 8*(3 (J)), 127-139.

Maziriri, E. T. (2017). The impact of management accounting practices (Maps) on the business performance of small and medium enterprises within the gauteng province of South Africa. *Journal of Accounting & Management, 7*(2), 12-25.

Maziriri, E. T., & Chivandi, A. (2020). Modelling key predictors that stimulate the entrepreneurial performance of small and medium-sized enterprises (SMEs) and poverty reduction: Perspectives from SME managers in an emerging economy. *Acta Commercii, 20*(1), 1-15.

McNeill, T., & Nicholas, D. B. (2019). Creating and applying knowledge for critical social work practice: Reflections on epistemology, research, and evidence-based practice. *Journal of Ethnic & Cultural Diversity in Social Work, 28*(4), 351-369.

Md Isa, F., Jaganathan, M., Sern, V. Y. C., Ahmdon, M. A. S., & Mohd Nafi, S. N. (2020). Does service marketing enhance supplier and customer contact in the gig economy era? case analysis from Malaysian SMEswomen entrepreneurs. *International Journal of Supply Chain Management (IJSCM), 9*(1), 1105-1112.

Melnikovas, A. (2018). Towards an Explicit Research Methodology: Adapting Research Onion Model for Futures Studies. *Journal of futures Studies, 23*(2), 29-44.

Melnyk, S. A., Bititci, U., Platts, K., Tobias, J., & Andersen, B. (2014). Is performance measurement and management fit for the future? *Management accounting research, 25*(2), 173-186.

Menon, T., & Pfeffer, J. (2003). Valuing internal vs. external knowledge: Explaining the preference for outsiders. *Management science, 49*(4), 497-513.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Mertens, D. M. (2019). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods*. Sage Publications.

Messeni Petruzzelli, A., Albino, V., & Carbonara, N. (2009). External knowledge sources and proximity. *Journal of Knowledge Management, 13*(5), 301-318.

Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American journal of sociology, 83*(2), 340-363.

Mihardjo, L. W., Jermsittiparsert, K., Ahmed, U., Chankoson, T., & Iqbal Hussain, H. (2020). Impact of key HR practices (human capital, training and rewards) on service recovery performance with mediating role of employee commitment of the Takaful industry of the Southeast Asian region. *Education+ Training, 63*(1), 1-21.

Miller, L. E., & Smith, K. L. (1983). Handling nonresponse issues. *Journal of extension, 21*, 45-50.

Ministry of Economy. (2016). *Annual Economic Report 2016 (24th Edition)*. Ministry of Economy UAE. https://u.ae/en/about-the-uae/economy/-/media/Files/MoE-Anual-Economic-Report--2016-Eng.ashx

Mndzebele, N. (2013). The effects of relative advantage, compatibility and complexity in the adoption of EC in the hotel industry. *International Journal of Computer and Communication Engineering, 2*(4), 473.

Moalla, H. (2007). The mechanisms of distribution, adoption and rejection of the method ABC in the Tunisian environment. *Actes du 28ème Congrès International de l'AFC, Poitiers les, 23*, 24.

Moalla, H., & Basti, C. (2020). The influence of internal actors on the sophistication of costing systems in Tunisia. *Asian-Pacific Management Accounting Journal, 15*(3), 1-23.

Mohammed, S. R. (2019). Usage and impact of activity based costing (abc) technique on the performance of selected smes in Lagos state, Nigeria. *Journal of Operational Research in Management, Social Sciences & Education, 5*(1), 46-59.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Mooi, E., Sarstedt, M., & Mooi-Reci, I. (2018). *Market research: The process, data, and methods using Stata*. Springer.

Moore, D. S., McCabe, G. P., Alwan, L. C., & Craig, B. A. (2016). *The practice of statistics for business and economics*. WH Freeman and Company.

Moshi, G. (2013). Convergence in industry efficiency and technology adoption in African telecommunications: an empirical study. *European Scientific Journal, 9*(18).

Msomi, M. P., Ngibe, M., & Nyide, C. J. (2019). Factors influencing the adoption of management accounting practices (MAPs) by manufacturing small and medium enterprises (SMEs) in Durban, KwaZulu-Natal. *International Journal of Entrepreneurship*.

Musawa, M. S., & Wahab, E. (2012). The adoption of electronic data interchange (EDI) technology by Nigerian SMEs: A conceptual framework. *Journal of Business Management and Economics, 3*(2), 55-68.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Mustikaningsih, D., Cahyandito, M. F., Kaltum, U., & Sarjana, S. (2019). Building business performance through partnership strategy model: Evidence from renewable energy industry in Indonesia. *International Journal of Energy Economics and Policy, 9*(5), 297-307.

Mwila, A., Masaka, V., & Tukumana, K. (2022). The Impact of the Activity-Based Costing on SMEs' Financial Performance in Lusaka, Zambia. *CECCAR Business Review, 3*(6), 42-50.

Nagahira, A., Yamasaki, K., Ishihara, S., & Ishida, S. (2018). The impact of fuzzy front end activities and changes in project execution on new product development project success in Japanese manufacturing firms: Comparative study between B2B and B2C projects. In *2018 Portland International Conference on Management of Engineering and Technology (PICMET)* (pp. 1-17). IEEE.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Nair, S., & Tan, X. (2018). Factors influencing the implementation of activity–based costing: a study on Malaysian SMEs. *International Business Research, 11*(8), 133-141.

Najib, M. (2013). Internal sources of competitiveness in small and medium Indonesian food processing companies. *ASEAN Journal of Economics, Management and Accounting, 1*(1), 101-117.

Nakku, V. B., Agbola, F. W., Miles, M. P., & Mahmood, A. (2020). The interrelationship between SME government support programs, entrepreneurial orientation, and performance: A developing economy perspective. *Journal of Small Business Management, 58*(1), 2-31.

Nakos, G., Dimitratos, P., & Elbanna, S. (2019). The mediating role of alliances in the international market orientation-performance relationship of SMEs. *International Business Review, 28*(3), 603-612.

Nassar, M., Morris, D., Thomas, A., & Sangster, A. (2009). An empirical study of activity-based costing (ABC) systems within the Jordanian industrial sector: critical success factors and barriers to ABC implementation. In *Accounting in Emerging Economies* (pp. 229-263). Emerald Group Publishing Limited.

NBF. (2019). *SME in-depth*. National Bank of Fujairah. https://nbf.ae/media/114007/sme-in-depth.pdf

Nguyen, P. V., Huynh, H. T. N., Lam, L. N. H., Le, T. B., & Nguyen, N. H. X. (2021). The impact of entrepreneurial leadership on SMEs' performance: the mediating effects of organizational factors. *Heliyon, 7*(6), e07326.

Nguyen, T. H., Newby, M., & Macaulay, M. J. (2015). Information technology adoption in small business: Confirmation of a proposed framework. *Journal of Small Business Management, 53*(1), 207-227.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Niñerola, A., Hernández-Lara, A. B., & Sánchez-Rebull, M. V. (2021). Improving healthcare performance through activity-based costing and time-driven activity-based costing. *The International journal of health planning and management, 36*(6), 2079-2093.

Nkhoma, M. Z., Dang, D., & De Souza-Daw, A. (2013). Contributing factors of cloud computing adoption: a technology-organisation-environment framework approach. *Proceedings of the European Conference on Information Management & Evaluation, 2*(1), 180-188.

Nonaka, I., & Konno, N. (1998). The concept of "Ba": Building a foundation for knowledge creation. *California management review, 40*(3), 40-54.

Nuengphasuk, M., & Samanchuen, T. (2019). Selection of logistics service provider for e-commerce using AHP and TOPSIS: A case study of SMEs in Thailand. In *2019 4th Technology Innovation Management and Engineering Science International Conference (TIMES-iCON)* (pp. 1-5). IEEE.

Nuhu, N. A., Baird, K., & Appuhami, R. (2016). The association between the use of management accounting practices with organizational change and organizational performance. In *Advances in management accounting* (pp. 67-98). Emerald Group Publishing Limited.

Nuhu, N. A., Baird, K., & Bala Appuhamilage, A. (2017). The adoption and success of contemporary management accounting practices in the public sector. *Asian Review of Accounting, 25*(1), 106-126.

Nuseir, M. T. (2018). Digital media impact on SMEs performance in the UAE. *Academy of Entrepreneurship Journal, 24*(2), 1-13.

Nuseir, M. T., & Aljumah, A. (2022). The impact of entrepreneur orientation on sustainable entrepreneurship among SMEs in the UAE: mediating effects of the sustainability orientation and bricolage behaviours of entrepreneurs. *International Journal of Trade and Global Markets, 16*(1-3), 250-264.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

OECD. (2019). *Entrepreneurship, SMEs and Local Development in Abu Dhabi: Boosting the entrepreneurial ecosystem*. OECD. https://www.oecd.org/cfe/leed/AbuDhabi-Ecosystem-Final-Web.pdf

Oliveira, T., & Martins, M. F. (2011). Literature review of information technology adoption models at firm level. *Electronic journal of information systems evaluation, 14*(1), 110-121.

Olusola, A., Usman, O., Aina-David, O., & Yinus, S. (2013). An appraisal of the impact of information technology (IT) on Nigeria small and medium enterprises (SMEs) performance. *International Journal of Academic Research in Management (IJARM) Vol, 2*, 140-152.

Organization of the Petroleum Exporting Countries. (2020). *UAE facts and figures*. Annual Statistical Bulletin. https://www.opec.org/opec_web/en/about_us/170.htm

Özcan, A. (2020). Implementation of Time-Driven Activity-Based Costing System in the Manufacturing Industry: Evidence from Turkey. In *Management Accounting Standards for Sustainable Business Practices* (pp. 272-283). IGI Global.

Palacios-Marqués, D., Soto-Acosta, P., & Merigó, J. M. (2015). Analyzing the effects of technological, organizational and competition factors on Web knowledge exchange in SMEs. *Telematics and Informatics, 32*(1), 23-32.

Pallant, J. (2010). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS*. McGraw-hill education (UK).

Pan, M.-J., & Jang, W.-Y. (2008). Determinants of the adoption of enterprise resource planning within the technology-organization-environment framework: Taiwan's communications industry. *Journal of Computer information systems, 48*(3), 94-102.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Paradzal, L., Wadesango, N., & Sitsha, L. (2023). Impact of Activity Based Costing System on Financial Performance of SMEs: A Case of Lester Trading Private Limited. *Journal of Accounting, Finance and Auditing Studies, 9*(3), 108-126.

Pearl, D. K., & Fairley, D. (1985). Testing for the potential for nonresponse bias in sample surveys. *Public Opinion Quarterly, 49*(4), 553-560.

Peng, D. X., & Lai, F. (2012). Using partial least squares in operations management research: A practical guideline and summary of past research. *Journal of operations management, 30*(6), 467-480.

Peterson, R. A., & Kim, Y. (2013). On the relationship between coefficient alpha and composite reliability. *Journal of applied psychology, 98*(1), 194–198.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology, 88*(5), 879.

Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of management, 12*(4), 531-544.

Popa, S., Soto-Acosta, P., & Palacios-Marqués, D. (2022). A discriminant analysis of high and low-innovative firms: the role of IT, human resources, innovation strategy, intellectual capital and environmental dynamism. *Journal of Knowledge Management, 26*(6), 1615-1632.

Porter, M. (2010). A strategy for sustaining growth and prosperity for Peru. *Presentación CADE, Instituto de Estrategia y Competitividad de Urubamba*, 1-83.

Pratono, A. H., & Mahmood, R. (2015). Entrepreneurial orientation and firm performance: How can micro, small and medium-sized enterprises survive environmental turbulence? *Pacific Science Review B: Humanities and Social Sciences, 1*(2), 85-91.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior research methods, 40*(3), 879-891.

Presutti, M., & Odorici, V. (2019). Linking entrepreneurial and market orientation to the SME's performance growth: the moderating role of entrepreneurial experience and networks. *International Entrepreneurship and Management Journal, 15*, 697-720.

Price, D., & Stoica, M. (2015). The relationship between resources and firm performance: Factors that influence SMEs. *Academy of Entrepreneurship Journal, 21*(2), 87.

Pritchard, R. D., & Karasick, B. W. (1973). The effects of organizational climate on managerial job performance and job satisfaction. *Organizational behavior and human performance, 9*(1), 126-146.

Priyatmo, T., & Akbar, R. (2019). Analysis of the prospect of implementing activity-based costing (ABC) in governmental organisations: A study at the state treasury office Jakarta IV. *Journal of Accounting and Investment, 20*(1), 1-22.

Qalati, S. A., Ostic, D., Sulaiman, M. A. B. A., Gopang, A. A., & Khan, A. (2022). Social media and SMEs' performance in developing countries: Effects of technological-organizational-environmental factors on the adoption of social media. *SAGE Open, 12*(2).

Qi, C., & Chau, P. Y. K. (2018). Will enterprise social networking systems promote knowledge management and organizational learning? An empirical study. *Journal of Organizational Computing and Electronic Commerce, 28*(1), 31-57.

Qi, Y., & Che Azmi, A. (2021). Factors affecting electronic invoice adoption and tax compliance process efficiency. *Transforming Government: People, Process and Policy, 15*(1), 150-168.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Quartey, P., Turkson, E., Abor, J. Y., & Iddrisu, A. M. (2017). Financing the growth of SMEs in Africa: What are the contraints to SME financing within ECOWAS? *Review of development finance, 7*(1), 18-28.

Rahmouni, A. (2008). *The implementation of accrual accounting by activities in French firms* (Doctoral dissertation, PhD thesis, University of the South Toulon-VAR, Toulon).

Rajaraman, V. (2018). *Introduction to information technology*. PHI Learning Pvt. Ltd.

Ramdani, B., Chevers, D., & Williams, D. A. (2013). SMEs' adoption of enterprise applications: A technology-organisation-environment model. *Journal of small business and enterprise development, 20*(4), 735-753.

Ramiah, K. (2009). *Validity of Roger's diffusion of treatment innovation for pregnant smokers* (Doctoral dissertation, The George Washington University).

Rammer, C., Czarnitzki, D., & Spielkamp, A. (2009). Innovation success of non-R&D-performers: substituting technology by management in SMEs. *Small Business Economics, 33*, 35-58.

Ramon-Jeronimo, J. M., Florez-Lopez, R., & Araujo-Pinzon, P. (2019). Resource-based view and SMEs performance exporting through foreign intermediaries: The mediating effect of management controls. *Sustainability, 11*(12), 3241.

Rasid, S. Z. A., Rahman, A. R. A., Ismail, W. K. W., Osman, M. H. M., & Amin, M. (2011). The Mediating Effect of Management Accounting Systems on the Relationships between Contextual Variables and Organizational Performance. In *Global Business and Social Science Research Conference, Radisson Blu Hotel, Beijing, China* (pp. 20-21).

Raucci, D., & Lepore, D. (2020). A simplified activity-based costing approach for SMEs: the case study of an Italian small road company. *European Research Studies Journal, 23*(1), 198-214.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Rehman, N., Nor, M. N. M., Taha, A. Z., & Mahmood, S. (2018). Impact of information technology capabilities on firm performance: Understanding the mediating role of corporate entrepreneurship in SMEs. *Academy of Entrepreneurship Journal, 24*(3), 1-19.

Reinartz, W., Haenlein, M., & Henseler, J. (2009). An empirical comparison of the efficacy of covariance-based and variance-based SEM. *International Journal of research in Marketing, 26*(4), 332-344.

Rhee, M., & Stephens, A. R. (2020). Innovation-orientated technology assimilation strategy and Korean SMES'enhancing innovation capability, competitive advantage and firm performance. *International Journal of Innovation Management, 24*(06), 2050081.

Ríos-Manríquez, M., Colomina, C. I. M., & Pastor, M. L. R.-V. (2014). Is the activity based costing system a viable instrument for small and medium enterprises? The case of Mexico. *Estudios gerenciales, 30*(132), 220-232.

Rivard, S., Raymond, L., & Verreault, D. (2006). Resource-based view and competitive strategy: An integrated model of the contribution of information technology to firm performance. *The Journal of Strategic Information Systems, 15*(1), 29-50.

Rizzo, J. R., House, R. J., & Lirtzman, S. I. (1970). Role conflict and ambiguity in complex organizations. *Administrative science quarterly, 15*(2), 150-163.

Rogers, E. (1995). *Diffusion of innovations (Fourth Paperback ed.)*. New York: The Free Press Simon & Schuster Inc.

Rogers, E. M. (2010). *Diffusion of innovations*. Simon and Schuster.

Rozlan, R., & Hashim, J. H. (2018). The Management Accounting Practices (Maps) and Financial Performance Of Small & Medium Enterprises (SMEs): the evidences from the Northern Corridor Implementation Authority (Ncia)'S Region. *Al Qimah Al Mudhafah the Journal of Management and Science, 4*(1), 1-16.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Ruivo, P., Oliveira, T., & Neto, M. (2014). Examine ERP post-implementation stages of use and value: Empirical evidence from Portuguese SMEs. *International journal of accounting information systems, 15*(2), 166-184.

Ruivo, P., Rodrigues, J., Johansson, B., Oliveira, T., & Rebelo, J. (2016). Using TOE and RBV theories to define a theoretical model to assess ERP value across Iberian Manufacturing and Services SMEs. *Procedia Computer Science, 100*, 474-479.

Sabbah, H., Trabulsi, H., Chbib, R., & Sabbah, I. (2019). Cloud Computing in Lebanese Enterprises: Applying the Technology, Organization, and Environment (TOE) Framework. *Journal of Computer and Communications, 7*(10), 21-35.

Safari, A., & Saleh, A. S. (2020). Key determinants of SMEs' export performance: a resource-based view and contingency theory approach using potential mediators. *Journal of Business & Industrial Marketing, 35*(4), 635-654.

Sahin, I. (2006). Detailed review of Rogers' diffusion of innovations theory and educational technology-related studies based on Rogers' theory. *Turkish Online Journal of Educational Technology-TOJET, 5*(2), 14-23.

Sahu, P. K. (2013). *Research methodology: A guide for researchers in agricultural science, social science and other related field*. Springer.

San-Martín, S., Jiménez, N., & López-Catalán, B. (2016). The firms benefits of mobile CRM from the relationship marketing approach and the TOE model. *Spanish journal of marketing-ESIC, 20*(1), 18-29.

Sang, S., Lee, J. D., & Lee, J. (2010). E-government adoption in Cambodia: A partial least squares approach. *Transforming Government: People, Process and Policy, 4*(2), 138-157.

Santoro, M. D., & Bierly, P. E. (2006). Facilitators of knowledge transfer in university-industry collaborations: A knowledge-based perspective. *IEEE Transactions on Engineering management, 53*(4), 495-507.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Sarstedt, M., & Mooi, E. (2014). *Cluster analysis in A concise guide to market research*. Springer Heidelberg.

Sartorius, K., Eitzen, C., & Kamala, P. (2007). The design and implementation of Activity Based Costing (ABC): a South African survey. *Meditari: Research Journal of the School of Accounting Sciences, 15*(2), 1-21.

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*. Pearson education.

Schafer, J. L. (1999). Multiple imputation: a primer. *Statistical methods in medical research, 8*(1), 3-15.

Schilirò, D. (2015). Innovation in small and medium enterprises in the United Arab Emirates. *International Journal of Social Science Studies, 3*, 148.

Schneider, B. (1973). The perception of organizational climate: The customer's view. *Journal of applied psychology, 57*(3), 248.

Schneider, B. (1982). *Interactional psychology and organizational behavior*. Industrial/Organizational Psychology, Department of Psychology Michigan State Universiy.

Scuotto, V., Del Giudice, M., & Carayannis, E. G. (2017). The effect of social networking sites and absorptive capacity on SMES'innovation performance. *The Journal of Technology Transfer, 42*, 409-424.

Sedgley, D. J., & Jackiw, C. F. (2001). *The 123s of ABC in SAP: using SAP R/3 to support activity-based costing*. John Wiley & Sons, Inc.

Sekar, G., Viswanathan, K., & Sambasivan, M. (2018). Effects of project-related and organizational-related factors on five dimensions of project performance: A study across the construction sectors in Malaysia. *Engineering Management Journal, 30*(4), 247-261.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Sekaran, U., & Bougie, R. (2003). *Research methods for business: A skill building approach*. John Wiley & Sons.

Sekaran, U., & Bougie, R. (2010). *Research methods for business: A skill building approach*. John Wiley & Sons.

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons.

Semrau, T., Ambos, T., & Kraus, S. (2016). Entrepreneurial orientation and SME performance across societal cultures: An international study. *Journal of Business Research, 69*(5), 1928-1932.

Seng, N. L., & Arumugam, T. (2017). Financial reward and motivation toward employee job performance in the hospitality industry in Klang Valley. *Electronic Journal of Business & Management, 2*(1), 51-60.

Sentanu, I. N. W., & Budiartha, K. (2019). Effect of taxation modernization on tax compliance. *International Research Journal of Management, IT and Social Sciences, 6*(4), 207-213.

Setiawati, N. P. A., Sunarsi, D., Nurjaya, S., Manan, A., Nurhadi, A., Erlangga, H., Dwiwarman, D. A., Dharmayuni, L., Indrawan, Y. W., & Maddinsyah, A. (2021). Effect of Technology Acceptance Factors, Website Service Quality and Specific Holdup Cost on Customer Loyalty: A Study in Marketing Departement of Packaging Industry. *Annals of the Romanian Society for Cell Biology*, 12685-12697.

Setyoko, P. I., & Kurniasih, D. (2022). SMEs Performance During Covid-19 Pandemic and VUCA Era: How the role of Organizational Citizenship Behavior, Budgetary, Participation and Information Asymmetry? *International Journal of Social and Management Studies, 3*(4), 105-116.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Shahadat, M. H., Nekmahmud, M., Ebrahimi, P., & Fekete-Farkas, M. (2023). Digital Technology Adoption in SMEs: What Technological, Environmental and Organizational Factors Influence in Emerging Countries? *Global Business Review*.

Sheikh, K., & Mattingly, S. (1981). Investigating non-response bias in mail surveys. *Journal of Epidemiology & Community Health, 35*(4), 293-296.

Shields, M. D. (1995). An Empirical Analysis of Firms' Implementation Experiences with Activity-Based Costing. *Journal of Management Accounting Research, 7*, 148-166.

Shim, E., & Sudit, E. F. (1995). How manufacturers price products. *Strategic Finance, 76*(8), 37.

Singer, E. (2006). Introduction: Nonresponse Bias in Household Surveys. *The Public Opinion Quarterly, 70*(5), 637-645.

Singh, S., & Singh, J. (2022). A survey on master data management techniques for business perspective. In *Cyber Intelligence and Information Retrieval: Proceedings of CIIR 2021* (pp. 609-617). Springer.

Slack, N., Chambers, S., & Johnston, R. (2010). *Operations management*. Pearson education.

Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In *Sociological methodology* (Vol. 13, pp. 290-312).

Soh, D. S., & Martinov-Bennie, N. (2011). The internal audit function: Perceptions of internal audit roles, effectiveness and evaluation. *Managerial auditing journal, 26*(7), 605-622.

Soieb, A. Z. M., Othman, J., & D'Silva, J. L. (2013). The effects of perceived leadership styles and organizational citizenship behaviour on employee engagement: The mediating role of conflict management. *International Journal of Business and Management, 8*(8), 91.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Soininen, J., Martikainen, M., Puumalainen, K., & Kyläheiko, K. (2012). Entrepreneurial orientation: Growth and profitability of Finnish small-and medium-sized enterprises. *International Journal of Production Economics, 140*(2), 614-621.

Soobaroyen, T., & Poorundersing, B. (2008). The effectiveness of management accounting systems: Evidence from functional managers in a developing country. *Managerial Auditing Journal, 23*(2), 187-219.

Soto-Acosta, P., Popa, S., & Palacios-Marqués, D. (2017). Social web knowledge sharing and innovation performance in knowledge-intensive manufacturing SMEs. *The Journal of Technology Transfer, 42*, 425-440.

Spicer, D. P., & Sadler-Smith, E. (2006). Organizational learning in smaller manufacturing firms. *International small business journal, 24*(2), 133-158.

Srisusilawati, P., Malik, Z. A., Silviany, I. Y., & Eprianti, N. (2021). The roles of self efficacy and sharia financial literacy to SMES performance: business model as intermediate variable. *F1000Research, 10*, 1310.

Stieninger, M., Nedbal, D., Wetzlinger, W., & Wagner, G. (2018). Factors influencing the organizational adoption of cloud computing: a survey among cloud workers. *International Journal of Information Systems and Project Management, 6*(1), 5-23.

Stjepić, A.-M., Sušac, L., & Vugec, D. S. (2019). Technology, Organizational and Environmental Determinants of Business Intelligence Systems Adoption in Croatian SME: A Case Study of Medium-Sized Enterprise. *International Journal of Economics and Management Engineering, 13*(5), 737-742.

Sulistyo, H., & Ayuni, S. (2020). Competitive advantages of SMEs: The roles of innovation capability, entrepreneurial orientation, and social capital. *Contaduría y administración, 65*(1).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Tabachnick, B. G., & Fidell, L. S. (2007). Multivariate analysis of variance and covariance. *Using multivariate statistics, 3*, 402-407.

Taherian, H., Feiz, D., & Heydarkhani, Z. (2023). Studying the Effective Managerial and Organizational Factors on the Happiness and Joy in the Universities and their Effects on the Knowledge Production. *Quarterly Journal of Research and Planning in Higher Education, 20*(2), 99-116.

Teece, D. J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic management journal, 28*(13), 1319-1350.

Tenenhaus, M., Vinzi, V. E., Chatelin, Y.-M., & Lauro, C. (2005). PLS path modeling. *Computational statistics & data analysis, 48*(1), 159-205.

Teo, T. S., Ranganathan, C., & Dhaliwal, J. (2006). Key dimensions of inhibitors for the deployment of web-based business-to-business electronic commerce. *IEEE Transactions on engineering Management, 53*(3), 395-411.

Thatrak, D. (2021). Human Capital Orientation, Employee Creativity Development, Organizational Innovation Capabilities, and Outstanding Performance of SMEs Businesses in Thailand. *International Journal of Economics and Business Administration, 9*(2), 126-142.

Torkkeli, L., Kuivalainen, O., Saarenketo, S., & Puumalainen, K. (2019). Institutional environment and network competence in successful SME internationalisation. *International Marketing Review, 36*(1), 31-55.

Tornatzky, L. G., & Fleischer, M. (1990). *The process of technological innovation*. Lexington, MA: Lexington Books.

Tsou, H.-T., & Hsu, S. H.-Y. (2015). Performance effects of technology–organization–environment openness, service co-production, and digital-resource readiness: The case of the IT industry. *International Journal of Information Management, 35*(1), 1-14.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Tung, A., Baird, K., & Schoch, H. P. (2011). Factors influencing the effectiveness of performance measurement systems. *International Journal of Operations & Production Management, 31*(12), 1287-1310.

Van Nguyen, H., & Brooks, A. (1997). An empirical investigation of adoption issues relating to activity-based costing. *Asian Review of Accounting, 5*(1), 1-18.

Vendrell-Herrero, F., Bustinza, O. F., & Opazo-Basaez, M. (2021). Information technologies and product-service innovation: The moderating role of service R&D team structure. *Journal of Business Research, 128*, 673-687.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.

Vetchagool, W., Augustyn, M. M., & Tayles, M. (2020). Impacts of activity-based costing on organizational performance: evidence from Thailand. *Asian Review of Accounting, 28*(3), 329-349.

Wahab, A. A., Mohamad, M., & Said, J. M. (2018). The implementation of activity-based costing in the Accountant General's Department of Malaysia. *Asian Journal of Accounting and Governance, 9*, 63-76.

Walden, R., Lie, S., Pandolfo, B., & Nemme, A. (2020). Developing strategic leadership and innovation capability for manufacturing SMEs transitioning to digital manufacturing technology. In *Leadership styles, innovation, and social entrepreneurship in the era of digitalization* (pp. 164-189). IGI Global.

Wang, H.-L. (2014). Theories for competitive advantage. In H. Hasan (Ed.), *Being Practical with Theory: A Window into Business Research* (pp. 33-43). Wollongong, Australia: THEORI.

Wang, Y. (2016). What are the biggest obstacles to growth of SMEs in developing countries?–An empirical evidence from an enterprise survey. *Borsa Istanbul Review, 16*(3), 167-176.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Wang, Z., Wang, Q., Zhao, X., Lyles, M. A., & Zhu, G. (2016). Interactive effects of external knowledge sources and internal resources on the innovation capability of Chinese manufacturers. *Industrial Management & Data Systems, 116*(8), 1617-1635.

Wani, V. P., Garg, T. K., & Sharma, S. K. (2004). Effective industry/institute interaction for developing entrepreneurial vision amongst engineers for the sustainable development of SMEs in India. *International journal of technology transfer and commercialisation, 3*(1), 38-55.

Watson, A., Obal, M., & Kannan, R. P. (2021). Expect Success, Get Success. *Research-Technology Management, 64*(4), 29-36.

Wegmann, G. (2019). A typology of cost accounting practices based on activity-based costing-a strategic cost management approach. *Asia-Pacific Management Accounting Journal, 14*, 161-184.

Wei-loon, K., & Wulandari, R. (2023). Relationships Among Owner-Manager Characteristics, E-commerce Adoption and Performance of Small and Medium Enterprises (SMEs) in Malaysia. *The Journal of Asian Finance, Economics and Business (JAFEB), 10*(1), 101-109.

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic management journal, 5*(2), 171-180.

Weshah, S., Almari, M., Bader, A., Abughniem, M., Al Aishat, M., & Humeedat, M. (2022). Harmonizing ABC System with ERP System for Operational Effectiveness Improvement during Covid-19 Pandemic. In *2022 International Conference on Business Analytics for Technology and Security (ICBATS)* (pp. 1-5). IEEE.

Wetzels, M., Odekerken-Schröder, G., & Van Oppen, C. (2009). Using PLS path modeling for assessing hierarchical construct models: Guidelines and empirical illustration. *MIS quarterly*, 177-195.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Wiegmann, D. A., & von Thaden, T. L. (2003). Using schematic aids to improve recall in incident reporting: The Critical Event Reporting Tool (CERT). *The International Journal of Aviation Psychology, 13*(2), 153-171.

Xiao, J. Z., Duh, R.-R., & Chow, C. W. (2011). Exploring the direct and indirect performance effects of information/communication technology and management accounting and controls. *Accounting and Business Research, 41*(2), 145-169.

Yahaya, O. A. (2019). Effects of Management Accounting Practices on Financial Performance of Small and Medium Enterprises in Gusau Metropolis of Zamfara State, Nigeria. *International Journal of Management and Commerce Innovations, 2*(2), 31-67.

Yan, S. (2010). Competitive strategy and business environment: The case of small enterprises in China. *Asian Social Science, 6*(11), 64.

Yang, H., Peng, C., Du, G., Xie, B., & Cheng, J. S. (2023). How does ambidextrous leadership influence technological innovation performance? An empirical study based on high-tech enterprises. *Technology Analysis & Strategic Management, 35*(6), 737-751.

Yunis, M., Tarhini, A., & Kassar, A. (2018). The role of ICT and innovation in enhancing organizational performance: The catalysing effect of corporate entrepreneurship. *Journal of Business Research, 88*, 344-356.

Zamrud, N., Abu, M., Kamil, N., & Safeiee, F. (2020). A comparative study of product costing by using activity-based costing (ABC) and time-driven activity-based costing (TDABC) method. In *iMEC-APCOMS 2019: Proceedings of the 4th International Manufacturing Engineering Conference and The 5th Asia Pacific Conference on Manufacturing Systems* (pp. 171-178). Springer.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Zhai, Y.-M., Sun, W.-Q., Tsai, S.-B., Wang, Z., Zhao, Y., & Chen, Q. (2018). An empirical study on entrepreneurial orientation, absorptive capacity, and SMEs' innovation performance: A sustainable perspective. *Sustainability, 10*(2), 314.

Zhang, L., Chen, J., Liu, Z., & Hao, Z. (2023). Digital Inclusive Finance, Financing Constraints, and Technological Innovation of SMEs—Differences in the Effects of Financial Regulation and Government Subsidies. *Sustainability, 15*(9), 7144.

Zhang, R., & Fu, Y. (2022). Technological progress effects on energy efficiency from the perspective of technological innovation and technology introduction: An empirical study of Guangdong, China. *Energy Reports, 8*, 425-437.

Zhang, X., Ma, X., & Wang, Y. (2012). Entrepreneurial orientation, social capital, and the internationalization of SMEs: Evidence from China. *Thunderbird International Business Review, 54*(2), 195-210.

Zhao, X., Lynch Jr, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of consumer research, 37*(2), 197-206.

Zhu, K., Kraemer, K., & Xu, S. (2003). Electronic business adoption by European firms: a cross-country assessment of the facilitators and inhibitors. *European journal of information systems, 12*, 251-268.

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2013). *Business research methods*. Cengage learning.

Zimmerman, J. L., & Yahya-Zadeh, M. (2011). Accounting for decision making and control. *Issues in Accounting Education, 26*(1), 258-259.

Zrzavy, W. (2020). *Strategies for IT Product Managers to Manage Microservice Systems in Enterprises* (Doctoral dissertation, Walden University).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

QUESTIONNAIRE

Dear Sir/Madam

I am a PhD candidate at Sultan Idris Education University, Malaysia. I am currently collecting data for my PhD research entitled "Technology, Organization and Environment Factors and SMEs Performance in Dubai and Abu Dhabi". Please be assured that your responses will remain confidential and will only be used for academic purposes. Hence, your identity will never be known throughout any part of the research process. If you choose to participate in this survey, please answer all questions as honestly as possible. Completion and return of the questionnaire will indicate your willingness to participate in this research. However, the respondents from SMEs without an ABC system deployment are requested not to fill in the questionnaire.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Thank you for taking the time to assist me in my educational endeavors.

Yours sincerely,

Doctorate Candidate

PART ONE: Demographic Characteristics

The following questions are for informative purposes only and allow us to explain, in generic and cumulative terms, the participants of the study. The information provided here will not be related to you in any way and cannot be used to recognize you. No individual reactions are published because the information will be reported in aggregate form only.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Instruction:

Please read and tick (√) the most appropriate response to indicate about yourself.

1. Please indicate your gender:

Male [ ] Female [ ]

2. Please indicate your age:

Less than 25 years [ ] 26-35 years [ ]

36-45 years [ ] Over 45 years [ ]

3. Please indicate the highest level of your education you have completed:

Basic/secondary education [ ] Undergraduate [ ]

Masters [ ] PhD [ ]

4. Position

Owner [ ] Executive Director [ ] Manager [ ]

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

5. Industry/sector

Manufacturing [ ] Service [ ] Oil & Gas [ ]

Information Technology [ ] Construction & Materials [ ]

Consumer discretionary [ ] Others [ ]

6. Number of employees

Less than 10 [ ] 11-50 [ ] 51-250 [ ] Others[ ]

7. Years of operation

Less than 10 years [ ] 10-30 years [ ] 31-50 years [ ]

Over 50 years [ ]

8. Business owner structure

Sole proprietorship [ ] Partnership [ ]

Private limited liability company [ ]

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Instruction**:**

Using the scale of 1 (strongly disagree), 2 (disagree), 3 (Neutral), 4 (agree) to 5 (strongly agree), indicate your level of agreement with each statement as honestly and as objectively as possible by circling the appropriate number.

Technological factor:

S/N	Items	SD	D	N	A	SA
1	Technology promotes business efficiency					
2	Use of technology enhances quick service to customers					
3	Use of technology enables the firm to get market information					
4	New technology improves the existing business processes					
5	Some applications were replaced by a new system in the firm					
6	Availability of technology has increased business performance					
7	Is it easy to adopt new technology irrespective of new functionality					
7	Internet connectivity is available to the business if needed					
9	Technology applications are user-friendly					

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Organizational factor:

S/N	Items	SD	D	N	A	SA
1	Owner of SME researches the new technologies, processes and product ideas.					
2	SME owner actively seeks innovative ideas.					
3	SME owner encourages innovation activities.					
4	SME owner promotes the advantages of new solutions and ideas enthusiastically.					
5	Mistakes regarding creative and innovative efforts of individuals are tolerated by the owner.					
6	Our enterprise has developed a program to maintain good customer communication.					
7	In our enterprise, people are rewarded in the proportion to the excellence of their job performance.					

Environmental factor:

S/N	Items	SD	D	N	A	SA
1	Government regulations support SMEs					
2	Government makes available necessary infrastructure for the performance of SMEs					
3	Organization innovation and initiatives improve SMEs performance					
4	Our enterprise has a competitive advantage over its rivals					

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

ABC implementation critical success factors:

S/N	Items	SD	D	N	A	SA
1	Product line must be diverse and costs must be highly reliable to compete in our markets.					
2	Operating cost data are extremely important because of our cost reduction efforts.					
3	Cost information is the most important factor in pricing decisions.					
4	ABC receives strong active support from the owner of SMEs					
5	SME owners provide adequate resources to the ABC adoption effort.					
6	Adoption of ABC is closely tied to the competitive strategies of the business unit.					
7	Employees understand the ABC mechanisms.					
8	Adequate training and employee productivity is used to measure performance of ABC.					
9	ABC is well accepted by employees.					
10	Employees feel comfortable with ABC.					

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

SMEs Performance:

S/N	Items NON-FINANCIAL PERFORMANCE	SD	D	N	A	SA
1	We have more repeat sales in our enterprise					
2	It is easy to see repeat clients in our enterprise					
3	If a client trade with us at least once, he/she remains with us forever.					
4	Our enterprise ensures that customers´ product and/or service preferences are satisfied.					
5	Our enterprise delivers products and/or services that are exactly what customers want					
6	Our enterprise delivers products and/or services that exceed customers' expectations.					
7	Our employees would be happy to make personal sacrifices if it is too important for the enterprise's well-being.					
8	The bonds between our enterprise and our employees are strong.					
9	Our employees have little or no commitment to this company.					
10	Most of our employees like their jobs in this company					
11	Most of our employees think their supervisor treats them well					
12	Most of our employees do not intend to work for a different company.					

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

13	Overall, our employees are quite satisfied with their jobs.					
14	Our product development cycle time has been reduced.					
15	Overall, our product development costs have been reduced.					
16	Our project duration has been reduced					
17	Our enterprise has more open sharing of information with our customers.					
18	Our enterprise has a more effective working relationship with our customers					
19	Our enterprise has an enhanced commitment to work with our customers in the future					
20	Our enterprise has an overall more productive working relationship with our customers					
21	Our enterprise is fast in adopting process with the latest technological innovations					
22	Our enterprise uses up-to-date or new technology in the process.					
23	Our enterprise has enough new products introduced to the market.					
24	Our enterprise is able to produce products with novelty features					
25	It required a major learning effort or experience by customers to use our product					

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

26	It took a long time before customers could understand our product's full advantages.					
27	The product/service concept was difficult for customers to evaluate or understand.					
28	The quality of our products/services compares well with competitor products					
29	Our products/services are of higher quality than competing products/services					
30	The quality of our current products/services compares well with others we have offered in the past.					
	FINANCIAL PERFORMANCE					
31	Our enterprise generates a relatively higher return on assets than our competitors do					
32	Our business unit has a cost advantage compared to our major competitor					
33	Our company is highly effective in terms of capital investments					
34	The return on investment of our company has improved over the past three years					
35	Our company has remarkable customer growth over the past three years.					
36	The sales volume of our product offerings has increased over the past three years.					
37	Our enterprise is more effective in opening up new					

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

	markets or expanding existing markets than our competitors.					
38	Our enterprise is able to change the market or lead customers' needs in new directions					
39	The profit of our company grew over the past three years.					
40	Our company achieves higher profit margins, even when charging comparable prices, than our major competitors.					

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi