

**Attitude towards adoption of sustainable technology by  
Malaysian SMEs and its impact on organizational performance**

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## **ABSTRACT**

This research investigates organizational attitudes towards the adoption of sustainable technology and its impact on organizational performance among small and medium-sized enterprises (SMEs) in Malaysia. The current innovation management research mainly focuses on determinants affecting organization employees' attitudes. This research offers a parallel shift, focusing instead on organizational attitudes influencing adoption of sustainable technology within the SME context. Three main variables undergo in-depth examination: human attitudes, human persuasion and human ethics. As an additional edge to the theoretical research framework, government aid is a part of the antecedents of the adoption process. Historically, Malaysian SMEs are reliant on government support to ensure smooth business operations. Based on the triple bottom line model, it is perceived that adopting sustainable technology will impact on the economic, social and environmental performance of these organizations. The use of sustainable technology is increasingly driven by the demands to save resources, yield long-term cost savings, and protect the environment. Sustainable technology is currently attracting the attention of many business organizations, especially SMEs operating at the international level. Malaysia's transitional economy is an excellent example of the succession of traditional to sustainable technologies. Antecedents serving as the foundation towards the integration of these advances into Malaysian business operations are not well researched.

This study develops an advanced model of sustainable technology adoption, considering the strengths and limitations of existing models. The theoretical framework for this study is based on the theory of reasoned action (TRA), theory of planned behavior (TPB), attribution theory (AT), environmental attitudes model and the triple bottom line model. The research model of this study contains several modified variables that were not included in the existing theories. New variables are also added to the model to overcome the limitations of the current models. The advanced model combines multiple sets of factors found in previous models and incorporates factors that have been suggested in previous research. Furthermore, it incorporates additional variables found in other studies related to sustainable technology acceptance, to create a coherent model of sustainable technology adoption. The combination of factors in this study goes beyond previous research in an attempt to bring together relevant factors which can

influence innovation adoption. These variables are integrated into a single model to examine the relationships between the antecedents and adoption of sustainable technology.

The study uses quantitative methods to collect and analyze the data. Survey questionnaires were used to collect information regarding adoption of sustainable technology, and outcomes of that adoption, from Malaysian SMEs. Survey questionnaires were distributed to 3,460 randomly selected SMEs in eight districts of Malaysia. A list of SMEs was obtained from the SME Corporations Malaysia. This research used the online survey tool SurveyGizmo to email the survey instrument to target respondents. The purpose and aims of the research were explained in the email.

A total of 382 completed questionnaires were received during three months. After the filtering process, 322 questionnaires were accepted. The acquired data were analyzed through several stages in order to obtain relevant findings. SmartPLS was used to analyze the obtained data, using partial least squares – structural equation modelling (PLS-SEM) algorithm. Frequency distribution, correlation and multivariate statistical techniques were used to analyze the data. Multicollinearity and outliers tests were also conducted to ensure that there was no bias in the data. Additional analysis was conducted to explain the phenomenon, by providing the importance–performance matrix analysis and modelling categorical moderator effects.

After proposing and testing the advanced theoretical research model, the results showed three different PLS-SEM path analyses: adoption as the dependent variables, adoption as independent variables, and organizational characteristics as a control variables. The results indicated that affective and altruism had positive and significant effects on the adoption of sustainable technology. This research captured organizational perceptions of the adoption of sustainable technology and the impact of adoption on performance of Malaysian SMEs. This research broadens our understanding of the antecedents affecting adoption of sustainable technology in Malaysian SMEs. From a practical point of view, the research provides guidelines for SMEs and government policy makers with regard to sustainable technology adoption in Malaysia.

Although the theoretical research model developed in this study is relatively advanced, further development of the model would be necessary to examine variables set in a different context. As this research is limited to Malaysian SMEs, future research should adjust the model to suit the needs of any other studies beyond Malaysia. Furthermore, longitudinal research would be appropriate to capture the changes that may occur over time and space in terms of antecedents

and outcomes of adoption of sustainable technology. The research model tested in this study can be applied other developing countries to compare the findings with those of the current study relating to adoption and outcomes of sustainable technology in the SME sector.

## Table of content

Chapter	Content	Page
<b>Chapter One</b>	<b>Introduction</b>	
	1.1 Background of the Problem	1
	1.2 Definitions of Critical Terms	5
	1.3 Research Gap	6
	1.4 Significance of the Study	8
	1.5 Research objectives	9
	1.6 Research Questions	9
	1.7 Contribution of the Study	10
	1.8 Structure of the thesis	12
	1.9 Conclusion	13
<b>Chapter Two</b>	<b>Literature Review</b>	
	2.1 Introduction	15
	2.2 Definition of the Technological Innovation	16
	2.2.1 Incremental Innovation	17
	2.2.2 Modular Innovation	18
	2.2.3 Architectural Innovation	18
	2.2.4 Radical Innovation	19
	2.3 Definition of Sustainable Technology	21
	2.3.1 Sustainable Living	24
	2.3.2 Sustainable Resource	25
	2.3.3 Sustainable Process	25
	2.3.4 Sustainable Product	26
	2.4 Malaysian Sustainable Technology	27
	2.5 The Benefits of Sustainable Technology	30
	2.8 Malaysian Small and medium organizations	31
	2.9 Conclusion	33
<b>Chapter Three</b>	<b>Theoretical Review</b>	
	3.1 Introduction	35
	3.2 Theoretical Framework	35
	3.2.1 Theory of Reasoned Action	35
	3.2.2 Theory of Plan Behavior	37
	3.2.3 Attribution Theory	38
	3.2.4 Thompson & Barton's (1994) Environmental Attitudes Model	39
	3.2.5 Elkington's (1994) The Three Bottom Line	40
	3.3 Conclusion	41
<b>Chapter Four</b>	<b>Research Model and Hypothesis Development</b>	
	4.1 Introduction	43
	4.2 Development of the Theoretical Model	43
	4.2.1 Outline of the Research Model	43
	4.2.2 Proposed Advance Research Model	45
	4.3 Hypothesis Development	45
	4.3.1 Organizational Attitudes	45

	- Affective Attitude	46
	- Cognitive Attitudes	46
	- Behavioral Attitudes	47
	4.3.2 Organizational Persuasions	47
	- Credibility	48
	- Sentimental	48
	- Reasoned	49
	4.3.3 Organizational Ethical Belief	49
	- Anthropocentric	50
	- Eco-Centric	50
	- Altruistic	51
	4.3.4 Governmental Aid	51
	- Government Policies	51
	- Government Supports	52
	- Government Subsidies	53
	4.3.5 Organizations' Characteristics	53
	4.3.4 Economic Performance	54
	- Profitability	54
	- Cost Savings	55
	- Competitiveness	55
	- Market Share	56
	4.3.5 Social Performance	56
	- Relation to Society	57
	- Philanthropy	57
	4.3.6 Environmental Performance	58
	- Health Safety	58
	- Resources Sufficiency	59
	4.4 Conclusion	59
<b>Chapter Five</b>	<b>Research Methodology</b>	
	5.1 Introduction	61
	5.2 Research Design	61
	5.2.1 Scope of the Study	62
	5.2.2 Sustainable Technology as a Concept	62
	5.3 Quantitative Research	63
	5.3.1 Sample size of the Study	64
	5.3.2 Research Instrument	64
	5.3.3 Variables of the Study	65
	5.4 Definition of the Measures of Variables	66
	5.4.1 Organizational Attitudes	66
	5.4.2 Organizational Persuasions	68
	5.4.3 Organizational Ethical Belief	69
	5.4.4 Governmental Aids	70
	5.4.5 Economic Performance	71
	5.4.6 Social Performance	73
	5.4.7 Environmental Performance	74
	5.4.8 Adoption of Sustainable Technology	74
	5.5 Validity and Reliability of the Study	76
	5.5.1 Pilot Study	76
	5.6 Data Collection Process	77

	5.7 Data Analysis	77
	5.8 Conclusion	79
<b>Chapter Six</b>	<b>Data Analysis</b>	
	6.1 Introduction	81
	6.2 Analysis of Characteristics Data	81
	6.3 Organizations' Sustainable Technology Adoption	83
	6.3.1 Frequency of Use on Sustainable Technology	84
	6.3.2 Duration of Use on Sustainable Technology	84
	6.3.3 Level of Usage on Sustainable Technology	85
	6.3.4 Different Type of Sustainable Technology	85
	6.3.5 Sophisticated of Sustainable Technology	86
	6.4 Cross-Tabulation for Adoption according to Characteristics	86
	6.4.1 Frequency by Types of Organizations	86
	6.4.2 Duration by Types of Organizations	87
	6.4.3 Usage Level by Types of Organizations	88
	6.4.4 Different Type by Types of Organizations	89
	6.4.5 Sophisticated by Types of Organizations	90
	6.4.6 Frequency by Age of Organizations	91
	6.4.7 Duration by Age of Organizations	92
	6.4.8 Usage Level by Age of Organizations	94
	6.4.9 Different Type by Age of Organizations	95
	6.4.10 Sophisticated by Age of Organizations	97
	6.4.11 Frequency by Total of Employee	98
	6.4.12 Duration by Total of Employee	99
	6.4.13 Usage Level by Total of Employee	100
	6.4.14 Different Type by Total of Employee	101
	6.4.15 Sophisticated by Total of Employee	102
	6.4.16 Frequency by Annual Sales Turnover	103
	6.4.17 Duration by Annual Sales Turnover	104
	6.4.18 Usage Level by Annual Sales Turnover	105
	6.4.19 Different Type by Annual Sales Turnover	106
	6.4.20 Sophisticated by Annual Sales Turnover	107
	6.5 Inter-Correlations among Study Variables	108
	6.5.1 Relationship between Adoption and Variables	109
	6.6 Reliability and Validity of the Instruments	117
	6.6.1 Evaluation of Cronbach's Alpha Test	117
	6.6.2 Evaluation of Reflective Measurement Model	118
	6.6.3 Test of Multicollinearity	126
	6.6.4 Test for Outliers	127
	6.7 Evaluation of the Theoretical Research Framework	128
	6.8 Coefficient of Determination ( $R^2$ )	132
	6.9 Blindfolding and Predictive Relevance ( $Q^2$ )	133
	6.10 Importance-Performance Matrix Analysis	135
	6.11 Modelling Categorical Moderator Effects	138
	6.12 Conclusion	146

<b>Chapter Seven</b>	<b>Discussions and Implications</b>	
	7.1 Introductions	147
	7.2 Discussion of Analysis Results	147
	7.2.1 Discussion of Analysis (Moderator Effect)	153
	7.2.2 Performance and Importance of Variables	158
	7.3 Implication of the Data Findings	159
	7.3.1 Implication towards Government	160
	7.3.2 Implication towards NGOs	161
	7.3.3 Implication towards NPOs	161
	7.3.4 Implication towards SMEs	162
	7.4 Implication of theoretical advancement	162
	7.5 Conclusion	163
<b>Chapter Eight</b>	<b>Conclusion and Recommendation</b>	
	8.1 Introduction	165
	8.2 Summary of Research	165
	8.3 Conclusion for Sustainable Technology Adoption	166
	8.4 Contribution to Knowledge	170
	8.4.1 Theoretical Research Model Development	170
	8.4.2 Examining an Important Aspect	170
	8.4.3 Implications of Method and Methodology	170
	8.5 Limitation of Study	171
	8.6 Recommendation for Future Research	171
	8.7 Conclusion	173
<b>References</b>		175-204
<b>Appendices</b>		205-216

## List of Figures

Figure 2.1: Henderson & Clark (1990) Innovation Model	17
Figure 3.1: Theory of Reasoned Action (Source: Fishbein and Ajzen 1975; 1980)	35
Figure 3.2: Theory of Planned Behavior (Source: Ajzen, 1991)	37
Figure 3.3: Attribution Theory (Source: Heider, 1958)	38
Figure 3.4: The Three Bottom Line (Source: Elkington, 1994)	40
Figure 4.1: The outline of the research model	44
Figure 3.2: Theoretical Research Framework	45
Figure 6.1: Usage Level by Types of Organizations	87
Figure 6.2: Duration Usage by Types of Organizations	88
Figure 6.3: Usage Level by Types of Organizations	89
Figure 6.4: Different types of Sustainable Technology by types of Organizations	90
Figure 6.5: Sophisticated usage level by types of organizations	91
Figure 6.6: Frequency of Usage by Age of Organizations	92
Figure 6.7: Duration of Usage by Age of Organizations	94
Figure 6.8: Usage Level by Age of Organizations	95
Figure 6.9: Different Type of Technology by Age of Organizations	97
Figure 6.10: Sophisticated Usage Level by Age of Organizations	98
Figure 6.11: Frequency of Usage by Total number of employees	99
Figure 6.12: Duration of Usage by Total number of employees	100
Figure 6.13: Usage Level by Total number of employees	101
Figure 6.14: Different Type of Technology by Total Number of Employees	102
Figure 6.15: Sophisticated Usage Level by Total number of employees	103
Figure 6.16: Frequency of Usage by Annual Sales Turnover	104
Figure 6.17: Duration of Usage by Annual Sales Turnover	105
Figure 6.18: Usage Level by Annual Sales Turnover	106
Figure 6.19: Different type of Technology by Annual Sales Turnover	107
Figure 6.20: Sophisticated Usage Level by Annual Sales Turnover	108
Figure 6.21: Relationship between Adoption and Affective	113
Figure 6.22: Relationship between Adoption and Cognitive	113
Figure 6.23: Relationship between Adoption and Behavioral	113
Figure 6.24: Relationship between Adoption and Credibility	113
Figure 6.25: Relationship between Adoption and Sentiment	113
Figure 6.26: Relationship between Adoption and Reasoned	113
Figure 6.27: Relationship between Adoption and Anthropocentrism	114
Figure 6.28: Relationship between Adoption and Eco-centrism	114
Figure 6.29: Relationship between Adoption and Altruism	114
Figure 6.30: Relationship between Adoption and Policies	114
Figure 6.31: Relationship between Adoption and Support	114
Figure 6.32: Relationship between Adoption and Subsidies	114
Figure 6.33: Relationship between Adoption and Profitability	115
Figure 6.34: Relationship between Adoption and Saving	115
Figure 6.35: Relationship between Adoption and Competitiveness	115
Figure 6.36: Relationship between Adoption and Market	115
Figure 6.37: Relationship between Adoption and Society	115
Figure 6.38: Relationship between Adoption and Philanthropy	115
Figure 6.39: Relationship between Adoption and Health	116
Figure 6.40: Relationship between Adoption and Resources	116
Figure 6.41: IPMA Representation of Adoption as Dependent Variables	137

Figure 6.42: IPMA Representation of Adoption as Independent Variables	138
Figure 7.1: PLS-SEM Path Theoretical Research Model	151
Figure 7.2: PLS-SEM Path Theoretical Research Model (service-oriented organizations)	154
Figure 7.3: PLS-SEM Path Theoretical Research Model (establishment of more than 20 years)	156
Figure 7.4: PLS-SEM Path Theoretical Research Model (micro enterprise)	157

## List of Tables

Table 5.1: Variables of the Study	65
Table 6.1: Respondents' Characteristics Information	81
Table 6.2: Frequency of use on sustainable technology for any related-job	84
Table 6.3: Duration of Time spend on Sustainable Technology for any Related-Job	84
Table 6.4: Organizations' Usage Level on Sustainable Technology in Any Related-Job	85
Table 6.5: Different Types of Sustainable Technology that Organizations are willing to Use	85
Table 6.6: Level of Usage of Sophisticated Sustainable Technology	86
Table 6.7: Frequency of usage by types of organizations	86
Table 6.8: Duration of Usage by Types of Organizations	87
Table 6.9: Usage Level by Types of Organizations	88
Table 6.10: Different Types of Sustainable Technology by Types of Organizations	89
Table 6.11: Sophisticated Usage Level by Types of Organizations	90
Table 6.12: Frequency of Usage by Age of Organizations	91
Table 6.13: Duration of Usage by Age of Organizations	92
Table 6.14: Usage Level by Age of Organizations	94
Table 6.15: Different Type of Technology by Age of Organizations	95
Table 6.16: Sophisticated Usage Level by Age of Organizations	97
Table 6.17: Frequency of Usage by Total number of employees	98
Table 6.18: Duration of Usage by Total number of employees	99
Table 6.19: Usage Level by Total number of employees	100
Table 6.20: Different Types of Technology by Total number of employees	101
Table 6.21: Sophisticated Usage Level by Total number of employees	103
Table 6.22: Frequency of Usage by Annual Sales Turnover	103
Table 6.23: Duration of Usage by Annual Sales Turnover	104
Table 6.24: Usage Level by Annual Sales Turnover	105
Table 6.25: Different type of Technology by Annual Sales Turnover	106
Table 6.26: Sophisticated Usage Level by Annual Sales Turnover	107
Table 6.32: Inter-Correlations among Studied Variables (Pearson's Correlation)	109
Table 6.33: Variable Means, Standard Deviations and Scale Reliability	117
Table 6.34: Discriminant Validity	122
Table 6.35: Summary of Quality Assessment	123
Table 6.36: Summary of Quality Assessment (cont.)	124
Table 6.37: Summary of Quality Assessment (Cont.)	124
Table 6.38: Test for Multicollinearity (Adoption as Dependent Variable)	126
Table 6.39: Z-score for Organizations of each Variables	127
Table 6.40: Significance Testing Results of the Structural Model Path Coefficients	131
Table 6.41: Results of R <sup>2</sup> and Q <sup>2</sup> Values	133
Table 6.42: Summary of Results	134
Table 6.43: Index Value and Total Effect (Adoption as Dependable Variable)	136
Table 6.44: Index Values and Total effects (Adoption as Independent Variables)	137
Table 6.45: Moderator Effect (Types of Organizations)	138
Table 6.46: Moderator Effect (Age of Organizations)	141
Table 6.47: Moderator Effect (Total Employees)	143
Table 6.48: Moderator Effect (Sales Turnover)	144

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