

ORGANIZATIONAL CAPABILITIES AND
THE SOFTWARE PROJECT SUCCESS IN
PUBLIC SECTORS: PROCESS INNOVATION
AS A MEDIATOR

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STUDENT'S DECLARATION

I hereby declare that the work in this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti Malaysia Pahang or any other institutions.

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Thesis submitted in fulfillment of the requirements
for the award of the degree of
Doctor of Philosophy
(Technology Management)

Faculty of Industrial Management
UNIVERSITI MALAYSIA PAHANG

NOVEMBER 2019

ACKNOWLEDGEMENTS

Bismillah ir-Rahman ir-Rahim...

First of all, alhamdulillah, in the name of Allah the All Mighty, the Most Compassionate, the Most Merciful, Knowledgeable and Worthy of all praises. I am most thankful to Him for His blessings in the completion of this thesis.

I would like to thank to my supervisor, Dato' Dr Yusserrie Bin Zainuddin for his commitment, valuable guidance, and comments in assisting me to complete this thesis. Without his guidance, this study would not have been possible.

I also acknowledge Prof. Ramayah Thurasamy and Dr Shrikant Krupasindhu Panigrahi for their helps and advises throughout my thesis completion. I am also indebted to Public Service Department of Malaysia for funding my Ph.D. study and the organizations' representatives who were very co-operative in my data collection especially IT managers in the Malaysian public sectors.

Finally, and the most importantly, my sincere goes to my family members for all their support and prayers especially to my children, Hakimi, Hairie, Haris, Damia, Harraz and Hayyan. And also not forget to the in memory of my beloved parents. They all have been the motivational force for me to achieve this task. Once again thank you so much.

ABSTRAK

Membangunkan projek perisian merupakan satu proses yang sukar dan sering melebihi kos dan masa yang ditetapkan. Boleh dikatakan terlalu banyak penekanan terhadap model-model pembangunan projek perisian yang menjurus kepada kemahiran teknikal pengkodan dan debugging yang menyebabkan kepentingan perancangan strategik dan reka bentuk perisian diabaikan. Selain itu, semakin tinggi perubahan dinamik dan perubahan persekitaran terhadap sesuatu projek perisian, semakin tinggi keperluan strategik sesuatu projek perlu dilihat bagi mengatasi perubahan ini secara efisien dan berkesan. Kajian penyelidikan yang dijalankan ini adalah bagi memastikan projek perisian yang dibangunkan adalah mengikut masa dan kos yang diperuntukkan. Berdasarkan kerja-kerja kesusasteraan yang lalu, didapati bahawa pandangan berasaskan sumber (RBV) yang tertumpu kepada kelebihan daya saing organisasi merupakan salah satu teori pengurusan strategik utama yang dapat diterapkan untuk menjelaskan kejayaannya. Oleh itu, rangka kerja keupayaan organisasi yang dinamik yang diperkenalkan oleh Grantt dicadangkan untuk disesuaikan dengan pembangunan projek perisian sektor awam di Malaysia. Tambahan pula, inovasi merupakan satu pendekatan dalam mengekalkan kejayaan sesuatu projek berlandaskan persekitaran yang dinamik dan sentiasa berubah. Oleh itu, proses inovasi merupakan strategik utama yang digunakan sebagai kelebihan daya saing dalam persekitaran pembangunan projek perisian ini. Dalam kajian ini, satu reka bentuk penyelidikan kuantitatif berasaskan paradigma positifis digunakan. Melalui Smart PLS 2.0, *bootstrapping* digunakan sebagai prosedur resampling bukan parametrik untuk menguji kesan pengantaraan pada kejayaan proses projek perisian dengan responden terdiri daripada 228 Pengurus IT sektor awam di Malaysia. Kajian ini menunjukkan bahawa untuk mencapai kejayaan sesebuah organisasi, kelebihan persaingan memainkan peranan penting di samping kepentingan keupayaan organisasi tersebut. Faktor-faktor yang dicadangkan dalam membangunkan keupayaannya organisasi adalah melalui infrastruktur IT yang terbuka dan boleh di capai oleh pengguna, penyelarasan kepakaran, dan pembangunan rancangan komunikasi. Adalah penting bagi sesebuah organisasi untuk melaksanakan proses inovasi dalam menghasilkan produk yang berkualiti tinggi, mengurangkan tempoh penyampaian perkhidmatan, meningkatkan kecekapannya, menghasilkan produk baru, dan juga mengurus pengetahuan dan maklumat kakitangan. Amalan pelaksanaan proses inovasi ini dapat menyokong keupayaan sesebuah organisasi dalam menghasilkan projek perisian yang dibangunkan mengikut masa dan kos yang telah ditetapkan.

ABSTRACT

Developing a software project is expensive and often a difficult process due to cost and schedule overrun. It can be argued that too much emphasis is placed by the recent approaches and models of the development of software projects on the technical skills of coding and debugging. Consequently, the importance of strategic planning and design of software is neglected. Furthermore, the higher the dynamic and turbulence of environmental changes posed on software projects, the more strategic the project procedures need to be in order to cope with these changes efficiently and effectively. This research study was conducted in order to ensure that software projects are developed on time and within the allocated cost. Based on past literature works, it was found that the resource-based view (RBV) of an organization's competitive advantage is one of the main strategic management theories applicable to explain its success. Therefore, the organizational capabilities framework by Grantt were proposed to be adapted into the software projects in Malaysia's public sectors. Moreover, innovation is an approach of sustaining the project's success within a dynamic and changing environment. It is the main strategic tool for a process competitive advantage in this kind of environment. In this study, a quantitative research design was adopted where a positivist paradigm was followed. Through Smart PLS 2.0, bootstrapping was used as the nonparametric resampling procedure in order to test the mediating effect on software project success process with the respondents consisting of 228 of Malaysian IT Managers in the public sectors. As a result, it was shown that in order to achieve success, competitive advantages are essential for an organization. In addition, the significance of organizational capabilities was the focus of this study. This factor may determine how IT managers make decisions to alter their organization's assets or capability bases. It was also suggested in this study that it is appropriate for an organization to develop its capabilities through the emerging IT infrastructure, coordinating expertise, and the development of communication plans. It is important for organizations to implement a process innovation strategy which can develop better-quality products, reduce the duration of service delivery, improve its efficiency, produce new products, and also manage staff knowledge and information. Besides, it is important for organizations to implement process innovation practices which support the organizational capabilities while delivering the product on time and within the cost allocated for the software projects.

TABLE OF CONTENT

DECLARATION	
TITLE PAGE	
ACKNOWLEDGEMENTS	ii
ABSTRAK	iii
ABSTRACT	iv
TABLE OF CONTENT	v
LIST OF TABLES	x
LIST OF FIGURES	xii
LIST OF SYMBOLS	xiii
LIST OF ABBREVIATIONS	xiv
CHAPTER 1 INTRODUCTION	1
1.1 Introduction	1
1.2 Background of the study	1
1.3 Research Problem	6
1.4 Research Question	8
1.5 Research Objective	9
1.6 Significance of the study	9
1.6.1 Theory Contribution	9
1.6.2 Practical Contribution	11
1.7 Definition of Key Terms	12
1.8 The Thesis Outline	13

CHAPTER 2 LITERATURE REVIEW	15
2.1 Introduction	15
2.2 ICT Projects in the Malaysian Public Sector	15
2.2.1 ICT Project Acquisition	17
2.2.2 ICT Project Approval and Implementation	18
2.3 Project Success	19
2.3.1 Four-level Project success framework	21
2.3.2 Stakeholders perceptions of project success	23
2.3.3 Software Project Management (SPM)	26
2.3.4 Software Project Success	28
2.3.5 Critical Success Factors in Software Project	31
2.4 Gaps in the Literature	34
2.5 Underpinning Theory	38
2.5.1 Concept of Strategy and Strategy Management	38
2.5.2 Overview of Strategic Management Theory	40
2.5.3 Resource-based View (RBV)	42
2.6 Organizational Capabilities	45
2.6.1 Tangible Resources	48
2.6.2 Intangible Resources	49
2.6.3 Human Resources	50
2.7 Process Innovation as Competitive Advantage	50
2.7.1 Concept of Competitive Advantage	50
2.7.2 Competitive Advantage in the Public Sector	53
2.7.3 Process Innovation as a Competitive Advantage	56
2.8 Summary	59

CHAPTER 3 RESEARCH MODEL AND HYPHOTHESES	60
3.1 Introduction	60
3.2 Conceptual Model	60
3.3 Hypotheses	62
3.3.1 Organizational Capabilities and Process Innovation	62
3.3.2 Process Innovation and Software Project Success	69
3.3.3 Organizational Capabilities, Process Innovation and Software Project Success	71
3.4 Summary	79
CHAPTER 4 METHODOLOGY	80
4.1 Introduction	80
4.2 Research Paradigm	80
4.3 Research Process	82
4.4 Research Design	84
4.4.1 Purpose of the study	85
4.4.2 Types of Investigation	85
4.4.3 Study Setting	86
4.4.4 Researcher Interference	86
4.4.5 Unit of Analysis	87
4.4.6 Time Horizon	87
4.5 Sampling Process	87
4.6 Development of Instrument	89
4.6.1 Items Generation	89
4.6.2 Operationalization of variables	90
4.7 Statistical Techniques	97

4.7.1	Structural Equation Modelling (SEM)	97
4.7.2	Smart PLS	98
4.7.3	Reflective and Formative Measurement Model	99
4.8	Analysing the Research Model using PLS-SEM	102
4.8.1	Measurement Model	102
4.8.2	Structural Model	104
4.8.3	Mediating Relationship	105
4.9	Pilot Study	107
4.10	Data Collection Method	113
4.10.1	Questionnaires	113
4.11	Ethical Consideration	115
4.12	Summary	115
CHAPTER 5 ANALYSIS AND RESULT		116
5.1	Introduction	116
5.2	Preliminary Examination of Data	116
5.2.1	Data Editing and Coding	116
5.2.2	Missing values	117
5.2.3	Normality and power size	117
5.2.4	Sample Size Requirement	118
5.2.5	Common method bias	118
5.3	Response Rate	119
5.4	Descriptive Statistic of Demographic Profile	120
5.4.1	Respondent Profile	120
5.4.2	Sample Profile	120
5.5	Descriptive Study of Instruments	122

5.5.1	Measurement Model Assessment	123
5.5.2	Internal Consistency	123
5.5.3	Indicator reliability	123
5.5.4	Convergent reliability	124
5.5.5	Discriminant Validity	124
5.6	Structural Model Assessment	128
5.6.1	Model Fit	128
5.6.2	Path Coefficients	129
5.6.3	Mediation analysis	131
5.6.4	Hypotheses Testing	136
5.8	Summary	138
CHAPTER 6 DISCUSSION IMPLICATION AND CONCLUSIONS		140
6.1	Introduction	140
6.2	Recapitulation of the Study	140
6.3	Discussion of the Findings	142
6.4	Significant implication of the research	149
6.4.1	Theoretical Contribution	149
6.4.2	Managerial Implication	151
6.5	Limitations and Future Research	154
6.6	Conclusion	156
REFERENCES		158
APPENDIX A SURVEY QUESTIONNAIRES		185
APPENDIX B NORMALITY TEST		191
APPENDIX C COMMON METHOD BIAS		192

LIST OF TABLES

Table 1.1	Digital Government Online Services in 10MP (2011-2015)	2
Table 1.2	CHAOS Report of Software Projects from 2011 to 2015	4
Table 1.3	Software Projects in Malaysia's Public Sector 2010	5
Table 2.1	The Classification of ICT Acquisition Projects	18
Table 2.2	Baccarini's Four Levels versus Shenhar's Four Dimensions	21
Table 2.3	The Processes required for achieving Time and Cost	29
Table 2.4	Software Project - Critical Success Factors (CSFs)	32
Table 2.5	Competitive Strategy	52
Table 4.1	Three Major Research Paradigms	81
Table 4.2	Total of Elements Used to Measure Each Construct	90
Table 4.3	Original and modified questionnaire elements for dependent variables	93
Table 4.4	Original and modified questionnaire elements for independent variables	94
Table 4.5	Original and modified questionnaire elements for mediating variables	96
Table 4.6	The rules of thumb between selecting CB-SEM and PLS-SEM.	98
Table 4.7	Guidelines for choosing the measurement model	100
Table 4.8	Systematic evaluation of PLS-SEM result	101
Table 4.9	Summaries of validity guideline for assessing reflective measurement model	104
Table 4.10	IT Managers Position in Malaysian public sectors	107
Table 4.11	Respondents' Demographic Information	108
Table 4.11	Continued	109
Table 4.12	The Assessment Conducted on the Research Measurement Model	109
Table 4.13	Measurement Model Result	110
Table 4.14	Discriminant Validity Result (by Fornell and Larcker's	111
Table 4.15	Cross Loadings	112
Table 5.1	Summary on the rate of returned questionnaires	120
Table 5.2	Respondents' Demographic Information	121
Table 5.3	Descriptive statistics for all indicators	122
Table 5.4	Measurement model	125
Table 5.5	Discriminant validity	126
Table 5.6	Cross loadings	127

Table 5. 7	The Assessment Conducted on the Research Measurement Model	128
Table 5. 8	Validated redundancy and predictive relavance	129
Table 5. 9	Significance testing result of the direct structural model path coefficient	133
Table 5. 10	Path coefficient result for indirect effect	134
Table 5. 11	Significance testing for direct and indirect effect of structural model	135
Table 5. 12	Summary of hypotheses testing	136

LIST OF FIGURES

Figure 1. 1	The Evolution of Malaysia's Digital Government	3
Figure 2. 1	The 9MP & 10MP Budget Allocation for ICT Projects	16
Figure 2. 2	ICT Project Approval and Implementation	19
Figure 2. 3	The Four-level Systematic Framework	23
Figure 2. 4	Software Project Management Framework	27
Figure 2. 5	Software Project Success Factors	34
Figure 2. 6	Summary of gaps found in the literature	35
Figure 2. 7	Strategic Management Theories	42
Figure 2. 8	Evolution of the RBV Theory	43
Figure 2. 9	Barney's (1991) Conceptual Model	44
Figure 2.10	Relationship among resources, organizational capabilities, competitive advantage and performance	46
Figure 2. 11	Soft and Hard Components of Innovation	57
Figure 3. 1	Research Model	61
Figure 4. 1	The main stages of research process	83
Figure 4. 2	Research design	84
Figure 4. 3	Sampling design process	88
Figure 4. 4	Reflective and Formative Diagram Constructs	100
Figure 4. 5	The path coefficient in mediation	106
Figure 4. 6	Distribution of the mediation effect	106
Figure 5. 1	The PLS Algorithm result	123
Figure 5. 2	PLS Algorithm	130
Figure 5. 3	The Bootstrapping results for the direct effects	130
Figure 5. 4	Bootstrapped indirect path for calculation	131

LIST OF SYMBOLS

R^2	Coefficient of determination
Q^2	Predictive Relevance
$a^*b - z(SE)$	Upper Limit
$a^*b + z(SE)$	Lower Limit
B	Regression Coefficients

LIST OF ABBREVIATIONS

EFA	Exploratory Factor Analysis
AVE	Average Variance Extracted
CA	Cronbach Alpha
CR	Composite Reliability
GoF	Goodness of Fit
SE	Standard Error
STD	Standard Deviation
9MP	9th Malaysian Plan
10MP	10th Malaysian Plan
PRINCE	PRojects IN Controlled Environments
PMBOK	Project Management Body of Knowledge

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