CRITICAL SUCCESS FACTORS OF ENTERPRISE RESOURCE PLANNING POST-IMPLEMENTATION SUCCESS IN AUTOMOTIVE INDUSTRY

EHSAN KISH HAZRAT SOLTAN

UNIVERSITI TEKNOLOGI MALAYSIA

CRITICAL SUCCESS FACTORS OF ENTERPRISE RESOURCE PLANNING POST-IMPLEMENTATION SUCCESS IN AUTOMOTIVE INDUSTRY

EHSAN KISH HAZRAT SOLTAN

A thesis submitted in fulfilment of the
requirements for the award of the degree of
Doctor of Philosophy (Management)

Faculty of Management
Universiti Teknologi Malaysia

JUNE 2016

DEDICATION

I dedicate this thesis to my honorable father and mother “Gholam Reza” and “Fereshteh”, Also my lovely sister “Atena” and supportive brother “Pezhman”. Your influence enabled me to pursue this journey and complete it. By you, I learned to nurture an inquisitive mind, find great joy in learning, and have the determination to complete what you started. You are the foundation for my achievement, thank you.

ACKNOWLEDGEMENT

Anyone who has undertaken a study such as this knows that it is not possible to complete without the support and assistance of many individuals. I would like to dedicate this space to recognizing those who were instrumental in helping me finally finish this thesis.

I am deeply indebted to my supervisor, Assoc. Prof. Dr. Ahmad Jusoh. Without his guidance, support, and patience, this work would not completed. He taught me the knowledge, methods, and the research skills needed to help me survive in the academic world. Aside from my PhD study, I am likewise extremely grateful for the concern he showed for my career and well-being.

My special thanks also to Prof. Dr. Khalil Bin Md Nor. He taught me substantially in the areas of experience and encouraged me when I was depressed.

I am particularly thankful to my family who have continuously prayed for, supported and encouraged me throughout the journey in completing my study. They have helped me a great deal, and have played a vital part in helping me to achieve my goals and dreams.

Lastly, I would like to thank the staff of UTM for their kind assistance. In addition, I would also like to thank all of my best friends … at UTM.

ABSTRACT

Enterprise resource planning (ERP) has been widely used to improve productivity, increase the efficiency of business operations and reduce firm's costs. ERP implementation is highly beneficial, however, sustaining those benefits are challenging for most organisations at post-implementation phase. Based on the reviewed literature, there is no clear evidence of comprehensive investigation done on the effects of critical success factors (CSFs) of ERP post-implementation success. This study uses past literature, as well as the existing theoretical and conceptual frameworks to illustrate a new conceptual framework that incorporates CSFs with technological, organisational and environmental theory (TOE). The CSFs are ERP technological factors, ERP organisational factors and ERP environmental factors. The data collection instrument used in this study is a questionnaire. Using cross-sectional survey method, data were collected from 290 suppliers in the Iranian automotive industry. They were identified through stratified sampling method. Hypothesised relationships were examined using partial least squares structural equation modeling technique (PLS-SEM). The results highlighted positive effects of some CSFs of ERP, namely ERP data accuracy, ERP communication and ERP training benefits. In addition, the results of the study were aligned with TOE and life cycle theory (LCT), underlining the roles of some key CSFs of ERP. Findings of this study have contributed theoretically to the ERP by demonstrating new insights on technological, organisational and environmental factors on ERP benefits particularly in Iran. Finally, the study could be used as a guideline to encourage managers to focus more on CSFs of ERP for organisations to obtain more benefits.

ABSTRAK

Perancangan sumber perusahaan (ERP) telah digunakan secara meluas untuk mempertingkatkan produktiviti, meningkatkan kecekapan operasi perniagaan dan mengurangkan kos firma. Pelaksanaan ERP adalah sangat bermanfaat, walau bagaimanapun, mengekalkan manfaat tersebut adalah mencabar bagi kebanyakan organisasi pada fasa pasca pelaksanaan. Berdasarkan semakan literatur, tidak terdapat bukti yang jelas mengenai siasatan menyeluruh dilakukan terhadap kesan faktor kejayaan kritikal (CSFs) bagi kejayaan pasca pelaksanaan ERP. Kajian ini menggunakan literatur yang lalu, serta rangka kerja teoretikal dan konseptual sediada untuk menggambarkan kerangka konseptual yang baharu dengan menggabungkan CSFs dengan teori teknologi, organisasi dan persekitaran (TOE). CSFs tersebut ialah faktor teknologi ERP, faktor organisasi ERP dan faktor persekitaran ERP. Instrumen pengumpulan data yang digunakan dalam kajian ini ialah borang soal selidik. Dengan menggunakan kaedah tinjauan keratan rentas, data telah dikumpulkan daripada 290 pembekal di dalam industri automotif Iran. Mereka telah dikenal pasti melalui kaedah pensampelan berstrata. Hubungan hipotesis telah diuji menggunakan teknik kuasa dua terkecil separa untuk pemodelan persamaan berstruktur (PLS-SEM). Keputusan menunjukkan kesan positif beberapa CSFs ERP iaitu ketepatan data ERP, komunikasi ERP dan manfaat latihan ERP. Di samping itu, hasil kajian adalah selari dengan teori TOE dan kitaran hayat (LCT) yang menggariskan peranan beberapa CSFs ERP yang penting. Hasil kajian ini telah memberi sumbangan dalam bentuk teori kepada ERP dengan menunjukkan sudut pandangan baharu berkaitan faktor teknologi, organisasi dan persekitaran ke atas manfaat ERP terutamanya di Iran. Akhir sekali, kajian ini boleh digunakan sebagai panduan untuk menggalakkan para pengurus memberi lebih tumpuan kepada CSFs ERP bagi organisasi memperolehi lebih banyak manfaat.

TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMENT	iv
	ABSTRACT	v
	ABSTRAK	vi
	TABLE OF CONTENTS	vii
	LIST OF TABLES	xvi
	LIST OF FIGURES	xix
	LIST OF ABBREVIATIONS	xxi
	LIST OF APPENDICES	xxii
1	**INTRODUCTION**	**1**
	1.1 Introduction	1
	1.2 Background of The Study	1
	1.3 ERP in Automotive Industry of Iran	5
	1.4 Problems Statement	8
	1.5 Research Questions	14
	1.6 Research Objectives	14
	1.7 Significance of The Study	15
	1.8 Scope of The Study	17
	1.9 Operational Definitions	18
	1.9.1 Dependent Variables (DVs):	18
	1.9.2 Independent Variables (IVs):	19
	1.10 Outline of The Thesis	21

2	**LITERATURE REVIEW**	**22**
	2.1 Introduction	22
	2.2 Enterprise Resource Planning	24
	2.2.1 Evolution of ERP System	25
	2.2.2 Definitions of ERP	28
	2.3 ERP Life Cycle	29
	2.4 ERP Benefits	32
	2.4.1 ERP Post-Implementation Success (PIS)	34
	2.4.2 ERP Benefits in Post-Implementation Phase	37
	2.4.2.1 Operational Benefits (OP)	37
	2.4.2.2 Managerial Benefits (MB)	38
	2.4.2.3 Strategic Benefits (SB)	38
	2.4.2.4 IT Infrastructure Benefits (IT)	39
	2.4.2.5 Organizational Benefits (OR)	39
	2.4.3 ERP Benefits in This Study	40
	2.5 ERP Critical Success Factors (CSFs)	42
	2.6 CSFs Across the ERP Life Cycle	43
	2.6.1 CSFs in Pre Implementation and Implementation Phase	45
	2.6.2 Previous Studies on ERP Post-Implementation	46
	2.6.3 CSFs in Post-Implementation Phase	54
	2.6.3.1 ERP Top Management Support	56
	2.6.3.2 ERP External ConsultantsSupport	57
	2.6.3.3 ERP User Support	58
	2.6.3.4 ERP Alignment with Organization Operation	58
	2.6.3.5 ERP Training	58
	2.6.3.6 ERP Implementation Team	59
	2.6.3.7 ERP Communication	59
	2.6.3.8 ERP External Pressure	60
	2.6.3.9 ERP Project Management	60
	2.6.3.10 Organizational Culture	60
	2.6.3.11 ERP Planning	61
	2.6.3.12 ERP Learning	61
	2.6.3.13 ERP External Trust	62
	2.6.3.14 ERP Data Accuracy	62

2.6.3.15 ERP Configuration 62
2.6.3.16 ERP Attributes 63
2.6.3.17 ERP Internal Expertise 63
2.7 Justification in Relation to Ignoring Control Variables and Moderator 64
2.8 Need to Categorize ERP CSFs 65
2.9 Theoretical Foundations 67
2.9.1 The Technological, Organizational and Environmental (TOE) Theory 67
2.9.2 Theoretical Foundation of Life Cycle Theory and TOE Theory 69
2.10 The Contribution of the Framework to the Knowledge 69
2.11 Justification for Categorizing CSFs by TOE Factors 71
2.12 Conceptual Framework and Development of The Hypotheses 73
2.12.1 ERP Technological Factors Influence Post-Implementation Success (PIS) of ERP 78
2.12.1.1 ERP Attributes Influence PIS of ERP 79
2.12.1.2 ERP Internal Expertise Influence PIS of ERP 80
2.12.1.3 ERP Data Accuracy Influence PIS of ERP 82
2.12.1.4 Project Management and PIS of ERP 83
2.12.1.5 ERP Configuration Influence PIS of ERP 84
2.12.1.6 Implementation Team Influence PIS of ERP 85
2.12.1.7 ERP Communication Influence PIS of ERP 85
2.12.2 ERP Organizational factors Influence Post-Implementation Success (PIS) of ERP 87
2.12.2.1 ERP Top Management Support Influence PIS of ERP 89
2.12.2.2 ERP Alignment with Organization Operation Influence PIS of ERP 90
2.12.2.3 Planning Influence PIS of ERP 91
2.12.2.4 Organizational Culture Influence PIS of ERP 92
2.12.2.5 ERP Training Influence PIS of ERP 93
2.12.2.6 ERP Learning Influence PIS of ERP 94
2.12.2.7 ERP User Support Influence PIS of ERP 94

2.12.3 Environmental factors Influence Post-Implementation Success (PIS) of ERP 95
2.12.3.1 ERP External Pressure Influence PIS of ERP 96
2.12.3.2 ERP External Consultant Support Influence PIS of ERP 97
2.12.3.3 ERP External Trust Influence PIS of ERP 98
2.13 Summary of the Chapter 100

3 RESEARCH METHODOLOGY 101
3.1 Introduction 101
3.2 Research Design and Operational Framework 103
3.2.1 Research Method and Design Appropriateness 105
3.3 Target Population of This Study 107
3.4 Selection of the Best Respondents to Represent the Company in Relation to ERP Post-Implementation Success 108
3.4.1 IT Managers, CEOs and CIOs Best Representatives of ERP PIS 109
3.5 Sampling Process 111
3.5.1 Sampling Size of the Study 111
3.5.2 Sampling Method 113
3.6 Data Collection Procedures 116
3.6.1 The Measurement Instruments 116
3.7 Validity and Reliability of the Instrument 118
3.7.1 Content Validity 118
3.7.1.1 Pre-test 119
3.7.1.2 Face validity 120
3.7.1.3 Pilot Study 121
3.7.1.4 Reliability 121
3.7.2 Construct Validity 122
3.8 Descriptive Statistics 125
3.9 Inferential Statistics 126
3.9.1 Structural Equation Modelling (SEM) 126
3.9.1.1 Justification to Choose the Partial Least Square (PLS) 127
3.9.1.2 Assessing the Measurement Models 129

3.9.1.3 Internal Consistency Reliability and Indicator Reliability 130
3.9.1.4 Assessment of the Structural Model 132
3.9.1.5 Path Coefficient Estimates 133
3.9.1.6 Coefficient of Determination (R2 value) and Effect Size f2 133
3.9.1.7 Predictive Relevance Q2 and q2 134
3.10 Operational Research Process 135
3.11 Summary of the Chapter 136

4 DATA ANALYSIS 137
4.1 Introduction 137
4.2 Introduction to SPSS and Smart-PLS 138
4.3 Pilot Study 140
4.3.1 Reliability of The Instrument 141
4.3.2 Factor Analysis 142
4.3.2.1 Exploratory Factor Analysis (EFA) for Measurement Scales 143
4.3.2.2 Exploratory Factor Analysis (EFA) For Constructs 144
4.4 Response Rate 148
4.5 Evaluation of Underlying Assumptions 149
4.5.1 Missing Data and Treatment 149
4.5.2 Outliers Examination 151
4.5.3 Distribution of Data (Normality Test) 152
4.5.4 Homoscedasticity 153
4.5.5 Multicollinearity 155
4.6 Non- Response Biasness 156
4.7 Common Method Bias 157
4.8 Demographic Profile of Participants and Companies 158
4.8.1 Profile of Participants' Companies 160
4.8.2 Descriptive Statistics of Variables 160
4.9 Basic Model Evaluation 164
4.9.1 PLS Model 164
4.9.2 Assessment the Measurement Models 165

4.9.2.1 Internal Consistency Reliability and Indicator Reliability 166
4.9.2.2 Convergent Validity 167
4.9.2.3 Discriminant Validity 174
4.9.3 Assessment of Structural Model 179
4.9.3.1 Determination of Coefficient (R2) 180
4.9.3.2 Effect Sizes (f2) and (q2) 181
4.9.3.3 Path Coefficient Estimates (β) 182
4.9.3.4 Goodness-of-Fit Index 183
4.10 Results of Hypothesis Testing 184
4.10.1 The Relationship between ERP Attributes and ERP Post-Implementation Success 184
4.10.2 The Relationship between ERP Internal Expertise and EPIS 185
4.10.3 The Relationship between the ERP Data Accuracy and ERP Post-Implementation Success 185
4.10.4 The Relationship between ERP Project Management and ERP Post-Implementation Success. 186
4.10.5 The Relationship between ERP Configuration and ERP Post-Implementation Success 187
4.10.6 The Relationship between ERP Implementation Team and ERP Post-Implementation Success. 188
4.10.7 The Relationship between ERP Communications and ERP Post-Implementation Success. 189
4.10.8 The Relationship between ERP Top Management Support and ERP Post-Implementation Success 190
4.10.9 The Relationship between ERP Alignment with Organization Operation and ERP Post-Implementation Success 191
4.10.10 The Relationship between ERP Planning and ERP Post-Implementation Success 192
4.10.11 The Relationship between Organizational Culture and ERP Post-Implementation Success. 193

4.10.12 The Relationship between Training and ERP Post-Implementation Success 194
4.10.13 The Relationship between ERP Learning and ERP Post-Implementation Success 195
4.10.14 The Relationship between ERP User Support and ERP Post-Implementation Success 195
4.10.15 The Relationship between ERP External Pressure and ERP Post-Implementation Success 196
4.10.16 The Relationship between ERP External Consultants Support with ERP Post-Implementation Success 197
4.10.17 The Relationship between ERP External Trust and ERP Post-Implementation Success 198
4.11 Revised Conceptual Framework 200
4.12 Summary of The Chapter 202

5 DISCUSSION OF RESULTS AND CONCLUSION 204
5.1 Introduction 204
5.2 Discussion on the Research Question and Hypotheses 206
5.2.1 The Relationship between Technological Factors of ERP Critical Success Factors and ERP Post-Implementation Success 207
5.2.1.1 ERP Attributes Has Positive Effect on ERP Post-Implementation Success 207
5.2.1.2 ERP Internal Expertise Has Positive Effect on ERP Post-Implementation Success 209
5.2.1.3 ERP Data Accuracy Has Positive Effect on ERP Post-Implementation Success 210
5.2.1.4 ERP Project Management Has Positive Effect on ERP Post-Implementation Success 212
5.2.1.5 ERP Configuration Has Positive Effect on ERP Post-Implementation Success 213
5.2.1.6 ERP Implementation Team Has Positive Effect on ERP Post-Implementation Success 214

5.2.1.7 ERP Communication Has Positive Effect on ERP Post-Implementation Success 216
5.2.2 The Relationship between Organizational Factors of ERP Critical Success Factors and ERP Post-Implementation Success 218
5.2.2.1 ERP Top Management Support Has Positive Effect on ERP Post-Implementation Success 218
5.2.2.2 ERP Alignment with Organization Process Has Positive Effect on ERP Post-Implementation Success 220
5.2.2.3 ERP Planning Has Positive Effect on ERP Post-Implementation Success 222
5.2.2.4 ERP Organizational Culture Has Positive Effect on ERP Post-Implementation Success 224
5.2.2.5 ERP Training Has Positive Effect on ERP Post-Implementation Success 225
5.2.2.6 ERP Learning Has Positive Effect on ERP Post-Implementation Success 226
5.2.2.7 ERP User Support Has Positive Effect on ERP Post-Implementation Success 228
5.2.3 Relationship between Environmental Factors of ERP Critical Success Factors and ERP Post-Implementation Success 230
5.2.3.1 ERP External Pressure Has Positive Effect on ERP Post-Implementation Success 230
5.2.3.2 ERP External Consultant Support Has Positive Effect on ERP Post-Implementation Success 231
5.2.3.3 ERP External Trust Has Positive Effect on ERP Post-Implementation Success 233
5.2.4 The Relationship Between the Extended TOE Model of ERP Critical Success Factors and Post-Implementation Success 234
5.3 Research Contributions 237
5.3.1 Theoretical Contributions 238
5.3.2 Practical Contributions and Managerial Implications 241
5.4 Suggestions for Future Research 243

5.5 Limitation of the Study 244
5.6 Conclusion 244

REFERENCES **246**

Appendices A – D 277–304

LIST OF TABLES

TABLE NO.	TITLE	PAGE
2.1	Evolution of ERP	26
2.2	Definition of ERP	28
2.3	Comparison of ERP Implementation Life Cycle	32
2.4	ERP Post-Implementation Issue	36
2.5	ERP Benefits in Post-Implementation Phase	41
2.6	Previous Studies on ERP CSFs Based on Different Phases	44
2.7	CSFs in Pre-Implementation Phase	45
2.8	CSFs in Implementation Phase	46
2.9	CSFs in Post-Implementation Phase	54
2.10	Discussion about Limitation of Previous Research Models and Present New Gap	70
2.11	Categorizing CSFs by TOE Factors	72
3.1	Research Design	103
3.2	Research Operational Framework	104
3.3	Respondent Previous Studies	110
3.4	Sample Frame Based on the Industry Type and Company Size	113
3.5	The Numbers of Response Rates based on Sectors	115
3.6	Components of Research Instrument	117
3.7	Profile of Experts in Content Validity	120
3.8	Pilot Sample Size	121
3.9	Comparing PLS-SEM to Covariance Approaches of SEM	129

3.10	Criterion of Assessment of the Measurement Model	132
3.11	Criterion of Assessment of the Structural Model	134
4.1	Data Analysis Techniques and Purposes	138
4.2	Reliability of Constructs in Pilot Test	141
4.3	Measurement of Sampling Adequacy and Total Variance	143
4.4	Initial Assumptions of EFA	145
4.5	Eigenvalues and Variance Extracted by Each Component	146
4.6	Factor Structure Matrix of Loading Variable	146
4.7	Questionnaire Response Rate	149
4.8	Normality Test for Main Research Constructs	153
4.9	Leven's Test of Homogeneity of Variances	154
4.10	Regression for Observing VIF and Tolerance Effect	155
4.11	Mann-Whitney-U-Test Observing Non-Response Biasness	157
4.12	Common Method Bias (Total Variance Explained)	158
4.13	Profile of Respondents	159
4.14	Profile of Companies	160
4.15	Descriptive Statistics on Underling Main Research Variables (N=290)	161
4.16	Descriptive Statistics for Research Items (N=290)	162
4.17	Reliability and Validity of the Survey Questionnaire	167
4.18	Results of Measurement Model (Loading Factors)	168
4.19	The Result of Reliability and Convergent Validity by AVE and Coefficient CR	173
4.20	Cross-Loadings (Main Constructs)	175
4.21	Square Root AVE and Correlations of Latent Variables	178
4.22	Result of the Coefficient Determination $R2$ and $Q2$ Value	180
4.23	Result of the $f^2$and q^2 value	181
4.24	Path Coefficient, T-Value and Significance	182

4.25	The Results of Relationship between EA and EPIS	184
4.26	The Results of Relationship between EX and EPIS	185
4.27	The Results of Relationship between EDA and EPIS	186
4.28	The Results of Relationship between EPM and EPIS	187
4.29	The Results of Relationship between ECON and EPIS	188
4.30	The Results of Relationship between EIT and EPIS	189
4.31	The Results of Relationship between ECOM and EPIS	190
4.32	The Results of Relationship between ETMS and EPIS	191
4.33	The Results of Relationship between EAL and EPIS	192
4.34	The Results of Relationship between EPL and EPIS	192
4.35	The Results of Relationship between OCR and EPIS	193
4.36	The Results of Relationship between ETR and EPIS	194
4.37	The Results of Relationship between ELR and EPIS	195
4.38	The Results of Relationship between EUS and EPIS	196
4.39	The Results of Relationship between EEP and EPIS	197
4.40	The Results of Relationship between EECS and EPIS	198
4.41	The Results of Relationship between EET and EPIS	199
4.42	Results of Main Hypotheses Testing	200
5.1	Summary of Research Hypotheses and Findings	205

LIST OF FIGURES

FIGURE NO.	TITLE	PAGE
2.1	Map of Literature Review	23
2.2	ERP Phases Adopted From (Cooper and Zmud , 1990)	30
2.3	Model Developed by Kouki *et al.* (2007, 2010)	50
2.4	The Model Presented by Madapusi (2008)	51
2.5	Zhu *et al.* (2010) Research Model	52
2.6	Nejib (2013) Proposed Research Model	53
2.7	List of CSFs on Post-Implementation Phase	56
2.8	The Comparison of Proposed Conceptual Framework with Previous Frameworks	75
2.9	Proposed Conceptual Framework	77
3.1	Overview of Research Methodology	102
3.2	A Two-step Process of PLS Path Model Assessment. Source: Henssler *et al.* (2009)	130
3.3	The Flowchart of the Research Process Adopted from Offermann *et al*. (2008)	135
4.1	Preliminary Conceptual Framework	140
4.2	PLS Model with Items Loadings for Each Construct Before Deleting Low Factor Loading	171
4.3	PLS Model with Items Loadings for Each Construct After Deleting Low Factor Loading	172
4.4	Paths Coefficient and t-value of Relationship between EA and EPIS	184
4.5	Paths Coefficient and t-value of Relationship between EX and EPIS	185

4.6	Paths Coefficient and t-value of Relationship between EDA and EPIS	186
4.7	Paths Coefficient and t-value of Relationship between EPM and EPIS	187
4.8	Paths Coefficient and t-value of Relationship between ECON and EPIS	188
4.9	Paths Coefficient and t-value of Relationship between EIT and EPIS	189
4.10	Paths Coefficient and t-value of Relationship between ECOM and EPIS	190
4.11	Paths Coefficient and t-value of Relationship between ETMS and EPIS	191
4.12	Paths Coefficient and t-value of Relationship between EAL and EPIS	192
4.13	Paths Coefficient and t-value of Relationship between EPL and EPIS	193
4.14	Paths Coefficientand t-value of Relationship between OCR and EPIS	194
4.15	Paths Coefficient and t-value of Relationship between ETR and EPIS	194
4.16	Paths Coefficient and t-value of Relationship between ELR and EPIS	195
4.17	Paths Coefficient and t-value of Relationship between EUS and EPIS	196
4.18	Paths Coefficient and t-value of Relationship between EEP and EPIS	197
4.19	Paths Coefficient and t-value of Relationship between EECS and EPIS	198
4.20	Paths Coefficient and t-value of Relationship between EET and EPIS	199
4.21	Revised Conceptual Framework	201

LIST OF ABBREVIATIONS

SCM	-	Supply Chain Management
ERP	-	Enterprise Resource Planning
TQM	-	Total Quality Management
CRM	-	Customer Relationship Management
IMC	-	Inventory Management and Control
MRP	-	Materials Requirements Planning
MRPII	-	Manufacturing Requirement Planning
TOE	-	Technological- Organizational- Environmental Theory
IT	-	Information Technology
CSF	-	Critical Success Factor
BPR	-	Business Process Reengineering
SEM	-	Structural Equation Modeling
PLS	-	Partial Least Squares
PIS	-	Post-Implementation Success
RBV	-	Resource Based View
RDT	-	Resource Dependency Theory
MNAR	-	Missing Not at Random or not-ignorable
VIF	-	Variance Inflation Factors
EM	-	Expectation Maximization
MAR	-	Missing At Random
AVE	-	Average Variance Extracted
CR	-	Construct Reliability
MVA	-	Missing Value Analysis
MCAR	-	Missing Completely at Random
CFA	-	Confirmatory Factor Analysis

LIST OF APPENDICES

APPENDIX	TITLE	PAGE
A	Research Questionnaire (English Version)	277
B	Research Questionnaire (Persian Version)	284
C	Statistical Analysis (SPSS)	291
D	Statistical Analysis (PLS)	304

CHAPTER 1

INTRODUCTION

1.1 Introduction

In this chapter, the topic of research is presented. After introduction, chapter starts with background of the study and enterprise resource planning (ERP) in automotive industry of Iran. Then, the chapter is followed by the statement of problems through which observation of the gaps in knowledge is discussed based on the previous studies conducted in this area. Next, research questions, research objectives, significance of the study and scope of the study are presented. The chapter ends with operational definitions of the research terms. The theoretical framework and the review of relevant literatures along with justifications for different hypothesis is discussed in the following chapter.

1.2 Background of The Study

Enterprise resource planning (ERP) is considered as a commercial software enabling the firms to unify their business processes (Van-Hau and Kuzic, 2010; Grabski *et al.,* 2011). However, implementation of ERP is complicated because it is dependent on several factors. It needs a large amount of money to invest (Livermore and Rippa, 2011); high-level expertise to enhance output (Wenrich and Ahmad, 2009); allocated to promoting output of the organization (Beatty and Williams, 2006); and a 6 to 12 month period to implement (Aloini *et al.,* 2007). In fact, in order to implement ERP effectively, millions of dollars should be allocated to develop this system, and it takes several years to assimilate it into a firm by providing its necessary infrastructures and capabilities (Tarhini *et al.,* 2015; Orozco *et al.,* 2015;

Abbasi *et al.*, 2015). Therefore, ERP is considered as a multifaceted concept that is implemented in different phases, and each phase has its own challenges (Kronbichler *et al*., 2009). A research by Zhang *et al*. (2005) advocated that ERP projects were on average, 178 percent over budget, took 2.5 times as long as projected time, and delivered only 30 percent of promised benefits. Wang and Chen (2006) demonstrated in their study, whereby more than 90 percent of ERP implementations delayed, and required additional budget amounts. In the study by Panorama (ERP Consultation Company) in (2015), during the 5 years of evaluation, it cost 6.1 million dollars and 15.7 months in average. Across this step, approximately 42 percent of projects have implemented ERP by the planned budgets, near 35 percent of projects have implemented ERP on their planned time and finally in post-implementation stage, 47 percent of organizations just cached more than 50 percent of predetermined benefits of their ERP.

Although there are reports referring to the firms' success in implementing their ERP systems, it is generally accepted that between 50 to 70 percent of ERP implementations have not been capable of obtaining their predicted objectives (Umble *et al*., 2003; Shao *et al.,* 2012; Panorama ERP reports, 2015). Yet, it has been observed that providing the technical infrastructures has not led the ERP implementation programs to optimally take advantage of ERP deployments, which is stated also to originate from organizational and environmental factors. Two key factors are found to be attributed to unsuccessful ERP implementation leading to not achieving the expected objectives. First key factor refer firms incapability to manage the required organizational changes based on critical success factors (CSFs), and second refer to lack of technical capabilities required for ERP implementation (Satyan, 2003; Nah *et al*., 2003; Al-Mashari *et al*., 2003; Umble *et al*., 2003; Somers and Nelson, 2004; Kouki *et al.*, 2010; Zhu *et al*., 2010).

Referring to life cycle theory (LCT), ERP implementation is usually categorized into three phases: pre-implementation, implementation and post-implementation (Somers and nelson, 2001; Swanson and Ramiller, 2004; Kronbichler *et al*., 2009; Wu and Chuang, 2010). Promoting the ERP success has been an interesting research issue, which has led to identifying the importance of CSFs for ERP implementation and pre-implementation phase in the past decades

(Nah *et al*., 2001; Nah *et al*., 2003; Al-Mashari *et al*., 2003; Umble *et al*., 2003; Somers and Nelson, 2004). There are many challenges for organizations during the ERP projects implementation. This highlights considering the CSFs in each phase for successful implementation of ERP (Panorama ERP reports, 2015). In the ERP literature, a success factor is defined as a factor that presence increases the probability of a successful implementation (Sherer and Alter, 2004). Often ERP project managers focus on technical issues, while the non-technical issues are ignored. The ERP project managers only supervise if the project is accomplished according to the scheduled time and budget. In fact, the majorities of researches evaluate ERP success by identifying whether the ERP is implemented on scheduled time/budget, while undermining the fact that the final aim of applying ERP is to make business value and improve business performance. Thus, a new venue of research on ERP has emerged addressing the ERP post-implementation. It is believed that this new stream of research on ERP is in its infinity and needs for more research and exploration to be conducted in this area (Zhang *et al.*, 2005; Tsai *et al*., 2005; Liang *et al.*, 2007; Kouki *et al.*, 2010; Liu *et al.*, 2010; *Zhu et al*., 2010; Panorama ERP reports, 2015).

Implementation of ERP cost between 1.3 to 70 million dollars for companies (Vilpola, 2008), and the average implementation time is 6 months to 2 years (Aloini *et al.*, 2007). Therefore, it is important for managers to focus on the post-implementation phase, because when ERP implemented, these systems usually are not effortlessly replaced. Indeed, in the post-implementation phase, ERP systems are updated, maintained and assimilated in new business processes that leading to efficiencies (McGinnis and Huang, 2007). The common problem is that organizations that only complete the implementation phase will not gain the full benefits from the ERP (Willis and Willis-Brown, 2002). Hence, the post-implementation phase is critical to the lifelong success of the ERP (Law *et al*.,2010; Charmain, 2012; Panorama ERP reports, 2015). Technical, organizational elements along with the environmental factors affect the performance of ERP implementation. Therefore, not taking into consideration the technical as well as the organizational elements can result in weak implementation performance (Capaldo and Rippa, 2009). In other words, if the technical and organizational issues are not considered and discovered before the implementation, they could generate problems during the

implementation, thereby increasing the probability for failure in the post-implementation phase (Charmain, 2012). In other study, Madapusi (2008), report that a single and special attention on technical factors would only lead to technical successful implementations of ERP, which lonely would not create business advantage. In other words, organizational factors i.e., top management, planning and organizational culture, are concerned to organizational issues and environmental issues have approximately nothing to do with technical and organizational outcome. Aforementioned discussion emphasizes that successful ERP deployments is not likely to happen without simultaneous consideration of organizational, environmental, and technological issues together.

Tornatzky and Fleisher (1990) presented that the successful deployment of ERP is related to the external, organizational, and technological factors. ERP literature (e.g. Musaji, 2005; Kamhawi, 2008; Kouki *et al.,* 2010) has also emphasized the significance of contingency factors in ERP post-implementation and benefit realization. Tornatzky and Feleischer's (1990) recommend three aspects of the firm's context those have enterprise wide influence on implementation and post-implementation process. The three groups of contextual factors named technological, organizational and environmental, are also marked as (TOE). The TOE has been used in several studies to examine the pre-implementation and implementation of several enterprise wide applications (Zhu *et al.,* 2004) such as total quality management (TQM), supply chain management (SCM) and ERP (Bradford and Florin, 2003). The relevance of contingency factors including organizational, technological, and external factors for ERP implementation and post-implementation and benefits realization have been stressed by some researchers (Kouki *et al.,* 2010; Zhu *et al.,* 2010; Schniederjans and Yadav, 2013). This study, therefore, focus on a comprehensive set of technological, organizational and environmental determinant factors that have critical importance for ERP post-implementation success. In addition, this research tries to clarify the concepts around the critical success factors that are affecting the ERP projects on ERP post-implementation phase, and theoretically and practically developed based on TOE framework. Finally, current study tries to demonstrate the relationship between new critical success factors of this study and ERP benefits. Therefore, it contributes to an improved process of ERP benefits, where critical factors bridge the link between ERP post-implementation and

improvement in ERP benefits. The next section explain about automotive industry and ERP in Iran, and link between both related to the scope of the study.

1.3 ERP in Automotive Industry of Iran

Iranian companies look like other companies in the world, where they are acquainted with ERP and implementing it. Some Iranian software companies have started to produce ERP over the last 10 years and some others have started to join with foreign vendors as a partnership or licensing agreements. There are many international ERP vendors active in Iranian markets such as SAP, Oracle, SAGE, IFS and Epicor-Escala and many more (Nikookar *et al.*, 2010). Due to sanction against Iran, Iranian companies are not allowed to directly buy the license from some original producers. However, some of international vendors have their exclusive distributor in Iran (Nikookar *et al.*, 2010). There are also many Iranian ERP producers in Iran with many customers all over the nation. Namely, like Sabz Dadeh Afzar (Green dataware), Madaar Gostaresh, Raay Dana, Douran and Pars Royal System (Members of Iran ERP Association, 2010). ERP vendors are getting more experienced in implementation during recent years through exploiting best practices through frequent implementation in industries. Although Iranian ERP producers are not as experienced as foreign producers, most of Iranian organizations buy ERP from foreign producers, as local ERP vendors were not very successful in recent years (Moohebat *et al.*, 2011). Furthermore, the cost of Iranian ERP systems is much lower than others imported ERP adopted from other countries, but failure percentage is almost the same and it is considered a crucial issue.

There are several factors highlighting the necessity of doing research on ERP in Iranian context. Iran is recognized by the United Nations as one of the powerful nations in Asia region (Yeganeh and Su, 2008). It is generally believed that effect of context may vary from country to country (Chien *et al.*, 2007; Dezhdar and Ainin, 2011). In addition, due to increasing sanction against Iran, there is a fear among Iranian organizations that if they buy ERP from foreign companies, there is a high probability that they might leave the project uncompleted as it happened in some cases. In addition, most of Iranian firms are small, medium sized, and they are not

strong enough to afford huge costs of foreign ERPs. According to Moohebat *et al.* (2011), technology is not sufficient to solve the problems of the companies if the company does not acquire the knowledge, which is required to implement the technology. He mentioned this issue as what is happening in Iran in recent years where they misuse the technology without acquiring knowledge needed to use the technology. ERP is a new concept in Iran, although as a managerial tool, it is essential for Iranian firms to implement this to avoid from low performance and productivity.

Automotive industry is considered the second most active industry in Iran after the oil and gas industry, accounting for 10% of country's gross domestic product (GDP) and 4% of the workforce (700,000 persons) (Washington Post, 2013). According to statistical centre of Iran (SCI) (www.sci.org.ir), Iran has turned into the biggest car manufacturer in the region with a contribution of 46% to the total numbers of cars produced in the region. Likewise, according to international organization of motor vehicle manufactures (OICA), which is "the voice speaking on automotive issues in world forums". Iran is the 18th largest automaker in the world and one of the largest in Asia with annual production of more than 1.6 million units (OICA, 2013). In 2009, Iran's automotive industry has grown increasingly with an increase of 44.5% in output since 1998 (Fars News Agency, 2010). However, referring to OICA statistics, production declined significantly to 750,000 automobiles in 2013 due to heavy economical sanction by US and other Western countries on automobile industry of Iran (OICA, 2013).

Numerous novel automotive industrial corporations have been built, and there have been several facilitative regulations regarding the Iranian administration's protective strategies. In 2001-2002, Iranian automakers employed 16.8 workers per car produced. In 2007-2008, this rare dropped by 7.17 workers for each car produced. Iran's fleet reached 11.5 million cars by 2010 and 14 million cars by 2014 (Iran Ranks, 2010; Iran Daily, 2014). Due to sanctions imposed on spare parts by France's Peugeot and Renault, car manufacturing in Iran declined by 40 percent in 2012. However, it started to recover in 2014 by Geneva provisional agreement (Washington Post, 2014). Iranian car manufacturers produced 1,090,846 cars and commercial vehicles in 2014 with cars making up 925,975 of produced products and

other vehicles making 164,871of the total number of products. According to OICA, an auto production rising of 3 percent is predicted causing the total production reach to just about 91 million vehicles in 2015 (Press TV, 2015). The development of car manufacturing can be explained by increase in demand in the marketplace, which derives from increase in population and specificaly emergence of the youth population and the growth in attendance of female participation in the market etc. (Atiehbahar, 2008).

There are currently 13 public and privately owned automakers in Iran, which many have subsidiary companies producing various types of vehicles; there are 28 automotive manufacturing units throughout Iran. Iran Khodro and Saipa are the largest domestic vehicle manufacturing companies. The Iranian manufacturers currently produce six different types of vehicle, including passenger cars, 4WD, trucks, buses, minibuses, and pickup trucks. According to the latest statistics in 2014 provided by the ministry of industries and mines, there are exactly 9,965,734 vehicles in the country (SAPCO, 2008; Iran Daily, 2014). Iran Khodro and Saipa have the biggest market share governing 96% of the total marketplace in Iran. The other car manufacturers are not specified as belonging to a particular manufacturing group such as the Bahman Group, Kerman Motors, Kish Khodro, Runiran, Traktorsazi, Shahab Khodro, etc. together produce only 4% (SAPCO, 2008; Iran Daily, 2014). Iran is also a large producer of automotive spare parts. The Iranian automotive parts industry consists of approximately 1200 companies, which include those affiliated to vehicle manufacturers as well as independent firms. The industry consists of two primary sectors, original equipment manufacturing (OEM) suppliers, which produce parts for automakers, and after-market parts manufacturers (AMPM), which produce replacement parts for vehicles (Atiehbahar, 2011). Therefore, based on international organization for standardization (ISO), suppliers for Iranian automotive industry consist of 850 small, medium and large that have certified by ISO/TS16949 quality management system (http://www.iso.org/iso/home.html).

The automotive industry sector has warmly embraced the use of the new information and communication technologies i.e., ERP for their back-office relationships with their suppliers and front-office activities with their customers. These new technologies are now developing rapidly and contribute to reducing costs,

cycle time and improving data quality, productivity resource allocation and performance. The SAP Company, one of the biggest integrated systems providers, is in cooperation with Iran Khodro to deploy ERP since 2005 (Hatamirad and Mehrjerdi, 2010) as far as Saipa using Indian version of ERP since 2008. The goal of deploying ERP programs is to reengineering of production and supply chain processes, standardize and integrity of database and application in order to improve competitive advantage.

1.4 Problems Statement

Reviewing the literature found that although many firms have attempted to implement ERP, they have not been capable of achieving the expected outcome from ERP deployment (Panorama ERP reports, 2015). This gap is related to the fact that both practical and empirical studies have only addressed the pre-implementation and implementation phases while undermining the importance of the post-implementation phase in ERP deployment (Grabski *et al.*, 2011). In fact, there are only a few studies paying attention to post-implementation phase and its influence within the firms (Law *et al.*, 2010; Charmaine, 2012). As found from comprehensive review of the literature, although studies on ERP are many, but the post-implementation issues to examine CSFs impacts across various ERP benefits have not received sufficient attention. More specifically, what is lacking is a solid and exhaustive theoretical framework for identifying CSFs, with which the post-implementation success of ERP can be enhanced.

Previous studies presented that once an ERP system is implemented, it is not implied as successful deployment of ERP system. This is due to the fact that the post-implementation phase has its own attributes and challenges, which have to be taken into account for an ERP system integration to be considered successful (Al-Mashari *et al.*, 2003). For instance, success of implementation phase is computed based on the fact that whether ERP is implemented on the planed period and budget (Yusuf *et al.*, 2004), while the success of post-implementation is measured based on factors such as rate of return to investment and achieving higher performance in firm (Sedera and Gable, 2004; Ifinedo, 2007). In fact, in the post-implementation phase,

firms primarily emphasize on benefit realization derived from the deployment of ERP (Al-Mashari *et al.*, 2003; Zhu *et al.*, 2010).

TAM (technology acceptance model), LCT (life cycle theory) and TOE (technological, organizathinal and environmental) models and other models are used by researchers to measure the technology acceptance in post-implementation phase of ERP in order to improve performance. ERP benefits are dependson the perceive usefulness and ease of use to measure the intention to use the technology. In addition, ERPs' popularities in Iran, especially in recent years, and lack of literature about it, triggered the researcher to conduct this study among Iranian automotive industry. ERP is a new concept in Iran, although as a managerial tool, it is essential for Iranian firms to implement this to avoid from low performance and productivity. The cost of Iranian ERP systems is much lower than other countries', but failure percentage is almost the same and it is considered acrucial issue.

Thus, the contribution of post-implementation phase of the ERP deployment is investigated in this study. In order to achieve this purpose, this study also addressees the interrelationship among the organization and its attributed parts as it is believed that developing dynamic reactions with the environment, customers and suppliers as the contingency factors related to implementation of ERP is necessary when examining the efficiencies and effectiveness of ERP systems (Paradice, 2010; Charmain, 2012). Thus, this study investigates the technological, organizational and environmental elements contributing to success of ERP in post-implementation phase, which are likely to ensure achieving the predicted benefits from ERP deployment.

In order to achieve this purpose, the technological, organizational, and environmental (TOE) theory is adopted as the theoretical base of this study, which has been applied in previous studies on investigating the pre-implementation and implementation of ERP systems (e.g. Zhu *et al.*, 2004; Schniederjans and Yadav, 2013). In fact, researchers (Kouki *et al.*, 2007, 2010; Schniederjans and Yadav, 2013) have emphasized the appropriateness of considering contingency factors for ERP implementation and post-implementation to benefit realization. The width and depth of the integration indicates that the post-implementation success of the ERP will affected by multiple factors related to the organization. Regarding the

importance of width and depth of integration in accomplishment of the post-implementation phase, the TOE theory can prepare the theoretical base to determine the potential factors, which are likely to influence the post-implementation success. Therefore, through a comprehensive review of literature, the CSFs in the post-implementation phase are identified and classified into the three main groups called: technological factors, organizational factors, and environmental factors. Thus, this study attempts to fill the gap in theory with regard to post-implementation phase, as the effect from most of the contingency relationships have not been empirically investigated so far.

ERP technological factors refer as the attributes, capabilities, forces and resources that contribute to the ERP success on post-implementation phase, which based on previous literature is documented to four distinct dimensions: ERP attributes, ERP internal expertise, project management and system configuration. The importance of technological factors theoretically validated by researchers (e.g. Kouki *et al.,* 2007, 2010; Zhu *et al.,* 2010). However, shortage of accurate data (Madapusi, 2008; Shaul and Tauber, 2013); intensive implementation team (Madapusi, 2008; Schniederjans and Yadav; 2013; Shaul and Tauber, 2013); and open and honest communication (Madapusi, 2008; Dezdar and Ainin, 2011b) still not well documented.

ERP data accuracy is implied as the proper integration of the inbound information to the ERP system and outbound information coming from ERP (White, 2008; Madapusi and Ortiz, 2014). Because of existence of such integration in an ERP life cycle, an inappropriate information in one phase ruins the effectiveness of other phases leading to reduced operator motivation or unwillingness to apply the ERP on a daily basis. Therefore, accurate data integration could have positive effect on success of ERP especially on the operational (customer service improvement, productivity and data quality improvement, cost and cycle time reduction) and managerial (better decision making, and resource management and improve performance) benefits.

Implementation team refers to authorized individuals who present sufficient business and technical skills in ERP post-implementation success (Zhu *et al.*, 2010; Madapusi and Ortiz, 2014). The features of implementation team makes a significant

contribution to guaranteeing the success of applying an ERP system in the phase of post-implementation. Implementation team members' mostly concentration on confirming accuracy of data entering to the ERP process results in improving the data quality. Automotive companies might have deployed their best functional implementation team and IT resources to emphasize on production developments and cost buildings, which has led to reduction in inventories and decline in cost and cycle time and ultimate result of increase in productivity and data quality.

ERP communication is referred as continuous and two-way communications across the firm. Communication through the firm among all levels of the organization throughout all phases of the ERP life cycle is vital to assuring implementation success of ERP (White, 2008). The lack or poor of an open communication information policy however, could potentially lead to problematic implementations as they may result in delayed to achieve benefits of implementing ERP especially managerial and operational benefits.

Moreover, the implementation of an ERP system is usually a large project, consuming a huge amount of resources during the ERP initiative. These resources, however, are usually distributed in multiple departments and viewed by each department as its own properties. The importance of technological factors have been theoretically validated by researchers (e.g. Kouki *et al.,* 2007, 2010; Zhu *et al.,* 2010), Therefore, this study intend to develop comprehensive technological determinant factors with detailed aspects for ERP post-implementation success. Thus, the first research question in this study is: What are the technological determinant of critical success factors for ERP post-implementation success?

ERP organizational factors deal with identifying if a firm has taken the required measures to exploit effectively from an ERP deployment. This arrangement is carried out by creating an appropriate condition for ERP application, in which necessary resources for the system's operation are provided. Proper arrangement enables the efficient functioning of ERP through maximizing the benefits coming from ERP deployment. According to previous organizational factors documented on post-implementation CSFs, four dimensions include top management support, learning, ERP alignment and ERP user support reviewed and collected. High organizational readiness helps achieve synergy between the organization and the

ERP (Amrani *et al.*, 2006). Thus, the capabilities of the ERP can fully be realized at the post-implementation phase to generate benefits. However, what is done in arena of organizational factors is still weak and developing a comprehensive organizational factors with approach to cultural issue (Shao *et al.*, 2012; Tarhini *et al.*, 2015), ERP planning (Madapusi, 2008, Shaul and Tauber, 2013) and enough training (Madapusi, 2008; Dezdar and Ainin, 2011b) is still needed.

Organizational culture refer to the cultural and organizational readiness to adopt ERP solutions (Hofstede *et al.*, 1990). Sarkis and Sundarraj (2003), introduce the key CSFs including organizational culture changes to give early benefits like inventory reductions followed by managerial benefits over the long-term. The organizational culture interacts with the human and organization, and might be expected to improve operational and managerial benefits. ERP planning deals with considering solutions for firm's changing cross-functional requirements, which is likely to result in success of ERP (Stratman and Roth, 2002). Planning can prepare real-time information quality, standardization of processes in order to reduce cycle time, rationalization of work force to better allocation of resources, integration to improve productivity, clear working to reduce cost, and faster decision making. ERP training refers to the documented and up-to-date program to train employee of the firm to use the ERP effectively (Stratman and Roth, 2002). ERP post-implementation fail due to lack of sufficient and proper training of end users. Hence, training for all activities through ERP programs and complex tasks results in accurate information output, and cycle impact profitability. Consequently might result in to realization of the ERP's full potential operational and managerial benefits such as data quality improvement, cost and cycle time reduction and improve productivity (Mabert *et al.*, 2003; Kouki *et al.*, 2010). Therefore, the second research question of this study is: What are the determinant of organizational critical success factors for ERP post-implementation success?

ERP environmental factors refer to all factors that affected the ERP successful implementation externally. These external organizations can improve the implemented ERP and the main organization's knowledge about it (Kouki *et al.*, 2007; 2010). Thus, they contribute to the focal organization's effective usage of the system, which in turn generates benefits. Using this framework in conjunction with

the life cycle theory could help to the body of knowledge to find the combination of variables that would be excellent predictors of ERP post-implementation. Its supplier and its connecting customers present ERP as an integrated system that integrates with focal organization. The interrelationship among the organization and its environment, customers, suppliers parts is necessary for businesses to develop competitive advantages (Charmaine, 2012) that without the interrelationship, companies may experience large cost overruns (Baraldi, 2009, Charmaine, 2012) and delays in which could affect the coordination, control, and further enhancements of the ERP (Charmaine, 2012). Identify CSF measures that take into account those factors that are critical to suppliers and customers as the firm's ERP environment is extended across the supply chain (Madapusi, 2008; Baxter and Sommerville 2011). Therefore, factors consist of ERP external consultants support and external pressures (competitors and governance rules etc.) extracted from literature of ERP and new factor of external trust (Abdullah 2009; Schniederjans and Yadav; 2013) (customer's and supplier's trust) added as new environmental determinant from supply chain management (SCM). Therefore, evaluating and testing the relationship of aforementioned environmental CSFs on ERP post-implementation benefits should be more highlighted. Thus, the third research question is: What are the determinant of environmental critical success factors for ERP post-implementation success?

The complex interactions among the technology, environment, and organization are integral to extending the life and business benefits of the system. The main challenge is that regardless of the large financial and time commitment, few businesses are using ERP efficiently (Dawson and Owens, 2008; Panorama ERP reports, 2015), even though evidence indicates that successful deployment of ERP is beneficial to organizations (Kwahk and Ahn, 2010). However, "sustaining those benefits is challenging for most organizations" (Jain, 2008, p. 55) in the post-implementation phase (Charmain, 2012). Therefore, a holistic view of the interrelationships existing between organization, the technology, and the environment is necessary when considering the efficiencies and effectiveness of these systems (Bertalanffy, 1972; Paradice, 2010; Charmain, 2012). Past literature has criticized a long list of critical success factors (CSFs) on ERP post-implementation phase but their relationships with post-implementation success in order to gain benefits is not well documented in the literature. In other words, very

limited empirical attention is done to make specifically dimensional relationships between determinant critical factors CSFs and ERP in post-implementation success. More specifically, the issue to determine dimensional critical factors for ERP post-implementation phase by exploring technological advantage, organizational support, and environmental intensity has not received sufficient attention. Therefore, this study finally propose the comprehensive technological, organizational and environmental (TOE) model by various ERP critical success factors (CSFs) for the ERP post-implementation success.

1.5 Research Questions

This study addresses the following main research questions:

1- What are the determinant factors of ERP technological factors for ERP post-implementation success?
2- What are the determinant factors of organizational factors for ERP post-implementation success?
3- What are the determinant environmental factors for ERP post-implementation success?
4- What are the extended TOE model by various ERP determinant critical success factors (CSFs) for the ERP post-implementation success?

1.6 Research Objectives

A primary objective of this research is to investigate the determinant critical success factor (CSFs) that could assure success in post-implementation phase of the ERP in term of gain expected benefits. Secondly, this study aim to develop and empirically test a model explaining the impact of ERP critical success factor (CSFs) on the ERP post-implementation success based on TOE model. This study has four main objectives:

1- To determine the determinant factors of ERP technological factors for ERP post-implementation success.
2- To examine the determinant factors of organizational factors for ERP post-implementation success.
3- To find out the determinant environmental factors for ERP post-implementation success.
4- To examine the determinant factors of extended TOE model by various ERP critical success factors (CSFs) for the ERP post-implementation success.

1.7 Significance of The Study

This study holds significant contribution for ERP research. Although previous studies on ERP have proposed several critical factors that, affect the post-implementation success of ERP, but these studies were conducted in a disconnected mode. Only a small number of studies have addressed the identification of CSFs and their relevance along the ERP life cycle, and few studies have systematically and quantitatively investigated the post-implementation issues (King and Burgess, 2006; Federici, 2009; Kouki *et al.*, 2010). For this purpose, current study in line with TOE theory and by considering comprehensive antecedents of post-implementation success of ERP attempted to provide a new scholarly way on effective implementation and maintaining of ERP in automotive industry of Iran.

Previous research primarily applied the TOE theory to explain the pre-implementation and implementation phases of the ERP, while the post-implementation phase of ERP has been neglected (Grabski *et al.*, 2011). This study goes further along the post-implementation process of the ERP by defining ERP technological factors, organizational factors, and environmental factors for post-implementation success of ERP in the context of Iran and automotive suppliers. ERP technological factors are referred to the capabilities, forces, attributes and resources that contribute to the ERP success on post-implementation phase, ERP organizational factors relay on the issues that whether an organization has made the necessary arrangements for the continuous and effective deployment of ERP and ERP

environmental factors refer to all factors that affected the ERP successful implementation externally.

More importantly, this study highlights the important roles of technological antecedents of ERP post-implementation success. Therefore, this study introduced some new technological variables (e.g. ERP data accuracy, qualification of implementation team, and ERP communication) to shed new light to the body of knowledge about the role of technological factors in the effective implementation and maintaining of ERP in automotive industry. Moreover, in the study, some new organizational factors i.e., ERP planning, ERP organizational culture, and ERP training were introduced as the (CSFs) of post-implementation success. Therefore, along with TOE theory, these contributions have provided some academic evidence toward the role of organizational factors on ERP post-implementation success.

Scholars have not sufficiently addressed the role of environmental factors on ERP post-implementation success. This current study also adds new elements i.e. external trust (customers and suppliers' trust) to the existing ERP post-implementation (CSFs) namely external pressure and ERP external consultant support. This contribution has provided more detailed information on benefits of the environment factors for ERP in Iran's automotive industry. In addition, too few existing studies theoretically, comprehensively and concurrently examined the effect of different antecedents of ERP post-implementation such as (CSFs) on ERP post-implementation success. To have a better understanding on the success of ERP alternative after implementing, it is rational to consider all the antecedent factors for the success of the ERP solutions concurrently. The contribution of this study shed a new light to the body of knowledge about reasons of the success and the failure of the ERP solutions.

Hence, this study claims that ERP data accuracy, ERP implementation team, communication, ERP planning, ERP organizational culture, training, and external trust (customer and supplier trust) in line with life cycle theory and TOE theory influence the post-implementation phase of the ERP. This study also empirically tests this research model in the automotive industry of Iran.

1.8 Scope of The Study

The study examines the relationship between critical success factors (CSFs) contributing to success of ERP in post-implementation phase. This quantitative empirical study discovers the condition of ERP implementation in the Iranian automotive industry. Based on International Organization for Standardization (ISO), suppliers for Iranian automotive consist of 850 small, medium and large companies that have certified by ISO/TS16949 quality management system (http://www.iso.org/iso/home.html). Therefore, the target populations selected for this research are suppliers of auto parts manufacturers in the three main groups of namely, metal, electronic and polymer over Iran. The segmentation done based on criteria of two leading car manufacturers in Iran. According to statistics, 850 suppliers are available in automotive industry, which directly involved with ERP. Based on the requirements of automotive industries, all the suppliers that have at least minimum modules of ERP certified to the standard.

This population is selected for the following reasons: Firstly, the auto industry is one of the leading industries in the world. The economic and social importance of the industry explains the need for conducting research on improved ways of organizing and managing the diverse processes involved in the production of motor vehicles. Besides, successful implementation of ERP establishes a connection between processes in a firm including inbound and outbound logistics, manufacturing, human resources, financial systems, and distribution with external suppliers and customers, which leads to emergence of an integrated system.

Today, most of original equipment manufacturers have widely inaugurated the ERP in their companies. Thus, due to the widespread and prolonged use of these systems in this industry, it could be an appropriate population for the study. In addition, the companies have extensively implemented this system in their supply network as they have necessitated using these systems for their suppliers as well. Secondly, Iran is the 18th largest automaker in the world and one of the largest in Asia, with annual production of more than 1.6 million and in 2009 Iran ranked fifth in car production growth standing next to China, Taiwan, Romania and India. Thirdly, 96% of the total domestic production is covered by Iran Khodro and Saipa (Sheikholeslami, 2010), and can be a good representative of Iran

automotive industry by producing more than a million cars in a year. According to the above reasoning, conducting study on the post-implementation success of ERP in the Iranian automotive industry can make significant contribution to finding a deep understanding about ERP deployment. The data for the study were obtained from three types of companies in the aforementioned automotive industries namely metal, electronic and polymer. The data were gathered during the period of 15 February to 30 April 2015.

1.9 Operational Definitions

1.9.1 Dependent Variables (DVs):

ERP Post-Implementation Success: Ultimate goal of using ERP is to create business value and enhance business performance; therefore, acquiring optimize benefits from the deployed ERP in term of operational and managerial benefits, result in to success in the ERP post-implementation in the context of automotive suppliers.

Operational benefits: Operational benefits deal with day-to-day activities that involve obtaining and consuming resources that are usually repeated periodically i.e. daily, weekly and monthly in automotive suppliers in terms of cost reduction, cycle time reduction, productivity improvement, quality improvement and improved customer service.

Managerial Benefits: Managerial benefits address and support business management activities such as resource utilization and deployment, monitoring the operations and strategic decision making in automotive supplier companies in order to achieve better resource management, improved decision making and planning and improved performance in different operating divisions of the company.

1.9.2 Independent Variables (IVs):

Technological Factors: Technological factors refer to the capabilities, forces, attributes and resources that contribute to the ERP success on post-implementation phase in order to gain operational and managerial benefits in automotive suppliers.

Organizational Factors: Organizational factors related to the organizational issues that is established the necessary arrangements for the continuous and effective deployment of ERP in automotive industry.

Environmental Factors: Environmental factors refer to all effective external factors that could assure success of ERP in the post-implementation phase in term of catching the operational and managerial benefits in automotive context.

ERP Attributes: ERP attributes is defined as the attributes i.e., ease of use, relative advantage, and compatibility of ERP, which have effect on ERP post-implementation success especially on operational performance.

ERP Internal Expertise: ERP internal expertise is defined as internal capabilities to support operators and managers to trouble shooting the system, by providing the necessary maintenance, refinement, and adaptation.

ERP Data Accuracy: ERP data accuracy refers to the accurate integration of data that is input into the ERP as well as the output obtained from the ERP in order to improve operational and managerial performance concurrently.

ERP Project Management: ERP project management refers to the systematically manage and control activities to make sure that the ERP become success in post-implementation phase based on operational and managerial benefits through automotive supplier companies.

ERP Configuration: ERP configuration refers to well structure and configuration of ERP through the automotive supplier companies.

ERP Implementation Team: Refers to the authorized individuals who have sufficient skills in ERP post-implementation phase in case of improve effective deployment of ERP.

ERP Communication: ERP communication is defined as continuous and two-way communications across the automotive supplier companies.

ERP Top Management Support: ERP top management support refers to the supporting of top management relating to ERP implementation and post-implementation activities in automotive industry context.

ERP Alignment with Organization Operation: ERP alignment with organization operation refers to the coordination of operational activities with ERP in order to effective operation of ERP.

ERP Planning: ERP planning refers to the ongoing arrangements of ERP system on implementation and post-implementation phase through automotive supplier companies, which could reflected in better oparetional and managerial benefits.

Organizational Culture: Organizational culture related to the cultural and organizational readiness which to adopt and implement ERP.

ERP Training: ERP training refers to the documented and up-to-dated program to train employee of the firm to use the ERP effectively in terms of gain more operational and managerial benefits in the context of automotive industry.

ERP Learning: ERP learning refers to the processes designed by the automotive companies to identify effective as well as improved uses of the ERP, in line with current developments in the ERP.

ERP User Support: ERP user support refers to the acceptance and support of the ERP by all the employees of the automotive suppliers.

ERP External Pressures: An external pressure is a competitive/regulatory pressure to accept and support a specific information technology program i.e., ERP in the automotive industry.

ERP External Consultants Support: ERP external support related to the expertise and capability of the consultants in preparing various types of support to the automotive supplier companies i.e., knowledge, training, maintenance, and technical support externally.

ERP External Trust: Is defined as triadic group trust, composed of an implementing organization, the supplier who supplies all manufacturing resources (i.e., row material, service etc.) and the customers, which interact with the focal organization and ERP.

1.10 Outline of The Thesis

Key concepts and objectives of the research were introduced in this chapter. Next, in chapter two the related literature were reviewed and discussed. The literature review also discusses the research conceptual framework, the related theories, perspectives and theoretical framework of the study. The chapter ends with hypothesis development and a summary of the chapter. Chapter three, then, was designated to research methodology in terms of sample frame, research method, research instrument, data collection procedures, and determining data analysis method. In chapter four, an analysis of collected data and evidences with the initial model is presented. Finally, chapter five contains discussion and conclusion of research findings.

REFERENCES

Abbasi, M.S., Tarhini, A., Hassouna, M. Shah, F. (2015). Social, Organizational, Demography and Individuals' Technology Acceptance Behaviour: A Conceptual Model. *European Scientific Journal*, 11 (8).

Abdullah, N. A. H. N. (2009). *The Role of Technology Attribute, Trust, and Dependency on E-Procurement Adoptions: An Empirical Analysis of Malaysian Manufactures*. PhD Thesis: University of Southern Queensland.

Adam, F. and Sammon, D. (2004). *The Enterprise Resource Planning Decade: Lessons Learned And Issues for the Future.* IGI Global.

Akkermans, H. and van Helden, K. (2002). Vicious and Virtuous Cycles in ERP Implementation: A Case Study of Interrelations Between Critical Success Factors. *European Journal of Information Systems.* 11(1): 35-46.

Al-Fawaz, K., Al-Salti, Z. and Eldabi, T. (2008). Critical Success Factors in ERP Implementation: A review.

Aldammas.A and Al-Mudimigh. A (2005). Critical Success and Failure Factors of ERP Implementations: Two Cases from Kingdom of Saudi Arabia. *Journal of Theoretical and Applied Information Technology*. Vol. 28 No.2

Ali, H. and Hasan, M. (2010). *Deployment of ERP Systems at Automotive Industries, Security Inspection (Case Study: Iran Khodro Automotive Company). InGlobal Security, Safety, and Sustainability.* Springer.

Allen. D, Kern. T. Havenhand. M, (2002). ERP Critical Success Factors: An Exploration of the Contextual Factors in Public Sector Institution*: Proceedings of the 35th Hawaii International Conference on System Sciences: IEEE Computer Society.*

Al-Mashari, M. and Zairi, M. (2000). Supply-Chain Re-Engineering Using Enterprise Resource Planning (ERP) Systems: An Analysis of a SAP R/3 implementation case. *International Journal of Physical Distribution & Logistics Management*. 30 (3/4): 296-313.

AI-Mashari, M. and AI-Mudimigh, A. (2003a). ERP Implementation lessons from case studies. *Information Technology and People*, 16(1): 21-33.

AI-Mashari, M., AI-Mudimigh, A. and Zairi, M. (2003b). Enterprise Resource Planning a Taxonomy of Critical Factors. *European Journal of Operational Research*. 146(2): 352-364.

Aloini, D., Dulmin, R. and Mininno, V. (2007). Risk Management in ERP Project Introduction: Review of the Literature. *Information & Management.* 44(6): 547-567.

Amato, S., Esposito Vinzi, V. and Tenenhaus, M. (2004). *A Global Goodness-of-Fit Index for PLS Structural Equation Modeling.*Oral Communication to PLS Club, HEC School of Management, France, March, 24.

Amid. A, Moalagh. M, Zare Ravasan A. (2012). Identification and Classification of ERP Critical Failure Factors in Iranian Industries. *Information Systems* (37) 227–237.

Amoako-Gyampah, K. (2007). Perceived Usefulness, User Involvement and Behavioral Intention: An Empirical Study of ERP Implementation. *Computers in Human Behavior*. 23(3): 1232-1248.

Amoako-Gyampah, K. and Salam, A. F. (2004). An Extension of the Technology Acceptance Model in An ERP Implementation Environment. *Information & Management.* 41(6): 731-745.

Amrani, R., Rowe, F., and Geffroy-Maronnat, B., (2006). The Effects of Enterprise Resource Planning Implementation Strategy on Cross-Functionality. *Information Systems Journal*, 16 (1), 79–104.

Anderson, E. L, and Weitz, B. A. (1989). Determinants of Continuity in Conventional Industrial Channel Dyads. *Marketing Science* (8), 1989, 310-323.

Anderson, J. C. and Gerbing, D. W. (1988). Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach. *Psychological bulletin.* 103(3): 411.

Andreu, R. and Ciborra, C. (1996). Organisational Learning and Core Capabilities Development: The Role of IT. *Journalof Strategic Information Systems*, 5, 111–127.

Annamalai, C. and Ramayah, T. (2012). Does an Implementation Stage Act as a Moderator in Enterprise Resource Planning (ERP) Projects in India? An

Empirical Study. *Asian Journal of Research in Banking and Finance*, Vol. 2 No. 2, 200-229.

Arain, M., Campbell, M. J., Cooper, C. L. and Lancaster, G. A. (2010). What Is a Pilot or Feasibility Study? A Review of Current Practice and Editorial Policy. *BMC medical research methodology.* 10(1): 67.

Arbuckle, J. L. (2011). *IBM SPSS Amos 20 User's Guide*. Armonk, NY: IBM.

Argyris, C. (1992). *On Organisational Learning.* Blackwell, MA.

Armstrong, J. S. and Overton, T. S. (1977). Estimating Nonresponse Bias in Mail Surveys. *Journal of Marketing Research (JMR)*. 14(3):

Armstrong, M. (2012). *Armstrong's Handbook of Human Resource Management Practice*: Kogan Page Publishers.

Arokiasamy, S. (2004). *Critical Success Factors for Successful Implementation of Enterprise Resource Planning Systems in Manufacturing Organizations.* In: Universiti Sains Malaysia.

Ash, C.G., Burn, J.M. (2003). A Strategic Framework for the Management of ERP enabled e-Business Change. *European Journal of Operational Research*. 146(2): 374- 387.

Atieh Bahar (2008). *Reports on Iran's Automotive Sector, Consulting Firm*. Tehran, Iran. Fromwww.atiehbahar.com

Atieh Bahar (2011). *Reports on Iran's Automotive Sector, Consulting Firm*. Tehran, Iran. F*rom* www.atiehbahar.com

Atif, A., Richards, D. and Bilgin, A. (2012). Estimating Non-Response Bias In A Web-Based Survey of Technology Acceptance: A Case Study of Unit Guide Information Systems.*Proceedings of the 2012 ACIS 2012: Proceedings of the 23rd Australasian Conference on Information Systems*. 2012, 1-10.

Avram, C. (2010). ERP Inside Large Organizations. *Informatica Economica, 14*(4), 196-208. Retrieved from http://revistaie.ase.ro/author_details.aspx?aid=5691

Babbie, E. R. (2013). *The practice of social research*: Cengage Learning.

Backhaus, K., Erichson, B., Plinke, W. and Weiber, R. (2006). *Multivariate analysemethoden: Eine Anwendungsorientierte Einführung*(Vol. 11): Springer Berlin.

Bajwa, D. S., Garcia, J. E., and Mooney, T. (2004). An Integrative Framework for the Assimilation of Enterprise Resource Planning Systems: Phases,

Antecedents, and Outcomes. *Journal of Computer Information Systems,* 44(3): 81-90.

Bancroft, N., Seip, H. and Sprengel, A. (1998). *Implementing SAP R/3, 2nd edn*, (Manning Publications, Greenwich).

Baraldi, E. (2009). User-Related Complexity Dimensions of Complex Products and Systems (CoPS): A Case of Implementing an ERP System. *International Journal of Innovation Management.* 13(01): 19-45.

Barney, J.B. (1996). The Resource-Base View of the Firm.*Organization Science*, Vol. 7 No. 5, 469-470.

Barriball, K. L. and While, A. E. (1999). Non-Response In Survey Research: A Methodological Discussion and Development of An Explanatory Model. *Journal of Advanced Nursing*, 30(3): 677-686.

Bartlett, M. S. (1954). A Note on The Multiplying Factors For Various χ 2 Approximations. *Journal of the Royal Statistical Society. Series B (Methodological)*, 296-298.

Barua, A., Kriebel, C. H., Mukhopadhyay, T. (1995). Information Technologies and Business Value: An Analytic and Empirical Investigation. *Information Systems Research,* 6(1): 3–23.

Baxter, G. and Sommerville, I. (2011). Socio-Technical Systems: From Design Methods To Systems Engineering. *Interacting with Computers.* 23(1): 4-17.

Beatty, R. C. and Williams, C. D. (2006). ERP II: Best Practices For Successfully Implementing An ERP Upgrade. *Communications of the ACM.* 49(3): 105-109.

Bechor, T., Neumann, S., Zviran, M. and Glezer, C. (2010). A Contingency Model for Estimating Success of Strategic Information Systems Planning. *Information & Management.* 47(1): 17-29.

Beheshti, H.M. and Beheshti, C.M. (2010). Improving Productivity and Firm Performance with Enterprise Resource Planning. *Enterprise Information Systems*, Vol. 4 No. 4, 445-472.

Behrens S., Jamieson, K., Jones, D. and Cranston, M. (2005). Predicting System Success using the Technology Acceptance Model: A Case Study. 16th *Australasian Conference on Information Systems*, Sydney

Bertalanffy, L. (1972). The History and Status of General Systems Theory. *Academy of Management Journal, 15*, 407-426.

Besson, P. and Rowe, F. (2001). ERP Project Dynamics and Enacted Dialogue: Perceived Understanding, Perceived Leeway, and The Nature of Task-Related Conflicts.*ACM Sigmis Database*. 32 (4): 47-66.

Bhatti, T. (2005*).* Critical Success Factors for the Implementation of Enterprise Resource Planning (ERP): empirical validation.*The Second International Conference on Innovation in Information Technology.*

Bingi, P., Sharma, M.K. and Godla, J.K. (1999). Critical Issues Affecting an ERP Implementation, *Information Systems Management,* 16(3): 7-14.

Botta-Genoulaz, V., Millet, P-A. Grabot, B. (2005). A Survey on the Recent Research Literature on ERP Systems. *Computers in Industry,* 56(6): 510-522.

Botta-Genoulaz. V, Millet. P, (2006). An Investigation into the Use of ERP Systems inthe Service Sector, *International Journal of Production Economics* 99 (1–2) 202–221.

Bradford, M. and Florin, J. (2003). Examining The Role of Innovation Diffusion Factors on The Implementation Success of Enterprise Resource Planning Systems. *International Journal of Accounting Information Systems.* 4(3): 205-225.

Bradley, J. (2008). Management Based Critical Success Factors in the Implementation of Enterprise Resource Planning Systems. *International Journal of Accounting Information Systems*, 4(3): 205-225.

Broadbent, M., Weill, P., Clair, D. St. (1999). The Implications of Information Technology Infrastructure for Business Process Redesign. *MIS Quarterly*, 23(2): 159–182.

Bryman, A. (2012). *Social research methods*: Oxford university press.

Burns, R. B. and Bursn, R. B. (2008). Introduction to Research Methods.

Burstein, F., Brézillon, P. and Zaslavsky, A. (2010). *Supporting Real Time Decision-Making: The Role of Context in Decision Support on the Move*: Springer.

Byrne, B. M. (2013). *Structural Equation Modeling With LISREL, PRELIS, and SIMPLIS: Basic Concepts, Applications, and Programming*: Psychology Press.

Cameron, P.D., Meyer, S.L. (1998). Rapid ERP Implementation. *Management Accounting*, *80*(6): 58-60.

Capaldo, G., Rippa, P. (2009). A Planned-Oriented Approach for ERPImplementation Strategy Selection. *Journal of Enterprise Information Management, 22*, 642-659.

Carton, F. and Adam, F. (2005). Understanding The Impact of Enterprise Systems on Management Decision Making: An Agenda For Future Research. *The Electronic Journal of Information Systems Evaluation*. 8 (2): 99-106.

Chang, D. s. and Kuo, L. c. R. (2008). The Effects of Sustainable Development on Firms' Financial Performance-An Empirical Approach. *Sustainable Development*, 16 (6): 365-380.

Chang, S. (2004). ERP Life Cycle Implementation, Management and Support: Implications for Practice and Research. *Proceedings of the 37th Annual Hawaii International Conference on System Sciences (HICCS 04)*, Big Island, Hawaii, 80227.3-80237.3.

Chang, M.-K., Cheung, W., Cheng, C.-H. and Yeung, J. H. (2008). Understanding ERP System Adoption from the User's Perspective. *International Journal of Production Economics.* 113(2): 928-942.

Charmaine .V. W. (2012). *Post-Implementation Planning and Organizational Structure of Enterprise Resource Planning Systems*. Dissertation. Retrieved from Psyc INFO database.

Chatterjee, D, Grewal, Rand Sambamurthy, V. (2002). Shaping Up for Ecommerce: Institutional Enablers of the Organizational Assimilation of Web Technologies. *MIS Quarterly*, 26(2): 65-89.

Chau, P.Y.K. and K.Y. Tam. (1997). Factors Affecting the Adoption of Open Systems: An Exploratory Study, *MIS Quarterly*, 21 (1): 1-21.

Chen, I. J. (2001). Planning For ERP Systems: Analysis and Future Trend. *Business Process Management Journal.*7(5): 374-386.

Chien, S.-W. and Tsaur, S.-M. (2007). Investigating The Success of ERP Systems: Case Studies in Three Taiwanese High-Tech Industries. *Computers in Industry*, 58(8): 783-793.

Chin, W. W. (1998a). Commentary: Issues and Opinion on Structural Equation Modeling. *MIS quarterly*, vii-xvi.

Chin, W. W. (1998b). *The Partial Least Squares Approach to Structural Equation Modeling. In G. A. Marcoulides (Ed.), Modern Methods for Business Research* (295–336). London: Lawrence Erlbaum Associates.

Chin, W. W. and Dibbern, J. (2010). *An Introduction To a Permutation Based Procedure for Multi-Group PLS Analysis: Results of Tests of Differences on Simulated Data and a Cross Cultural Analysis of the Sourcing of Information System Services Between Germany and the USA.* Handbook of Partial Least Squares(171-193): Springer.

Chin, W. W., Marcolin, B. L. and Newsted, P. R. (2003). A Partial Least Squares Latent Variable Modeling Approach for Measuring Interaction Effects: Results From aMonte Carlo Simulation Study and an Electronic-Mail Emotion/Adoption Study. *Information Systems Research*, 14(2): 189-217.

Churchill Jr, G. A. (1979). A Paradigm for Developing Better Measures of Marketing Constructs. *Journal of Marketing Research*, 64-73.

Chwelos, P., Benbasat, I., Dexter, A. S. (2001). Research Report: Empirical Test of an EDI Adoption Model. *Information Systems Research*, 12(3): 304–321.

Cochran, W. G. (1977). *Sampling techniques (3rd Ed.).* New York: John Wiley & Sons.

Cohen, L., Manion, L. and Morrison, K. (2011). *Research Methods in Education.* Routledge.

Cohen, J. (1983). The Cost of Dichotomization. *Applied Psychological Measurement*, 7(3): 249-253.

Cohen, J. (1988). *Statistical Power Analysis for The Behavioral Sciencies*: Routledge.

Colman, A. M., Morris, C. E. and Preston, C. C. (1997). Comparing Rating Scales of Different Lengths: Equivalence of Scores from 5-Point and 7-Point Scales. *Psychological Reports.* 80(2): 355-362.

Colquitt,J.A and Salam,S.C. (2009). *Foster Trust through Ability, Benevolence, and Integrity*. Handbook of Principles of Organizational Behavior. 389.

Comerford, J. (2000). Plan the Complexity out of ERP Implementations. *Business Journal*. 1826-27.

Computer Technology Research Corporation. (1999). Enterprise Resource Planning: Integrating Applications and Business Process across the Enterprise. *Computer technology Research Corporation, USA.*

Cooper, D. and Schindler, P. (2006). *Market Research.* McGraw Hill, New York.

Cooper, R. B. and Zmud, R. W. (1990). Information Technology Implementation Research: A Technological Diffusion Approach. *Management science.* 36(2): 123-139.

Correa, P. and Cruz, R. (2005). *Success of ERP systems in Chile: an Empirical Study.Proceedings of the 2005 Proceedings of the Eleventh Americas Conference on Information Systems (AMCIS2005), Omaha, NE, 11-14 August, 757-768.*

Cozby, P., and Bates, S. (2011). *Methods in Behavioral Research*. Utah State University Faculty Monographs.

Craig, C. S. and Douglas, S. P. (2005). *International Marketing Research.*John Wiley & Sons.

Creswell, J. W. (2013). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches.* Sage Publications, Incorporated.

Cronbach, L. J. (1951). Coefficient Alpha and the Internal Structure of Tests. *Psychometrika*, 16(3): 297-334.

Cronbach, L. J. and Shavelson, R. J. (2004). My Current Thoughts on Coefficient Alpha and Successor Procedures.*Educational and Psychological Measurement.* 64(3): 391-418

Davenport, T. H. (1993). *Process Innovation: Reengineering Work through Information Technology*. Boston, Massachusetts: Harvard Business School Press.

Davenport, T. and Linder, J. (1994). Information Management Infrastructure: The New Competitive Weapon? In: *27thAnnual Hawaii International Conference on SystemsScience.* Maui, Hawaii.

Davenport, T.H. (2000). Putting the Enterprise into the Enterprise System.*Harvard Business Review*, 7 6(4): 121-131.

David, M. and Sutton, C. D. (2004). *Social Research: The Basics.* Sage.

Dawson, J. and Owens, J. (2008). Critical Success Factors in the Chartering Phase: A Case Study of An ERP Implementation. *International Journal of Enterprise Information Systems (IJEIS).* 4(3): 9-24.

Detert, J.R., Schroeder, R.G. and Mauriel, J.J. (2000). A Framework for Linking Culture and Improvement Initiatives in Organisations. *Academy of Management Review*, 25, 850–863.

Dezdar, S. and Sulaiman, A. (2009). Successful Enterprise Resource Planning Implementation: Taxonomy of Critical Factors. *Industrial Management & Data Systems*. 109 (8): 1037-1052.

Dezdar, S. and Ainin, S. (2011a). Examining ERP Implementation Success From A Project Environment Perspective. *Business Process Management Journal*. 17 (6): 919-939.

Dezdar, S. and Ainin, S. (2011b). The Influence of Organizational Factors on Successful ERP Implementation.*Management Decision.* 49(6): 911-926.

DiMaggio, P.J. and Powell, W.W. (1983). The Iron Cage Revisited institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review,* 48(2): 147-160.

Diamantopoulos, A. and Siguaw, J. A. (2000). *Introducing LISREL: A guide for the uninitiated*: Sage.

Duncan, N.B. (1995) Capturing Flexibility for Information Technology Infrastructure: A Study of Resource Characteristics and Their Measure. *Journal of Management Information Systems*, 12, 37–57.

Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *Academy of Management Review*, 14(4): 532-550.

Elmeziane, K. and Elmeziane, M. (2012). Enterprise Resources Planning Systems Implementation Success In China.*Business & Management Review*. 1 (12):

Esteves, J. (2001). Enterprise Resource Planning Systems Research: An Annotated Bibliography. *Communications of the AIS*, 7(8): 1-52.

Esteves, J. (2009). A Benefits Realisation Road-Map Framework for ERP Usage in Small and Medium-Sized Enterprises. *Journal of Enterprise Information Management.* 22(1/2): 25-35.

Esteves, J. and Pastor, J. (1999). An ERP Lifecycle-Based Research Agenda.*In 1st International Workshop in Enterprise Management & Resource Planning.*

Esteves, J. and Pastor, J. A. (2006). *Organizational and Technological Critical Success Factors Behavior Along the ERP Implementation Phases.* In Enterprise Information Systems. VI. Springer.

Falk, R. F. and Miller, N. B. (1992). *A Primer for Soft Modeling*. Akron, OH, US: University of Akron Press.

Fars News Agency (2010). *Iran Ranks 5th in Car Production Growth*". English. Farsnews.com. August 18.

Federici, T. (2009). Factors Influencing ERP Outcomes in SMEs: A Post-Introduction Assessment. *Journal of Enterprise Information Management.* 22(1/2): 81-98.

Field, A. (2009). *Discovering Statistics Using SPSS*: Sage publications.

Finney, S. and Corbett, M. (2007). ERP Implementation: A Compilation and Analysis of Critical Success Factors. *Business Process Management Journal.* 13(3): 329-347.

Fornell, C. and Cha, J. (1994). Partial Least Squares. *Advanced Methods of Marketing Research*, 407, 52-78.

Fornell, C. and Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 39-50.

Françoise, O., Bourgault, M. and Pellerin, R. (2009). ERP Implementation Through Critical Success Factors' Management.*Business Process Management Journal*. 15 (3): 371-394.

Frankfort-Nachmias, C. and Nachmias, D. (2007). *Research Methods in the Social Sciences.* Macmillan.

Gable, G. G. (1994). Integrating Case Study and Survey Research Methods: An Example in Information Systems. *European Journal of Information Systems.* 3(2): 112-126

Gable, G. (1998). Large Package Software: A Neglected Technology? *Journal of Global Information Management*, *6*(3), 3-4.

Gable, G., Sedera, D. and Chan, T. (2003). Enterprise Systems Success: A Measurement Model. *Proceedings of the 24th International Conference on Information Systems, Seattle, WA,* 14 December, available at: http://eprints.qut.edu.au/4743/

Garver, M. S. and Mentzer, J. T. (1999). Logistics Research Methods: Employing Structural Equation Modeling to Test for Construct Validity. *Journal of Business Logistics*, 20, 33-58.

Gefen, D. and Ridings, C. M. (2002). Implementation Team Responsiveness and User Evaluation of Customer Relationship Management: A Quasi-Experimental Design Study of Social Exchange Theory. *Journal of Management Information Systems*. 19 (1): 47-70.

Gibbs, J. L., and Kraemer, K. L. (2004). A Cross-Country Investigation of the Determinants of Scope of E-Commerce Use: An Institutional Approach. *Electronic Markets*, 14(2): 124-137.

Götz, O., Liehr-Gobbers, K. and Krafft, M. (2010). *Evaluation of Structural Equation Models Using the Partial Least Squares (PLS) Approach*. In Handbook of Partial Least Squares. (691-711). Springer.

Grabski, S., Leech, S., Schmidt, P. (2011). A Review of ERP Research: A Future Agenda for Accounting Information Systems. *Journal of Information Systems, 25*, 37-78.

Gupta, A. (2000). Enterprise Resource Planning: The Emerging Organizational Value Systems. *Industrial Management & Data Systems*. 100 (3): 114-118.

Haenlein, M. and Kaplan, A. M. (2004). A Beginner's Guide to Partial Least Squares Analysis. *Understanding Statistics*. 3(4): 283-297.

Hair, J. F., Anderson, R. E., Tatham, R. L. and Black, W. C. (1998). *Multivariate Analysis*. Englewood: Prentice Hall International.

Hair, J. F., Wolfinbarger, M. F., Ortinau, D. J. and Bush, R. P. (2008). *Essentials of Marketing Research*: McGraw-Hill Irwin.

Hair, J. F. (2009). Multivariate data analysis.

Hair, J. J. F., Black, W. C., Babin, B. J. and Anderson, R. E. (2010). *Multivariate Data Analysis: A global perspective.* Upper Saddle River, New Jersey: Pearson Education.

Hair, J. F., Sarstedt, M., Ringle, C. M. and 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 Jr, J. F., Hult, G. T. M., Ringle, C. and Sarstedt, M. (2013). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*: SAGE Publications, Incorporated.

Hair Jr, J. F., Sarstedt, M., Hopkins, L. and Kuppelwieser, V. G. (2014a). Partial Least Squares Structural Equation Modeling (PLS-SEM): An Emerging Tool in Business Research. *European Business Review*, 26(2): 106-121.

Hair Jr, J. F., Hult, G. T. M., Ringle, C. and Sarstedt, M. (2014b). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. SAGE Publications, Incorporated.

Hakim. A, Hakim. H, (2010). A Practical Model on Controlling The ERP Implementation Risks, *Information Systems* 35 (2) 204–214.

Hasibuan, Z. A. and Dantes, G. R. (2012). Priority of Key Success Factors (KSFS) on Enterprise Resource Planning (ERP) System Implementation Life Cycle. *Journal of Enterprise Resource Planning Studies*. 1-15.

Hatamirad. A and Mehrjerdi. H, (2010). *Deployment of ERP Systems at Automotive Industries, Security Inspection* (*Case Study: Iran Khodro Automotive Company*) Springer.

Helm, S., Eggert, A. and Garnefeld, I. (2009). *Modelling The Impact of Corporate Reputation on Consumer Satisfaction and Loyalty Using PLS. Esposito Vinzi, V.; Chin, WW; Henseler, J.*

Henseler, J. (2012). PLS-MGA: *A Non-Parametric Approach To Partial Least Squares-Based Multi-Group Analysis Challenges at the Interface of Data Analysis, Computer Science, and Optimization* (495-501): Springer.

Henseler, J. and Fassott, G. (2010). *Testing Moderating Effects in PLS Path Models: An Illustration of Available Procedures.* Handbook of Partial Least Squares(713-735): Springer.

Henseler, J. and Sarstedt, M. (2013). Goodness-Of-Fit Indices for Partial Least Squares Path Modeling. *Computational Statistics*, 28(2): 565-580.

Henseler, J., Ringle, C. and Sinkovics, R. (2009). The Use of Partial Least Squares Path Modeling in International Marketing.*Advances in International Marketing (AIM).* 20: 277-320.

Hendricks, K. B., Singhal, V. R., and Stratman, J. K. (2007). The Impact of Enterprise Systems on Corporate Performance: A study of ERP, SCM, and CRM System Implementations. *Journal of Operations Management*, 25(1): 65–82.

Hessler, R. M. (1992). *Social Research Methods.* Thomson Learning.

Hinkin, T. R. (1998). A Brief Tutorial on the Development of Measures for Use In Survey Questionnaires. *Organizational Research Methods*. 1(1), 104-121.

Hitt, L. M., Wu, D. and Zhou, X. (2002). Investment In Enterprise Resource Planning: Business Impact and Productivity Measures. *Journal of Management Information Systems*. 19 (1): 71-98.

Ho, C.-F., Wu, W.-H. and Tai, Y.-M. (2004). Strategies For The Adaptation of ERP Systems.*Industrial Management & Data Systems.* 104(3): 234-251.

Hofstede, G., Neuijen, B., Ohayv, D. D. and Sanders, G. (1990). Measuring Organizational Cultures: A Qualitative and Quantitative Study Across Twenty Cases. *Administrative science quarterly.*286-316.

Holland, C. P. and Light, B. (1999). A Critical Success Factors Model For ERP Implementation. *IEEE software.* 16 (3): 30-36.

Holton, E. and Burnett, M. (1997). *Qualitative Research Methods*. *Human Resource Development Research Handbook: Linking Research and Practice*. *San Francisco:* Berrett-Koehler Publishers.

Hong, K.K., Kim, Y.G. (2002). The Critical Success Factors of ERP Implementation: An Organizational Fit Perspective. *Information & Management*, *40*(1): 25-40.

Hsieh, J. P.-A. and Wang, W. (2007). Explaining Employees'extended Use of Complex Information Systems. *European Journal of Information Systems.* 16(3): 216-227.

Hsu L.L., Chen M. (2004). Impacts of ERP Systems on the Integrated- Interaction Performance of Manufacturing and Marketing. *Industrial Management & Data Systems* 104 (1): 4255.

Hsu, K., Sylvestre, J., and Sayed, E. N. (2006). Avoiding ERP Pitfalls. *Journal of Corporate Accounting & Finance*, 17(4), 67–74.

Huang, Z. and Palvia, P. (2001). ERP Implementation Issues in Advanced and Developing Countries. *Business Process Management,* 7(3): 276-284.

Hulland, J. (1999). Use of Partial Least Squares (PLS) In Strategic Management Research: A Review of Four Recent Studies. *Strategic management journal*. 20(2), 195-204

Iacovou, C.L., I. Benbasat, and A.S. Dexter. (1995). Electronic Data Interchange and Small Organizations: Adoption and Impact of Technology, *MIS Quarterly,* 19(4): 465- 485.

Ifinedo, P. (2007). Interactions between Organizational Size, Culture, and Structure and Some IT Factors in the Context of ERP Success Assessment: An Exploration Investigation. *Journal of Computer Information Systems,* 27(4): 28-44.

Ifinedo, P. (2008). An Empirical Study of ERP Success Evaluations by Business and IT Managers. *Information Management & Computer Security,* 15(4): 270-282.

Iran Daily (2014). *From* http://iran-daily.com/newspaper/page/4826/4/13202/0.

Iskanius, P. (2010). Risk Management of ERP Projects in Manufacturing SMEs. *Information Resources Management Journal (IRMJ)*. 23 (3): 60-75.

Israel, G. D. (1992). *Determining sample size*: University of Florida Cooperative Extension Service, Institute of Food and Agriculture Sciences, EDIS.

Jacobs, F.R., Bendoly, E. (2003). Enterprise Resource Planning Developments and Directions for Operations Management Research. *European Journal of Operational Research,* 146(2): 5-12.

Jacobson, S., Shepherd, J., D'Aquila, M., and Carter, K. (2007). *The ERP Market Sizing Report,* 2006–2011: AMR Research.

Jafari, S.M., Osman, M.R., Rosnah, M.Y. and Tang, S.H. (2006). A Consensus on Critical Success Factors for Enterprise Resource Planning Systems Implementation: The Experience of Malaysian Firm. *International Journal of Manufacturing Technology and Management*, Vol. 17 No. 4, 396-407.

Jain, V. (2008). *A Framework for Sustainable ERP Value* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3316122)

Janvier-James, A. M. (2012). A New Introduction to Supply Chains and Supply Chain Management: Definitions and Theories Perspective. *International Business Research*. 5 (1), 194.

Jasperson, J. S., Carter, P. E. and Zmud, R. W. (2005). A Comprehensive Conceptualization of Post-Adoptive Behaviors Associated with Information Technology Enabled Work Systems. *Mis Quarterly*, 29(3) : 525-557.

Jerez-Gomez, P., Céspedes-Lorente, J. and Valle-Cabrera, R. (2005). Organizational Learning and Compensation Strategies: Evidence from the Spanish Chemical Industry. *Human Resource Management,* 44(3): 279-299.

Jiang, Y (2005). *Critical Success Factors in ERP Implementation in Finland*. *Swedish School of Economics and Business Administration*, Finland, 5 - 6.

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, 39(1): 31-36.

Kamhawi, E. M. (2008). Enterprise Resource-Planning Systems Adoption in Bahrain: Motives, Benefits, and Barriers. *Journal of Enterprise Information Management*, 21(3): 310.

Kanungo, S. and Bagchi, S. (2000). Understanding User Participation and Involvement in ERP Use. *Journal of Management Research*. 1 (1):

Kaplan, D. (2009). *Structural Equation Modeling: Foundations and Extensions.* SAGE Publications, Incorporated.

Karakanian, M. (1999). Choosing an ERP Implementation Strategy. *Year 2000 Practitioner*, *2*(7): 1-6.

Karimi, J., Somers, T. M. and Bhattacherjee, A. (2007). The Role of Information Systems Resources in ERP Capability Building and Business Process Outcomes. *Journal of Management Information Systems.* 24(2): 221-260.

Katzman, K., (2016). Iran Sanctions. Congressional Research Service Avaiable at: http://www.crs.gov/7-5700

Keil, M. (2000). A Cross-Cultural Study on Escalation of Commitment Behavior in Software Projects. *MIS Quarterly*, 24(2): 299.

Kelle, P. and Akbulut, A. (2005). The Role of ERP Tools in Supply Chain Information Sharing, Cooperation, and Cost Optimization. *International Journal of Production Economics.* 93: 41-52.

Kennerley, M., and Neely, A. (2001). Enterprise Resource Planning: Analyzing the Impact. *Integrated Manufacturing Systems*, *12*(2): 103-113.

Kerlinger, F. N. and Lee, H. B. (1999). Foundations of Behavioral Research.

Ketchen, D.J. Jr and Hult, G.T.M. (2007). Bridging Organization Theory and Supply Chain Management: The Case of Best Value Supply Chains. *Journal of Operations Management*, Vol. 25 No. 2, 573-580.

Ke, W. and Wei, K.K. (2006). Organizational Learning Process: Its Antecedents and Consequences in Enterprise System Implementation. *Journal of Global Information Management.* 14(1): 1-22.

Ke, W. and Wei, K.K (2008). Organizational Culture and Leadership in ERP Implementation. *Decision Support Systems*, 45(2): 208-218.

Kharbanda, R. (1999). Enterprise Resource Planning: Baan Implementation by New Holland Tractors India (Pvt) Ltd. *Erp: A Managerial Perspective.*137-143.

Kim, J. (2009). Activity-Based Framework for Cost Savings Through the Implementation of an ERP System. *International Journal of Production Research*. 47 (7): 1913-1929.

King, S. F. and Burgess, T. F. (2006). Beyond Critical Success Factors: A Dynamic Model of Enterprise System Innovation. *International Journal of Information Management.* 26(1): 59-69.

Kline, R. B. (2011). *Principles and Practice of Structural Equation Modeling.* Guilford press.

Koch, C. (2001). BPR and ERP: Realising a Vision of Process with IT. *Business Process Management Journal*. 7 (3): 258-265.

Koh, S. L., Gunasekaran, A. and Goodman, T. (2011). Drivers, Barriers and Critical Success Factors for ERPII Implementation In Supply Chains: A Critical Analysis. *The Journal of Strategic Information Systems*, 20(4): 385-402.

Kotrlik, J. W. K. J. W. and Higgins, C. C. H. C. C. (2001). Organizational Research: Determining Appropriate Sample Size in Survey Research Appropriate Sample Size in Survey Research. *Information technology, learning, and performance journal*, 19(1): 43.

Kouki, R., Pellerin, R. and Poulin, D. (2010). Investigating the Determinants of Effective Enterprise Resource Planning Assimilation: A Cross-Case Analysis. *International Journal of Business Information Systems, 5(1):*

Kouki, R., Poulin, D and Pellerin, R. (2007). ERP Assimilation Challenge: An Integrative Framework for a Better Post-Implementation Framework. *Journal of Operations and Logistics*, 1(3): 1-16.

Kræmmergaard, P. and Rose, J. (2002). Managerial Competences for ERP Journeys. *Information Systems Frontiers*. 4 (2): 199-211.

Kraft, P., Rise, J., Sutton, S. and Røysamb, E. (2005). Perceived Difficulty in the Theory of Planned Behaviour: Perceived Behavioural Control or Affective Attitude? *British Journal of Social Psychology*. 44(3): 479-496.

Kronbichler. S. A, Herwig Ostermann and Roland Staudinger (2009). A Review of Critical Success Factors for ERP-Projects. *The Open Information Systems Journal*, 3:14-25

Kronbichler, S. A., Ostermann, H. and Staudinger, R (2010). AComparison of ERP-Success Measurement Approaches.*Journal of Information Systems and Technology Management* Vol. 7, No.2, *281-310*

Kumar, R. (2005). *Research Methodology: A Step-By-Step Guide For Beginners, (Second Ed.).* UK: SAGA Publication.

Kumar, V., Maheshwari, B. and Kumar, U. (2003). An Investigation of Critical Management Issues in ERP Implementation: Emperical Evidence from Canadian Organizations. *Technovation.* 23(10): 793-807.

Kwahk, K.-Y. and Ahn, H. (2010). Moderating Effects of Localization Differences on ERP Use: A Socio-Technical Systems Perspective. *Computers in Human Behavior*. 26(2): 186-198.

Lall, A. (2003). *Making ERP Work for You*. Retrieved December 24, 2004 from http://www.business-standard.com/search/storypage

Law, C., Chen, C., Wu, B. (2010). Managing the Full ERP Life Cycle: Considerations of Maintenance and Support Requirements and IT Governance Practice as Integral Elements of the Formula for Successful ERP Adoption. *Computers in Industry*, 61,297-308.

Li, C. (1999). ERP Packages: What's Next? *Information Systems Management*. 16: 31-35

Liang, H., Saraf, N., Hu, Q. and Xu, W. (2007). Assimilation of Enterprise Systems: The Effect of Institutional Pressures and the Mediating Role of Top Management. *MISQuarterly*, 31(1): 59-87.

Liu, L. N., Feng, Y. Q., Hu, Q., Huang, X. J. (2010a). *Understanding Individual Level ERP Assimilation: A Multi-Case Study*. In Proceedings of the 43th Hawaii International Conference on System Sciences, January 5–8, HI, USA

Liu, L. N., Feng, Y. Q., Hu, Q., Huang, X. J. (2010b). Understanding Organizational Level ERP Assimilation: A Multi-Case Study. *In Proceedings of the 43th Hawaii International Conference on System Sciences*, January 5–8, HI, USA.

Livermore, C. R. and Rippa, P. (2011). ERP Implementation: A Cross-Cultural Perspective. *Journal of Global Information Technology Management.* 14(3):

Loh, T. C. and Koh, S. (2004). Critical Elements for a Successful Enterprise Resource Planning Implementation In Small-And Medium-Sized Enterprises. *International journal of production research*, 42(17): 3433-3455.

Mabert, V. A., Soni, A. and Venkataramanan, M. (2001). Enterprise Resource Planning: Common Myths Versus Evolving Reality. *Business Horizons.* 44(3): 69-76.

Mabert, V. A., Soni, A. and Venkataramanan, M. (2003). The Impact of Organization Size on Enterprise Resource Planning (ERP) Implementations In The US Manufacturing Sector. *Omega.* 31(3): 235-246.

Madapusi, A. (2009). *Post-Implementation Evaluation of Enterprise Resource Planning (ERP) Systems*. Dissertation Abstracts International Section A, 69. Retrieved from Psyc INFO Database.

Madapusi, A. and Ortiz, D. A. C. (2014). The Influence of Technical Competence Factors in ERP System Implementations. *Journal of Applied Business and Economics*, 16(2): 27.

Madhavan, S. K. (2000). Erhardt Leimer India Limited: Strategic Transformation through ERP. *Vikalpa*. 25 (3): 57-70.

Malhotra, N. K., Birks, D. F. and Inc.., E. I. S. (2008). *Marketing Research: An Applied Approach*: Financial Times, Prentice Hall.

Markus, M.L. and Tanis, C. (2000).*The Enterprise Systems Experience – From Adoption to Success* (Claremont Graduate University, California).

Markus, M. L. Axline, S. Petrie, D. and Tanis C. (2000). Learning from Adopters' Experiences with ERP-Successes and Problems. *Journal of Information Technology,* 15(4): 245-265.

Marsh. A (2000). The Implementation of Enterprise Resource Planning Systems in Small-Medium Manufacturing Enterprises in South-East Queensland: A Case Study Approach: *Proceedings of the 2000 IEEE International Conference on Management of Innovation and Technology*.

Martinsons, M. G. (2004). ERP in China: One Package, Two Profiles. *Communications of the ACM*. 47 (7): 65-68.

McGinnis, T., Huang, Z. (2007). Rethinking ERP Success: A New Perspective from Knowledge Management and Continuous Improvement. *Information & Management, 44*: 626-634.

Menard, S. (2002). *Applied Logistic Regression Analysis*(Vol. 106): Sage.

Meurs, I. V. (2012). *An Agile Organization: The Influence of Trust and Empowerment on the Agility of an Organization*. Master Thesis: Rotterdam School of Management.

Min, S. and Mentzer, J. T. (2004). Developing and Measuring Supply Chain Management Concepts. *Journal of business logistics*. 25 (1), 63-99.

Mintu-Wimsatt, A., and Graham, J. L. (2004). Testing a Negotiation Model on Canadian Anglophone and Mexican Exporters. *Journal of the Academy of Marketing Science*. 32(3): 345-356.

Moller, C. (2005). ERP II: a Conceptual Framework for Next-Generation Enterprise Systems? *Journal of Enterprise Information Management*, Vol. 18 No. 4, 483-497.

Moohebat, M.R. Jazi, M.D. Asemi, A. (2011). Evaluation of the ERP Implementation at Esfahan Steel Company Based on Five Critical Success Factors: A Case Study. *International Journal of Business and Management*, Vol. 6 (5), 236-250.

Mooney, J. G., Gurbaxani, V., and Kraemer, K. L. (1995). *A Process Oriented Framework for Assessing the Business Value of Information Technology*. In Paper Presented at the International Conference on Information Systems Amsterdam, Netherlands, December 10–13, 1995.

Morton, N. A. and Hu, Q. (2008). Implications of the Fit Between Organizational Structure znd ERP: A Structural Contingency Theory Perspective. *International Journal of Information Management*. 28 (5): 391-402.

Motwani, J., Subramanian, R. and Gopalakrishna, P. (2005). Critical Factors for Successful ERP Implementation: Exploratory Findings From Four Case Studies. *Computers in Industry.* 56(6): 529-544.

Musaji, Y. (2005). ERP Post-implementation Problems. *Information Systems Control Journal*, 4.

Myers, M. D. (1997). Qualitative Research in Information Systems. *Management Information Systems Quarterly*, 21:241-242.

Nah, F. and Delgado, S. (2006). Critical Success Factors for ERP Implementation and Upgrade. *Journal of Computer Information Systems,* 46(5): 99-113.

Nah, F. F.-H., Zuckweiler, K. M., and Lau, J. L.-S. (2003). ERP Implementation: Chief Information Officers' Perceptions of Critical Success Factors. *International Journal of Human–Computer Interaction,* 16(1): 5–22

Nah, F. F.-H., and Lau, J. L.-S. (2001). Critical Factors for Successful Implementation of Enterprise Systems." *Business Process Management Journal*, 7 (3): 285-296,

Nandhakumar, J., Rossi, M., Talvinen, J. (2002). Planning for 'drift'? Implementation Process of Enterprise Resource Planning Systems. *Proceedings of the 36th. Hawaii International Conference on System Sciences*, p. 10.

Ndung'u, P, W. and Kyalo, J, K (2015). An Evaluation of Enterprise Resource Planning Systems Implementation Experiences for Selected Public Universities in Kenya. *International Journal of Scientific Research and Innovative Technology. Vol. 2 No. 2*

Nejib, B. M. (2013). Determinants of Post Implementation Success of ERP In Tunisian Companies: An Empirical Study of The Moderating Role of The Technical Fit. *International Review of Management and Business Research*, 2(4): 1101.

Neuman, W. L. and Kreuger, L. (2003). *Social Work Research Methods: Qualitative and Quantitative Approaches.* Allyn and Bacon.

Nicolaou, A. I. (2004). ERP Systems Implementation: Drivers of Post-Implementation Success. *Proceedings of the 2004 Decision Support in an Uncertain and Complex World: The IFIP TC8/WG8. 3 International Conference*, 589-597.

Niedergassel, B. (2011). *Knowledge Sharing in Research Collaborations: Understanding the Drivers and Barriers*: Springer.

Nikookar. G, *et al.,* (2010). Competitive Advantage of Enterprise Resource Planning Vendors in Iran. *Information Systems.* 35 (3) 271–277.

Nunnally, J. C. and Bernstein, I. H. (1994). *Psychometric Theory* (3rd edn ed.). New York: McGraw-Hill.

Offermann, P., Liebrecht, L. and Haarlander, N. (2008). A Method for Designing Operational Software Systems According To the SOA. *ERP management.* 4(1): 32-35.

OICA (2013). Retrieved fromhttp://www.oica.net/category/production-statistics/2013-statistics/.

O'Leary, D. E. (2000). *Enterprise Resource Planning Systems: Systems, Life Cycle, Electronic Commerce, And Risk.* Cambridge University Press.

O'Leary, D. E. (2004). Enterprise Resource Planning (ERP) Systems: An Empirical Analysis of Benefits. *Journal of Emerging Technologies in Accounting*. 1 (1): 63-72.

Olsen, C. and St George, D. (2004). Cross-Sectional Study Design and Data Analysis.

Oliveira, T. and Martins, M. F. (2011). Literature Review of Information Technology Adoption Models at Firm Level. *Electronic Journal of Information Systems Evaluation*. 14 (1):

Ononiwu, C. G. (2013). A Delphi Examination of Inhibitors of The Effective Use of Process Industry Enterprise Resource Planning (ERP) Systems: A Case Study

of New Zealand's Process Industry. *Electronic Journal of Information Systems Evaluation.* 16(2):

Orozco, J., Tarhini, A., Masa'deh, R. (2015). A Framework of IS/Business Alignment Management Practices to Improve the Design of IT Governance Architectures. *International Journal of Business and Management, 10*(4).

Pallant, J. (2010). *SPSS survival manual: A Step By Step Guide To Data Analysis Using SPSS*: Open University Press.

Pan, S.L. and Lee, J.N. (2003). Using e-CRM for a Unified View of the Customer. Communications of the ACM, Vol. 46 No. 4. 95-99.

Pan, M.-J. and Jang, W.-Y. (2008). Determinanats of the Addoption of Enterprise Resource Planning Whithin the Technology-Organozation-Environment Framework: Taiwans' communications company. *Journal of Computer information systems.* 48(3):

Panorama Consulting Solutions. (2012). ERP Report. from http://Panorama-Consulting.com/resource-center/2012-erp-report/.

Panorama Consulting Solutions. (2014). ERP Report. from http://Panorama-Consulting.com/resource-center/2014-erp-report/.

Panorama Consulting Solutions. (2015). ERP Report. from http://Panorama-Consulting.com/resource-center/2015-erp-report/.

Parr, A.N., and Shanks, G. (2000). A Model of ERP Implementation. *Journal of Information Technology*, 15:289-303.

Paradice, D. (2010). Emerging Systems Approaches in Information Technologies*: Concepts, Theories and Applications*. Hershey, PA: IGI Global.

Peng, M., Sun, S., Pinkham, B. and Chen, H. (2009). The Institution-Based View as a Third Leg for a Strategy Tripod. *The Academy of Management Perspectives*, Vol. 23 No. 3, 63-81.

Perera, H. and Costa, W. (2008). Analytic Hierarchy Process for Selection of ERP Software for Manufacturing Companies. *Vision: The Journal of Business Perspective.* 12(4): 1-11.

Peslak, A. R., Subramanian, G. H. and Clayton, G. E. (2007). The Phase of ERP Software Implementation and Maintenance: A Model for Predicting Preferred ERP Use.*Journal of Computer information systems*. 48 (2):

Peter, J. P. (1981). Construct validity: A Review of Basic Issues and Marketing Practices. *Journal of Marketing Research*, 133-145.

Peterson, R. A. (1994). A Meta-Analysis of Cronbach's Coefficient Alpha. *Journal of Consumer Research*, 381-391.

Pine, J.B.I.I. (1993) *Mass Customization: The New Frontier in Business Competition.* Harvard Business School Press, Boston, MA.

Plant, R. and Willcocks, L. (2007). Critical Success Factors in International ERP Implementations: A Case Research Approach. *Journal of Computer Information Systems*, 47(3): 60

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y. and 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.

Porter, M.E. and Millar, V.E. (1985). How Information Gives You Competitive Advantage. *Harvard Business Review*, 63, 149–160.

PressTV. (2010). *Iran Ranks 5th on OICA Growth Chart*. Agust 18.

PressTV. (2015). Fromhttp://presstv.com/Detail/2015/03/04/400257/Iran-among-top-20-auto-producers.

Project Management Institute (PMI) (2003). *Construction Extension*, USA: Project Management Institute.

Purvis, R. L., Sambamurthy, V., and Zmud, R. W. (2001). The Assimilation of Knowledge Platforms in Organizations: An Empirical Investigation. *Organization Science*, 12(2): 117–135.

Rackoff, N., Wiseman, C. and Ullrich, W.A. (1985). Information Systems for Competitive Advantage; Implementation of a Planning Process. *MIS Quarterly*, 9, 285–294.

Rajagopalan, B., York, K. M., Doane, D. P. and Tanniru, M. (2007). Enablers of Enterprise Systems Training Success–An Exploratory Investigation. *International Journal of Business Information Systems*. 2 (3): 250-265.

Rasli, A. (2006). *Data Analysis and Interpretation-A Handbook for Postgraduate Social Scientists (+ CD).* Penerbit UTM.

Rathman, R.G., Johnsen, J. and Wen, H.J. (2005). Alignment of Business Strategy and IT Strategy: A Case Study of a Fortune 50 Financial Services Company. *Journal of Computer Information Systems,* 45(2): 1-8.

Ravichandran, T. (2005). Organizational Assimilation of Complex Technologies: An

Empirical Study of Component Based Software Development. *IEEE Transactions on Engineering Management*, 52(2): 249-268.

Raymond, L. and Uwizeyemungu, S. (2007). A Profile of ERP Adoption in Manufacturing SMEs. *Journal of Enterprise Information Management.* 20(4): 487-502.

Robey. D, Ross. J, Boudreau. M. (2002). Learning to Implement Enterprise Systems: An Exploratory Study of the Dialectics of Change, *Journal of Management Information Systems* 19 (1): 17–46.

Rogers, E.M. (1995). *Diffusion of innovations* (4th Ed.). New York: Free Press.

Ross, J.W. (1998).*The ERP Revolution: Surviving Versus Thriving* (*Centre for Information Systems Research*, Sloan School of Management).

Ross, J. W., Vitale, M. (2000). The ERP Revolution: Surviving Versus Thriving. *Information Systems Frontiers*, 2(2): 233–241.

Ruane, J. (2005). Essentials of Research Methods: *A Guide to Social Research*.

Rungtusanatham, M., Anderson, J. C. and Dooley, K. J. (1999). Towards measuring the "SPC implementation/practice" construct: Some evidence of measurement quality. *International Journal of Quality & Reliability Management*. 16 (4), 301-329.

Sammon, D., Adam, F. and Carton, F. (2003). Benefit Realisation Through ERP: The Re-Emergence of Data Warehousing. *Electronic Journal of Information Systems Evaluation.* 6(2): 155-164.

SAPCO (2008). *Iran Automotive Industry's Market Shares*. at the Way Back Machine (archived June 17).

Sarker, S. and Lee, A. S. (2003). Using a Case Study to Test the Role of Three Key Social Enablers in ERP Implementation. *Information & Management*. 40 (8): 813-829.

Sarkis, J. and Sundarraj, R. (2003). Managing Large-Scale Global Enterprise Resource Planning Systems: A Case Study At Texas Instruments. *International Journal of Information Management.* 23(5): 431-442.

Satyan, E. (2003). *Focus: Enterprise Apps: Moving Up to ERP*. Retrieved from www.dqindia.com/content/cio_handbook/103021901.asp.

Saunders, M. N., Saunders, M., Lewis, P. and Thornhill, A. (2011). *Research Methods For Business Students, 5/e.* Pearson Education India.

Saud, S. (2000). The Factors That Affect the Implementation of ERP in the International Persian Gulf Statesand United States Companies with Special Emphasis on SAP Software, *Doctoral Thesis of Industrial Technology*, University of Northern Iowa.

Scalle, C. X. and Cotteleer, M. J. (1999). *Enterprise Resources Planning (ERP).* Harvard Business School Publishing, Boston MA.

Scheer, A.-W. and Habermann, F. (2000). Enterprise Resource Planning: Making ERP A Success. *Communications of the ACM*. 43 (4): 57-61.

Scheuren, F. (2004). What is a Survey. *Retrieved December, 21, 2004.*

Schniederjans, D. and Yadav, S. (2013). Successful ERP Implementation: An Integrative Model. *Business Process Management Journal.* 19(2): 364-398.

Scott, J.E., Vessey, I. (2000). Implementing Enterprise Resource Planning Systems: The Role of Learning from Failure. *Information Systems Frontiers*, *2*(2): 213-232.

Sedera, D. and Dey, S. (2006). *Multi-Stakeholder Assessment of Critical Success Factors: Insights from the World's Fastest SAP R/3 Implementation.* In: Association for Information Systems.

Sedera, D. and Gable, G. G. (2004). *A Factor and Structural Equation Analysis of the Enterprise Systems Success Measurement Model.*In: Association for Information Systems.

Sekaran, U. (2006). *Research Methods for Business*:*A Skill Building Approach*. John Wiley & Sons.

Sekaran, U. (2010). *Research Methods for Business: A Skill Building Approach*(5 ed.): John Wiley & Sons.

Sekaran, U. and Bougie, R. (2013). *Research Methods for Business: A Skill Building Approach.* John Wiley & Sons.

Shang, S. and Seddon, P. (2003). Assessing and Managing the Benefits of Enterprise Systems: The Business Manager's Perspective. *Information Systems Journal*, 12(4): 271- 299

Shanks. G, Parr. A, B. Hu. B, Corbitt. B. J, Thanasankit. T, Seddon. P. (2001). Differences in Critical Success Factors in ERP Systems Implementation in Australia and China: A Cultural Analysis. *European Conference on Information Systems*, Melbourne, Australia.

Shanks, G. (2000). A Model of ERP Project Implementation. *Journal of information Technology*, 15(4): 289-303.

Shao, Z., Feng, Y. and Liu, L. (2012). The Mediating Effect of Organizational Culture and Knowledge Sharing on Transformational Leadership and Enterprise Resource Planning Systems Success: An Empirical Study in China. *Computers in Human Behavior*, 28(6), 2400-2413.

Shapiro, S. S. and Wilk, M. B. (1965). An Analysis of Variance Test for Normality (Complete Samples). *Biometrika*, 52(3/4): 591-611.

Shaul, L. and Tauber, D. (2013). Critical Success Factors in Enterprise Resource Planning Systems: Review of the Last Decade. *ACM Computing Surveys (CSUR).* 45(4): 55.

Shehab, E., Sharp, M., Supramaniam, L. and Spedding, T. A. (2004). Enterprise Resource Planning: An Integrative Review. *Business Process Management Journal.* 10(4): 359-386.

Sheikholeslami, Ali (2010). *Iran Sells 18% of Saipa Automaker for $1.6 Billion, Tehran Exchange Says*. Bloomberg.

Sherer. S. A, Alter. S. (2004). Information System Risk and Risk Factors: Are They Mostly About Information Systems. *InCommunicationsof the Association of Information Systems*, 14: 29-64

Sia, S. K., Tang, M., Soh, C. and Boh, W. F. (2002). Enterprise Resource Planning (ERP) Systems As a Technology of Power: Empowerment or Panoptic Control? *ACM Sigmis Database.* 33(1): 23-37.

Siau, K. and Messersmith, J. (2003). Analyzing ERP Implementation at a Public University Using the Innovation Strategy Model. *International Journal of Human-Computer Interaction*, 16(1): 57-80.

Sieber, T., Siau, K., Nah, F. and Sieber, M. (2000). SAP Implementation at the University of Nebraska. *Journal of Information Technology Cases and Applications*, 2(1): 41-72.

Soh, C., Kien, S.S., Tay-Yap, J. (2000). Cultural Fits and Misfits: Is ERP a Universal Solution? *Communications of the ACM, 43*(4): 47-51.

Soh, C., Kien Sia, S., Fong Boh, W. and Tang, M. (2003). Misalignments in ERP Implementation: A Dialectic Perspective. *International Journal of Human-Computer Interaction*, 16(1): 81-100.

Somers, T. M., Nelson, K. G. (2004). The Impact of Strategy and Integration Mechanisms on Enterprise System Value: Empirical Evidence from Manufacturing Firms.*European Journal of Operational Research*, 146(2): 315–338.

Somers, T. M., Nelson, K. G. (2001). The Impact of Critical Success Factors across the Stages of Enterprise Resource Planning Implementations. *In Proceedings of the 34th Hawaii International Conference on System Sciences*, Hawaii.

Sousa, J.E., Collado, J.P. (2000). Towards the Unification of Critical Success Factors for ERP Implementations. *10th. Annual Business Information Technology (BIT) Conference, Manchester*, p. 9.

Stratman, J. K. and Roth, A. V. (2002). Enterprise Resource Planning (ERP) Competence Constructs: Two-Stage Multi-Item Scale Development and Validation*. *Decision Sciences.* 33(4): 601-628

Sumner. M. (1999). Critical Success Factors in Enterprise Wide Information Management Systems Projects: *Proceedings of theAmericas Conference on Information Systems* (AMCIS)

Sun, A. Y., Yazdani, A. and Overend, J. D. (2005). Achievement Assessment For Enterprise Resource Planning (ERP) System Implementations Based On Critical Success Factors (CSFs). *International Journal of Production Economics*. 98 (2): 189-203.

Suganthalakshmi. T, Mothuvelayuthan. C (2012). Grouping of Critical Success Factors for ERP Implementations. *International Journal of Multidisciplinary Research* Vol.2 Issue 4, April 2012, ISSN 2231 5780 www.zenithresearch.org

Swanson, E. B., Ramiller, N. C. (2004). Innovating Mindfully with Information Technology.*MIS Quarterly*, 28(4): 553–583.

Szewczak, E. (2009). *Selected Readings on the Human Side of Information Technology*: Information Science Reference.

Tabachnick, B. G. and Fidell, L. (2012). *Using Multivariate Statistics: International Edition*: Pearson.

Tallon, P.P., Kraemer, K.L. and Gurbaxani, V. (2000). Executives' Perceptions of the Business Value of Information Technology: A Process-Oriented Approach. *Journal of Management Information Systems*, 16, 145–173.

Tarafdar, M. and Roy, R. K. (2003). Analyzing the Adoption of Enterprise Resource Planning Systems in Indian Organizations: A Process Framework. *Journal of Global Information Technology Management.* 6(1).

Tarhini, A., Ammar, H., Tarhini, Ra'ed Masa'deh (2015). Analysis of the Critical Success Factors for Enterprise Resource Planning Implementation from Stakeholders' Perspective: A Systematic Review. *International Business Research*; *Published by Canadian Center of Science and Education.* Vol. 8, No. 4

Tashakkori, A. and Teddlie, C. (1998). *Mixed methodology: Combining Qualitative and Quantitative Approaches.* SAGE Publications, Incorporated.

Teltumbde, A., Tripathy, A., and Sahu, A.K. (2002). Bharat Petroleum Corporation Limited (BPCL). *Vikalpa, 27*(3): 45-58.

Tenenhaus, M., Vinzi, V. E., Chatelin, Y.-M. and Lauro, C. (2005). PLS Path Modeling. *Computational statistics & data analysis*, 48(1): 159-205.

Thabane, L., Ma, J., Chu, R., Cheng, J., Ismaila, A., Rios, L. P., Robson, R., Thabane, M., Giangregorio, L. and Goldsmith, C. H. (2010). A Tutorial on Pilot Studies: The What, Why and How. *BMC medical research methodology*, 10(1)

Ticehurst, G. and Veal, A. (2000). *Business Research Methods*. Frenchs Forest, Australia: Longman.

Tornatzky, L. G. and Fleischer, M. (1990). *The Processes of Technological Innovation.*Lexington: Lexington Books.

Teo, H. H., Wei, K. K., and Benbasat, 1. (2003). Predicting Intention to Adopt Inter-Organizational Linkages: An Institutional Perspective. *MIS Quarterly*, 27(1): 19-49.

Teo, T.S.H, Ranganathan, C. and Dhaliwal, J. (2006). Key Dimensions of Inhibitors for the Deployment of Web-Based Business-to-Business Electronic Commerce. *Engineering Management, IEEE Transactions*, 53(3): 395- 411.

Thong, J. Y.L. (1999). An Integrated Model of Information Systems Adoption in Small Business.*Journal of Management Information Systems*, 15(4): 187-214.

Trochim, W. M. and Donnelly, J. P. (2008). *Research Methods Knowledge Base.* Atomic Dog/Cengage Learning Mason, OH.

Tsai, W. H., Chien, S. W., Fan, Y. W., and Cheng, J. (2004). A Survey of ERP System Implementation inTaiwan.*In Proceedings of the 8th Pacific Asia Conference on Information Systems*. 1699–1712.

Umble, E.J., Haft, R.R. and Umble, M.M. (2003). Enterprise Resource Planning Implementation Procedures and Critical Success Factors. *European Journal of Operations Research*, 146(2): 241-257.

Umble, E.J., Umble, M.M. (2002). Avoiding ERP Implementation Failure. *Industrial Management, January/February,* 25-33.

Urbach, N. and Ahlemann, F. (2010). Structural Equation Modeling in Information Systems Research Using Partial Least Squares. *Journal of Information Technology Theory and Application*. 11(2): 5-40.

Van Hau, T. T., Kuzic, J. (2010). *Change Management Strategies for the Successful Implementation of Enterprise Resource Planning Systems*. Knowledgeand Systems Engineering (KSE), Second International Conference, IEEE, 178-182.

Van Loon, A. J. M., Tijhuis, M., Picavet, H. S. J., Surtees, P. G. and Ormel, J. (2003). Survey Non-Response in the Netherlands: Effects on Prevalence Estimates and Associations.*Annals of epidemiology*, 13(2): 105-110.

Van Teijlingen, E. and Hundley, V. (2001). The importance of pilot studies. *Social research update.* (35): 1-4.

Verville. J, Bernadas. C, Halingten. A, (2005). So You Are Thinking of Buying an ERP. Ten Critical Factors for Successful Acquisitions. *Journal of Enterprise Information Management.* 18 (6) 665–677.

Victor, B. Boynton, A.C. (1998) *Invented Here.* Harvard Business School Press, Boston, MA.

Vilpola, I. (2008). *Applying Use-Centered Design in ERP Implementation Requirements Analysis*(Publication No. 739). Tampere, Finland: Tampere University of Technology. Retrieved from http://URN.fi/URN:NBN:fi:tty-200809051007

Vilpola, I. H. (2008). A Method For Improving ERP Implementation Success by the Principles and Process of User-Centred Design. *Enterprise Information Systems.* 2(1): 47-76.

Vinzi, V. E. (2010). *Handbook of Partial Least Squares: Concepts, methods and applications*: Springer.

Vosburg, J. and Kumar, A. (2001). Managing Dirty Data in Organizations Using ERP: Lessons from a Case Study.*Industrial Management & Data Systems.* 101(1): 21-31.

Wagner, E. L. and Newell, S. (2007). Exploring The Importance of Participation in the Post-Implementation Period of an ES Project: A Neglected Area. *Journal of the Association for Information Systems*, 8(10): 32.

Wallace, T. F. dm Kremzar, Michael H. (2001). ERP Making It Happen: The Implementor's Guide toSuccess with Enterprise Resource Planning.

Wang, E. T. G.,Chen, J. H. F. (2006). Effects of Internal Support and Consultant Quality on the Consulting Process and ERP System Quality. *Decision Support Systems*, 42(2): 1029–1041.

Wang, E.T.G., Klein, G. and Jiang. J.J. (2006). ERP Misfit: Country of Origin and Organizational Factors. *Journal of Management Information Systems,* 23(1), 263-292.

Wang, E. T., Shih, S.-P., Jiang, J. J. and Klein, G. (2008). The Consistency Among Facilitating Factors and ERP Implementation Success: A Holistic View of Fit. *Journal of Systems and Software*, 81(9): 1609-1621.

Washington Post (2013), Iran's Automakers Stalled by Sanctions. October 14. *From* www.washingtonpost.com

Weill, P. Broadbent, M. (1998). *Leveraging the New Infrastructure: How Market Leaders Capitalize on Information Technology.* Harvard Business School Press, Boston, MA.

Wenrich, K. and Ahmad, N. (2009). Lessons Learned During a Decade of ERP Experience: A Case Study. *International Journal of Enterprise Information Systems (IJEIS).* 5(1): 55-73.

White, R. E. (2008). *Post-Implementation Evaluation of Enterprise Resource Planning (ERP) Systems.* University of North Texas.

Willis, T. H. and Willis-Brown, A. H. (2002). Extending the Value of ERP.*Industrial Management & Data Systems.* 102(1): 35-38.

Wilson, C. V. (2012). *Postimplementation Planning and Organizational Structure of Enterprise Resource Planning Systems.* In: Walden University.

Worrell, J. L. (2008). *Running The ERP Marathon: Enhancing ERP-Business Fit in the Post-Implementation Phase.* ProQuest.

Worthen, B. (2002). Nestle's ERP Odyssey: Nestle USA's Costly and Protracted Struggle With Its SAP Project Is A Cautionary Tale for any Company Intent on an Enterprise Wide Implementation, *CIO, 15*(15): 62-70.

Wu, I. L., Chuang, C. H. (2010). Examining the Diffusion of Electronic Supply Chain Management with External Antecedents and Firm Performance: *A multi-stage analysis. Decision Support Systems*, 50: 103–115.

Wu, J.-H. and Wang, Y.-M. (2006). Measuring ERP Success: The Ultimate Users' View. *International Journal of Operations & Production Management.* 26(8): 882-903.

Xu, H., Nord, J. H., Brown, N. and Nord, G. D. (2002). Data Quality Issues in Implementing an ERP. *Industrial Management & Data Systems*. 102 (1): 47-58.

Yeganeh, H. and Su, Z. (2008). An Examination of Human Resource Management Practices in Iranian Public Sector. *Personnel Review,* Vol. 37 No. 2, 203-210.

Yamane, T. (1967). Elementary sampling theory.

Yen, H. R. and Sheu, C. (2004). Aligning ERP Implementation with Competitive Priorities of Manufacturing Firms: An exploratory study. *International Journal of Production Economics*. 92 (3): 207-220.

Yingjie, J. (2005). *Critical Success Factors in ERP Implementation in Finland*. Swedish School of Economics and Business Administration, Finland.

Yilmaz, K., Altinkurt, Y. and Cokluk, O. (2011). Developing the Educational Belief Scale: The Validity and Reliability Study. *Educational Sciences: Theory and Practice*. 11(1): 343-350.

Young, R., Jordan, E. (2008). Top Management Support: Mantra or Necessity? *International Journal of Project Management*, 26(7): 713–725.

Yusuf, Y., Gunasekaran, A. and Abthorpe, M. S. (2004). Enterprise Information Systems Project Implementation: A Case Study of ERP in Rolls-Royce. *International Journal of Production Economics.* 87(3): 251-266.

Zhang, Z., Matthew, K.O.L, Huang, P., Zhang, L. and Huang, X. (2005). A Framework of ERP Systems Implementation Success in China: An Empirical Study. *International Journal Production Economics,* 98(1): 56-80.

Zhen Shao, Yuqiang Feng, Luning Liu (2012). The Mediating Effect of Organizational Culture and Knowledge Sharing on Transformational Leadership and Enterprise Resource Planning Systems Success: An Empirical Study in China. *Computers in Human Behavior* 28:2400–2413

Zhu K, Kraemer KL, Xu Sand Dedrick J (2004). Information Technology Payoff in E-Business Environments: An International Perspective on Value Creation of E-

Business in the Financial Services Industry. *Journal of Management Information Systems*, 21(1): 17-54

Zhu, K., Kraemer, K. L. (2005). Post-Adoption Variations in Usage and Value of E-Business by Organizations: Cross-Country Evidence from the Retail Industry. *Information Systems Research*, 16(1): 61–84.

Zhu K., Kraemer, K. and Xu, S. (2006). The Process of Innovation Assimilation by Firms in Different Countries: A Technology Diffusion Perspective on E-Business. *Management Science,* 52(10): 1557-1576.

Zhu, K. and K. Kraemer, K.L. (2003). E-Commerce Metrics for Net-Enhanced Organizations: Assessing the Value of E-Commerce to Firm Performance in the Manufacturing Sector. *Information Systems Research,* 13(3): 275-295.

Zhu, Y., Li, Y., Wang, W. Q., and Chen, J. (2010). What Leads To Post-Implementation Success of ERP? An Empirical Study of the Chinese Retail Industry. *International Journal of Information Management*, 30(3): 265–276.

Zikmund, W. G., Babin, B. J., Carr, J. C. and Griffin, M. (2010). *Business Research Methods. (8nd ed.).* Canada: South-Western publisher.

Zikmund, W., Babin, B., Carr, J. and Griffin, M. (2012). *Business Research Methods*: Cengage Learning.