

The Effect of Change Management on Operational Excellence in Electrical and Electronics Industry: Evidence from Malaysia

ABSTRACT

The objective of this study is to investigate the effect of change management systems on achievement of operational excellence. This empirical research utilizes causal studies as it attempt to ascertain the relationship between the soft systems in the change management and operational excellence. The study focuses on the soft systems (i.e. leadership, human resource, culture) in the change management. Based on the literated syntheses, the authors develop a linkage that the change management factors are likely to contribute positively to the operational excellence of the organization. A survey of a sample of Malaysia's manufacturing leading sector, Electrical and Electronics (E&E) industry was conducted. More than 100 organizations responded to the questionnaire survey. Data was analyzed using multiple regressions. The theoretical framework guided by theoretical perspectives which is the resource-based view. There was a significant and positive relationship between transformational leadership style, human resource practices and involvement cultural trait on the achievement of operational excellence. The limitation of this study is solely confined to Malaysia E&E industry suggest a gap for future research to be explored by validating others industry. The contribution to a body of knowledge in terms of promoting better understanding of the operational excellence in Malaysian E&E industry. Practical adoption of change management may improve infrastructural decision areas of manufacturing strategy such as benchmarking, best practices, quality practices and human resource policies. Therefore, it has implication on activities concerning organization and managing change. The originality in terms of the model reflects a growing interest in extending operational management paradigms to emerging in developing country context, particularly on the knowledge on the insight of change management and operational excellence.

Keywords: Operational management; Operational excellence; Change management; Leadership; Electrical and Electronics (E&E) industry.

1. INTRODUCTION

The rapidly changing landscape in the globalized market has put new demands on organizations. In order to stay ahead of competition, companies need to re-invent itself by injecting new ideas and strategies to achieve business excellence. Excellence can be achieved by meeting or exceeding the expectations of all stakeholders. Furthermore, pursuing excellence keeps companies on right track to achieve their goals and mission. More important, companies today face incredible pressure to continually improve the products quality while simultaneously reducing cost, remain flexible, to meet short lead time delivery, everlasting legal, environmental and social requirements. The ability to achieve these goals depends to a large extent on how the managing its resources against the ongoing changing environment (Bayraktar, Jothishankar, Tatoglu, & Wu, 2007; Dunggan, 2011).

To guide organizations on their journey towards excellence, investigations have largely focused on the identification of critical variables that might better explain how organizational change can be managed to the best effect (Kanter, Stein, & Jick, 1992; Saka, 2002). Therefore, this study will provide an insight in understanding the contemporary influential systems that affect business excellence, particularly excellence in operations. The influential systems may serve as pre-conditions for any companies before embarking on the

50 management of organizational change. The systems could be categorized either a 'soft' or a
51 'hard' (Peters & Waterman, 1982).

52 In discussing the operational excellence, most of the researchers and practitioners like to
53 relate it with manufacturers. The fact is, manufacturing operation is one of the prime strategic
54 functions in any business. Manufacturing operation whether achieves its competitive position
55 and strategic potential or not solely depends on how it runs its business (Kasul & Motwani,
56 1995; Yusuff, 2004). Additionally, as manufacturing firms encounter global competition and
57 the pressure to become global, there is a demand for firm's ability to manage its
58 organizational resources with the desire to attain operational excellence at global level.

59 When review the development in the world business market such as the issues of
60 globalization, fierce competition and technology advancements, Mokhtar and Yusoff (2009)
61 suggested that manufacturing organisations in Malaysia need to have an ability to adjust and
62 change to survive the challenging business environment. Organizations need to have a new
63 set of capabilities to ensure their survival and growth in the market. Managers in a firm need
64 to build its own internal competencies to deal with organization issues, change, and
65 strategizing. In fact, Malaysian E&E industry faces significant challenges in maintaining
66 growth with growing competition from Taiwan, Singapore, China and other Asian countries.
67 The E&E's share of Malaysia's exports has gradually declined over the last 10 years (ETP
68 Annual Report, 2011). Therefore, Malaysia E&E's organizations need to have a new set of
69 capabilities to ensure their survival and growth in the market. Managers in a firm need to build
70 their own internal competencies to deal with organization at issues, changes, and strategies.

71 Operational management and performance have been an issue in both academia and
72 industry for over three decades. The literature on operational excellence is growing, but
73 Malaysian manufacturing industry is often lacking in these discussions. In Malaysia, studies of
74 business or organizational performance were focus mainly in Small Medium Enterprises
75 (SMEs) and little research solely in Electrical and Electronics (E&E) manufacturing. Among
76 the studies in Malaysia manufacturing industry included Total Quality Management (TQM)
77 practices (Arumugam, Ooi & Fong, 2008; Abdullah, Uli & Tari, 2008; Karia and Asaari, 2006)
78 and best practices (Yusuff, 2004; Anuar and Yusuff, 2011). Therefore, present study attempts
79 to understand further of Malaysia electrical and electronics firms managing change pertaining
80 to operational excellence. In fact, the electrical & electronics (E&E) industry is the leading
81 sector in Malaysia's manufacturing sector, contributing significantly to the country's
82 manufacturing output (26.94 per cent), exports (48.7 per cent) and employment (32.5 per cent)
83 (MIDA, 2012). Due to that, the finding of this study is important and may contribute to the
84 country economic.

85 **2. LITERATURE REVIEW AND THEORITICAL FRAMEWORK**

86 **2.1 Operational Excellence**

87 According to Hillman (1994), assessment of excellence is the process of evaluating an
88 organization against a model for continuous improvement in order to highlight what has been
89 achieved and what needs improving. European Foundation for Quality Management (EFQM
90 guidelines, 1999) defines excellence as "outstanding practice in managing the organization
91 and achieving results".

92 In this study, results from application of operational excellence are focused operational
93 performance and organizational sustainable performance. Operational performance reflects
94 the performance of internal operations of a company in terms of quality improvements,
95 flexibility improvement, delivery improvement, productivity improvement, cost and waste
96 reduction. The organizational sustainable performance indicator measures in present study
97 are environment performance and social performance, while the financial measures such as
98 sales growth, profit growth, return on equity (ROE), return on assets (ROA) and gearing
99 (Hubbard, 2009) will be ignored. In fact, many E&E manufacturing firms in Malaysia are
100 owned by foreign investors and may listed in the their home country, thus the respondents
101 may not be privy to the information and data related to financial performance. Although
102 performance can be measured either as financial performance or as operational performance,

operational priorities are more relevant than financial goals at the plant level (Venkatraman & Ramanujam, 1986; Brown, 2007).

Van Assen (2011) argues that operational excellence is not just a matter of cost reduction and quality improvement, but also being smart about how to handle people and resources. It requires solid change management capability and strong leadership to become operational excellence. Operational excellence is also very much dependent on employees' empowerment, ownership and a culture of continuous improvement. Its adoption and introduction usually confronts a company with the need to change the way its employees think and act.

In this study, the discussed performance indicators (quality, time, flexibility, cost and sustainability) will be used to measure firm performance in achieving operational excellence. More specific, the dependent variable, operational excellence will be operationalized by quality, flexibility, speed, cost, social and environmental in present study. Moreover, managing people, technology, leadership, strategy, structure, culture and employees' involvement to change are important variables affect the operational excellence.

2.2 Evolution of Excellence

During the last 30 years, both definition and sustainability of excellence evaluations have undergone repeated changes. Hermal and Pujol (2003) have synthesized 'excellence' into five main stages and defining each excellence stage in details in literature. The synthetic conclusion of excellence is shown in Table 1.

Table 1: Synthetic Conclusion of Excellence

Stage	Synthesized	Time	Explanations
Excellence 1.0	"Soft is important"	The early 1980s	Peters and Waterman (1982) reminded the world of professional managers that 'hard is soft'. In order to obtain hard results organizations need to take into account the soft side of the firm. Hard factors: system; structure; strategy; Soft factors: shared values; skills; style; staff.
Excellence 2.0	"Change"	1987	<i>Thriving on Chaos</i> (Peters, 1987). A new type of excellence is required: "Excellence firm don't believe in excellence – only in constant improvement and constant change".
Excellence 3.0	"Learning"	1990	<i>The Fifth Discipline</i> of Peter Senge (1990). Senge's analysis is at the base of a renewed interest for the concept of "learning organization".
Excellence 4.0	"Excellence models"	1990s	Increasing interest in "Excellence model" can be seen during the 1990s. Firms use these models to guide their efforts towards becoming "excellent" organizations.
Excellence 5.0	"Integrated development"	2000s	Difference schools of thought (e.g. social-technical, social-economic school) try to merge different approaches in order to better respond to management and organizational challenges, or the changing management paradigm.

124 *Source: Adapted from Hermal and Pujol (2003)*

125 Hermal and Pujol (2003) further explain that the series of excellence stages proposed are
 126 only tentative and could certainly be disposed in many different ways. They just hope that the
 127 different points addressed are at the base of production debate. In authors view, operational
 128 excellence via best practices in business organizations seems to be a natural evolution going
 129 forward. As present, the term of *operational excellence* is widely used approaches to measure
 130 the business excellence either by the corporations themselves, management consultants,
 131 academicians, government authorities, etc. Furthermore, the very definition of “operational
 132 excellence” has been continuously modified to accommodate for the context of rapid changes
 133 in the global business environment.

134 **2.3 Change Management**

135 Due to the fact that the future and success of every organization depends on how well
 136 manager handle change (Kalyani and Sahoo, 2011; Peus, Frey, Gerkhardt, Fischer & Traut-
 137 Mattausch, 2009), therefore, discussion on this research is assessing the relationship
 138 between change management and operational excellence. Change management means
 139 planning and realizing changes that concern organization’s strategic success factors. These
 140 success factors might be the meaning of it, its policies, competencies and the capability of
 141 renewal. The firm critical success factors that influence organizational changes also identify
 142 through the empirical evidence.

143 The success criteria behind excellence, soft systems are important in managing change
 144 which allowed managers to strike a balance between the ‘hard-s’ and the ‘soft-s’ systems of
 145 business. However, there is little agreement on what factors have most influence the
 146 organizational in change initiatives. In addition, the integration of soft systems to predict
 147 operational excellence may not have a profound understanding by both academic and
 148 practitioners. This paper focuses on the soft systems in the E&E industry.

149 **2.3.1 Leadership Style**

150 Leadership is the other key component of successful change. Leadership is the first criterion
 151 of the European Foundation for Quality Management (EFQM) Excellence Model, a model of
 152 organizational excellence which is used by more than 30,000 organizations across Europe
 153 (EFQM, 2010). While change management depends on leadership to be enacted, specifically,
 154 the leadership style that is primarily concern with the capabilities required enacts change
 155 successfully (Eisenbach, Watson & Pillai, 1999, Burke & Church, 1993; Idris & Ali, 2008).
 156 Most of the research on the leadership paradigms has focussed on its relationship to
 157 followers (Bass & Avolio, 1994; Burns, 1978; Shin & Zhou, 2003); the success of TQM
 158 programs (Waldman, 1993; Choi and Behling, 1997); organizational outcomes such team
 159 performance (Sauer, 2011; Mannheim & Halamish, 2008); and financial performance (Idris &
 160 Ali, 2008). Based on researchers’ knowledge, there were limited literatures done on
 161 leadership styles and its impact on operational excellence in manufacturing industry,
 162 especially in the Malaysian setting.

163 Leadership has been recognized as a major factor on organization success and this has been
 164 empirically validated throughout many fields. However, a leadership style in the context of
 165 change management and its impact on operational excellence in manufacturing industry has
 166 not been as widely research. Moreover, a transformational style of leadership is perceived
 167 can produce positive organizational change and create exceptional performance (Bass, 1985;
 168 Boehnke, Bontis, DiStefano & DiStefano, 2003; Burke & Church, 1993). In the present study,
 169 we are interested in examining the positive impact of transformational leadership style on
 170 operational excellence. Hence, the researchers offer the following statement of hypotheses:

171 H_1 : The inclination towards the transformational leadership style leads to achieving
 172 operational excellence.

173 **2.3.2 Human Resource**

Any change program would revolve around people, changing their mind set, behaviour and motivational level. Human resource has always been central to organizations, to-day it has taken on an even more central role in building a firm's competitive advantage. Success increasingly depends on "people-embodied know-how". Thus, includes the knowledge, skills, and abilities imbedded in an organization's member. Kalyani and Sahoo (2011) argue Human Resource is an intellectual asset, the sum total of the knowledge, skills and competencies that an organization processes and channelizes for sustained organizational excellence. Excellence is surpassing on outstanding achievement, achievable by the use of Human resource strategies and practices as tool.

Court (2011) suggests the future role of the Human resource function should focus on helping their organization to learn how to build a capability to change. In authors view, the human resource practices are Human resource tools use by organization to achieve excellence. However, very little attention has been paid to address the impact of managing human resource change on operational excellence. The universal use of Human resource practices such as recruitment and selection, training and development, performance appraisal, and compensation and benefits (Ferguson & Reio Jr., 2009; Gurbuz & Mert, 2011; Kalyani & Sahoo, 2011; Stavrou-Costea, 2004; Dimba, 2010; Khan, 2010) could be explored in present study to predict operational excellence. New knowledge generate from this study could inform theory building efforts in the Human resource field, particularly as it related to human resource-based view to meaningful organization outcomes and in due course excellence. Therefore, we hypothesize that human resource practices lead to positive impact to operational excellence.

H₂: Effectiveness of human resource practices leads to an impact on achievement of operational excellence.

2.3.3 Organizational Culture

Operational excellence is an enterprise culture that improves the way a corporation delivers products and services to its customers. Operational excellence calls for more than subject matter expertise and a talented internal team. It requires a deep commitment and a culture of change. Changing to a culture of continuous improvement usually requires a paradigm shift. This change requires taking risks, opening up the firm culture and a great capacity to learn (Markovic, 2008). You, Coulthard and Petkovic-Lazarevic (2010) suggest that a link between corporate culture traits such as consistency, mission, involvement, and adaptability and business performance exists.

The present study embraces on managing change and focus on internal organization, therefore, the *involvement trait* (Internal Focus) is the best dimension to evaluate its effecting desired change within organization (Denison, Haaland & Goelzer, 2003; You et al., 2010). This trait is measured by the three indices namely empowerment, team orientation and capability development. In addition, Denison (1990) found empirical support for the involvement view of culture, higher levels of employee participation were correlated with better organizational performance. Whilst organizational culture has been researched worldwide, little research has been done in Malaysia, with its unique culture and centred business environment. This leads to the following hypothesis:

H₃: Higher levels of individual involvement cultural trait leads to an impact on operational excellence

Overall, literatures indicate that firm managing change is vital in ensuring competitive advantage to the firms (Kanter, 1985; Kotter, 2007). In essence, effective approaches in organizational change will involve not only one system but also have to understand other relevant systems of entire organization. Moreover, change management and these soft systems have not being integrated in any research which develop new knowledge in the study of operational excellence. Integrating change management maturity with associated soft systems in order to remain competitive, is absent in most Operational Excellence initiatives.

2.4 Hypotheses and the Research Model

Based on the previous literature, three hypotheses were proposed. The relationship among the various factors discussed in this literature is depicted in a framework as shown by Figure 1 below. Based on the literated syntheses, the authors develops a linkage that the change management systems are likely to have impact on operational excellence of the organization only in situations where change management practices are implemented.

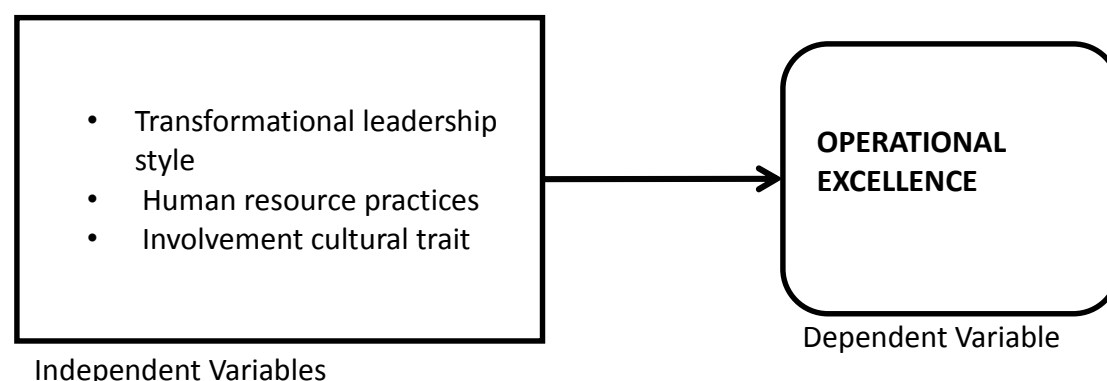


Figure 1: Theoretical Framework

3. RESEARCH METHODOLOGY

3.1 Population and Sample Size

The nature of the problem in this study determines that it leans more towards a causal. The main goal of causal research is to identify cause-and-effect relationship among variable (Zikmund, 2003). The literature review was carried-out in sufficient details to provide the understanding on the change management and operational excellence. The researchers also investigated how the previous studies done in order to study the relationship of both change management and operational excellence. Therefore, the researchers believed that it is appropriate to consider the manager who involved in the manufacturing operations to give inputs on the subject matter. In this context, samples of the population are drawn from the FMM-MATRADE Industry Directory Electrical and Electronics Malaysia 2007/08 (FMM, 2008) and Federation of Malaysian Manufacturers (FMM) Industry Directory 2012 of Malaysian Manufacturers (FMM, 2012). The sampling frame of this study is the manufacturing companies from electrical and electronics industry situated in Malaysia. By using random sampling method, 321 manufacturers will be identified and questionnaires will be distributed to them using postal mail. Finally, a total of 121 usable questionnaires were obtained which yielding a response rate of 37.7 percent. Therefore, the response rate was normal and acceptable as compared with past studies in Malaysia.

3.2 Respondent's Profile

3.2.1 Profile of the Respondent Companies

The E&E industry is further breakdown to four sub-sectors which included (1) consumer electronics (2) electronic components (3) industry electronics and (4) electrical products (MIDA, 2012). As presented in Table 2, the majority of the manufacturing firms that responded to the survey were under the electronic component sector which comprised 43.8 percent of the number of respondents, followed by those in industrial electronics (24.8%), consumer electronics (15.7%) and electrical products (15.7%).

Table 2: Respondents by sub-sector

Sub-sector	Frequency	Percent	Valid Percent	Cumulative Percent
Electronic components	53	43.8	43.8	43.8

Industrial electronics	30	24.8	24.8	68.6
Consumer electronics	19	15.7	15.7	84.3
Electrical products	19	15.7	15.7	100.0
Total	121	100.0	100.0	

3.2.2 Profile of the respondents

For ease of understanding is a tabulation of the profiles of the respondents as per Table 3. In terms of gender, the majority of the respondents were male which comprised of 71.9 percent as compared to their counterparts at 28.1 percent. Generally, 45.5 percent of the respondents are from the age between 36 and 45 followed by age above 46 (34.7%), then age between 18 and 35 with a response if 19.8 percent. This showed that majority of the questionnaire were answered by the middle and senior management from manufacturing companies. Most of the respondents (33.1%) have less than 5 year's tenure employment to their current companies. In contrast, 31.4 percent of the respondents have more than 16 years attaching to their current companies. The remaining respondents were between 6 to 10 years are 21.5 percent and between 11 to 15 years are 14.0 percent respectively. Almost half of the questionnaires are answered by the managers (44.6%). Other respondents, which represent 19.0 percent of senior executive or senior engineer, 5.8 percent of section head and assistant manager respectively, 14.0 percent of senior manager, 6.6 percent of directors, 4.1 percent of director and of professional. The professional group includes Accountants, Lawyers and Consultants. The results imply that majority of the E&E manufacturing companies have followed the requirements as stated in the cover letter which attached with the questionnaire.

Table 3: Profile of the respondents

Characteristics		Frequency (n = 121)	Percent (Total 100%)
Gender:	Male	87	71.9
	Female	34	28.1
Age:	Between 18 to 35 years	24	19.8
	Between 36 to 45 years	55	45.5
	Above 46 years	42	34.7
Number of years working in this company:	Less than 5 years	40	33.1
	Between 6 to 10 years	26	21.5
	Between 11 to 15 years	17	14.0
	More than 16 years	38	31.4
Position held:	Senior Executive / Senior Engineer	23	19.0
	Section head	7	5.8
	Assistant Manager	7	5.8
	Manager	54	44.6
	Senior manager	17	14.0
	Director	8	6.6
	Professional	5	4.1

3.3 Measurement

The survey questionnaire was developed based on early studies (Laugen, Acur, Boer & Frick, 2005; Hubbard, 2009, Kuruppuarachchi & Perera, 2010; Nahm, et al., 2003; Bass & Avolio, 1992; Snell & Dean, 1992; Denison et al., 2003; You, et al., 2010). The Table 4 summarizes the reliability test of the measures. The results showed that all the Cronbach's Alphas measures were above the lower limit of acceptance ($\alpha > .70$). Therefore, all the measures were highly reliable (Nunnally, 1978; Hair, Black, Babin & Anderson, 2010).

Table 4: Summary of variable measurement

Variables Names	Cronbach's Alpha	N of Items	Authors
Operational excellence	.942	23	Laugen, et al. (2005); Hubbard (2009); Kuruppuarachchi & Perera (2010).
Transformational leadership style	.915	12	Bass & Avolio (1992).
Human resource practices	.843	12	Snell & Dean (1992)
Involvement cultural trait	.772	9	Denison et al. (2003); You, et al. (2010).

In a Likert scale, each respondent will be asked to indicate the extent of each statement on a five-point. The options given in the questionnaires for Section A are "strongly disagree (1)"; "disagree (2)"; "Neutral (3)"; "agree (4)"; and finally "strongly agree (5)". For Section B, respondents are requested to rank their answers to 5-points Likert-type interval scale, ranging from 1 for "worst in industry (1)"; 2 for "bad in industry"; 3 for "average in industry"; 4 for "good in industry" and 5 for "best in industry". Thus, researchers were able to solicit answers about the given statement through a set of response keys.

3.4 Factor Analysis

The factor analysis was based on principal component analysis (PCA) with Varimax rotation for all components. In determining the factorability of the dimensions, the Bartlett's test of Sphericity had to be significant and the Kaiser-Meyer-Olkin (KMO) Measure of sampling adequacy had to be more than 0.50 in order to be acceptable (Hair, et al., 2010). The following Table 5 shows the results of all variables. The Kaiser-Meyer-Olkin (KMO) measures of sampling adequacy from 0.692 to 0.906 which all above 0.5 acceptable level (Igbaria, Iivari & Maragahh, 1995). All results indicate that factor analysis can be conducted on the data (Coakes & Steed, 2003; Hair et al., 2010). Moreover, there is a sufficient correlation among the analyzed items when Bartlett's test was significant (Sig. 0.000).

Table 5: KMO and Bartlett's test

		OPX	TLS	HRP	ICT
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.881	.906	.797	.692
Bartlett's Test of Sphericity	Approx. Chi-Square	1590.599	757.645	555.269	410.166
	df	190	66	66	36
	Sig.	.000	.000	.000	.000

OPX=Operational excellence; TLS= Transformational leadership style; HRP= Human resource practices; ICT=Involvement cultural trait

3.5 Data Analysis

The data analysis tools such as Statistical Package for Social Science (SPSS) software will be used to process the data obtained from this survey. Responses on all parts of the questionnaire will be analyzed using frequency, means, standard deviations, reliability, and inter correlations to calculate different characteristics of the data. Factor and reliability analyses to test the goodness of measures, descriptive statistics to describe the characteristic

of respondents, and correlation analysis to describe the inter correlation among the variables. Moreover, multiple regression analysis was used to achieve the objective with testing the hypothesis.

4. RESULTS AND DISCUSSION

4.1 Descriptive Analysis

The means and standard deviations of each variable were shown in Table 6. The results of Pearson's correlation test for independent variables and dependent variable was shown in Table 7. This result revealed that all the independent variables and dependent variable were positive and significant at a level of 99 percent. The strength of relationship varies from lowest at 0.561 and to the highest at 0.639. These findings support the notion that change management systems as predictor variables had a positive correlation and linear with operational excellence. On the other hand, the correlation was also further evidence of validity and reliability of the measurement scales used in this study.

Table 6: Means and standard deviations

	N	Mean	Std. Deviation
Transformational leadership style	121	3.6515	.56765
Human resource practices	121	3.7576	.48233
Involvement cultural trait	121	3.7530	.41857
Operational excellence	121	3.7373	.48899

Table 7: Pearson's correlation test for independent variables and dependent variable

	Transformational leadership style	Human resource practices	Involvement cultural trait	Operational excellence
Transformational leadership style	1			
Human resource practices	.586**	1		
Involvement cultural trait	.561**	.586**	1	
Operational excellence	.616**	.639**	.563**	1

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

4.2 Testing of Hypotheses

In order to measure the combined effect of all the soft systems in the change management towards operational excellence, the analysis of multiple regressions was performed on the variables in question. Refer to Table 8, results from the analysis of multiple regression show that among soft systems of change management which were proposed to have a significant relationship with operational excellence, all of them namely transformational leadership, human resource practices and involvement cultural trait were significantly supported.

All the soft systems were found to have positive and significant ($p < 0.05$) relationship toward operational excellence. This statistical result suggested that a human resource practices, with Beta value of .323 has the strongest effect (most important) on operational excellence in this study, follow by transformational leadership style (important), with Beta value of .296. Organizational culture has least important, with Beta value of .211 to produce sufficient support of significance in its relationship towards operational excellence.

In *Model Summary* at Table 8, the adjusted R Square (.505), which is explained the change management (composite independent variables) accounted 50.5 percent of the variance (R squared) in operational excellence (dependent variable). According to Cohen (1998), R Square between the range of 1.0 to 5.9 percent is consider as small size, follow by the moderate range between 5.9 to 13.8 and range which is above 13.8 percent is consider large. In the result of multiple regression analysis, the R Square, .505 means 50.5 percent consider large effect. Therefore, the results explain that is 50.5 percent of the variance (R Square) in operational excellence has been significantly explained by the three independent variables under change management.

Table 8: Results of multiple regression analysis of change management and operational excellence

Variable	Coefficient			<i>Model Summary</i>
	B	T	Sig.	
Transformational leadership style	.296	4.160	.000*	R square: .505 Adjusted R square: .493 F: 39.839, P < .000 df1: 3, df2: 117 Durbin-Watson: 1.996
Human resource practices	.323	3.832	.000*	
Involvement cultural trait	.211	2.101	.038*	

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

4.3. DISCUSSIONS

This paper is focused on linking between the change management to operational excellence within E&E companies of Malaysia. Furthermore, the paper organises the burgeoning change management literature soft systems, which are transformational leadership, human resource, and organizational culture. The purpose of this study is to give an increased understanding of the operational excellence in Malaysian manufacturing industry and its implication on activities concerning organisation and managing change.

The respondents were top managers and those identified as responsible in running the companies which closely linked to manufacturing operations including General Manager, Operation Manager, Factory Manager, Production Manager, Engineering Manager, Manufacturing Manager, Planning Manager, Materials Manager, Lean Manager and Project Manager (involve in Change Management or Continuous Improvement programs). So this study cannot be used to represent the operational of others industry because the effect of change management to operational excellence could be different.

Responding to the hypotheses, this study found all three soft systems of change management have effect on the achievement of the company's operational excellence. In respond to the findings, *transformational leadership style*, *human resource practices* and *involvement cultural trait* were found to have an effect on the achievement of operational excellence for Malaysian E&E manufacturing companies. The hypotheses were positive and significant and thereby confirmed.

This study has provided evidence that transformational leadership style have a significant positive effect on operational excellence. The hypothesis, H_1 accepted is not surprising because strong theoretical and practical support transformational leadership is enacting

change successful. Present study also concur with the findings of past study by Bass (1985), and Boehnke et al., (2003) who claimed that the transformational leadership style can produce positive organizational change and create exceptional performance. Furthermore, transformational leadership is directly correlation to long-term high performance (Bass & Riggio, 2006; Cameron, 2008), therefore, towards business sustainability.

This study adds another perspective into the earlier findings conducted in Malaysia, Idri and Ali (2008) found that the transformational type of leaders will give impact to company performance if best practices management takes place. Under these argument, transformational leader who promote the adoption of best practices leads to superior performance. This finding is consistent with the results from prior studies (Voss, 1995a, Laugen, et al, 2005; Yusuff, 2004; Anuar & Yusuff, 2011) on companies that adopted best practices showed better operation performance. In this study, the effect of transformational leadership style on achieving operational excellence is supported. In other word, lower and middle management of Malaysian E&E manufacturing companies perceived their top management use transformational leadership style in pursuing excellence.

The statistical result also revealed that the human resource practices have effect on operational excellence of Malaysia E&E manufacturing companies in this study. Therefore, the hypothesis, H₂ is fully supported. This finding is consistent with earlier studies by Kalyani and Sahoo (2011) who argue human resource is an intellectual asset that channelizes for sustained organizational excellence. This study also support past studies that the human resource practices included recruitment and selection, training and development, performance appraisal, and compensation and benefits, are human resource tools use by organization to achieve excellence (Ferguson & Reio Jr., 2009; Gurbuz & Mert, 2011; Kalyani & Sahoo, 2011; Stavrou-Costea, 2004; Dimba, 2010; Khan, 2010).

Moreover, above findings strongly support the empirical findings by Lee and Lee (2007), who suggested that human resource management practices including training and development, human resource planning, performance appraisal, compensation/incentive, and employee security help organizations to in improve their business performance such as firm's product quality, flexibility, and employee's productivity. The aforementioned results have also provided the required empirical support that influence of human resource practices indicating positive and significant relationship on organizational performance in the area of research for the past 25 years (Qureshi, Hijazi, & Ramay, 2007). The finding of present study provides empirical evidence again on the role of human resource practices on the achievement of operational excellence.

The result indicates that the involvement cultural trait, H₃ does significantly have impact in achieving operational excellence. The involvement cultural trait comprises of empowerment, team orientation and capability development does play a major role in the effectiveness of operational excellence. This finding is similar with the past research by Peters and Waterman (1982), they drew a lot of attention to the important of culture to achieve high levels of organizational effectiveness. Past studies by Gupta (2011) stated that organizational culture is a key foundation for the high-performance work practices, and employee involvement such as teamwork, capability development and empowerment positively influence outcomes measures. For example, high performing firms motivate their employees to achieve superior results by making decisions at the lower level. In addition, high performing firms have organizational structure based on teams, therefore they encourage teamwork. Moreover, these firms continually invest in improving their employees' skills. Hence, the high levels of employee involvement in the company's activities did play an important and integrated role in achieving operational performance outcomes

This finding appears to be consistent with previous study that argued involvement as the most important dimension of culture for firms whose focus was employee satisfaction and overall performance (Nazir & Lone, 2008).The success of organization lies on how well the employees are empowered to take decisions through building their capabilities and harnessing their skills. Indeed, an organization with a high level of employee involvement will develop the employees' capability at all levels and create a sense of ownership, responsibility,

and loyalty toward their organization. Another plausible reason of significant relationship between involvement cultural trait and operational excellence was in the way the culture trait was measured. Past research showed that internally focus traits involvement is generally better predictors of operating performance measures such as quality, flexibility, employee satisfaction (Denison, 1990; Denison & Mishra, 1995) and change (Denison, 2003). The finding of present study pointed to high involvement of employees as relatively important influential culture traits in determining operational excellence in the context of the Malaysia E&E industry.

Furthermore, present study supports resource-based view (RBV) theories. The RBV on inimitable recourses and dynamic capabilities suggest that organizational should have their own competence according to knowledge resources. These competencies must be rare and unique. Moreover, researchers also found many of resources and capabilities on which competitive advantage is based reside in the operations function (Coates, & McDermott, 2002; Lucas & Kirillova, 2011). Thus, the argument established in this study was transformational leadership style, human resource practices and involvement cultural trait.

5. CONCLUSION, LIMITATIONS AND FUTURE RESEARCH

5.1 Summary of Finding

This study is on the relationship among the change management and operational excellence. The multiple regression results revealed that the transformational leadership style, human resource practices and involvement cultural trait statistically significantly and positive relation with the achievement of operational excellence. Approaches to theory uses, this study utilize resource-based view.

5.2 Limitation and Directions for Future Research

The conclusions drawn from present study should be interpreted in a limited way, which would potentially represent opportunities for further exploration in future research. First, this study is a cross sectional study, as it is carried out once and represents the issue at a specific time. Therefore, future study may look into a longitudinal study in order to expand the findings that are pre-changes and post-changes. Second, this study used the Electrical and Electronics (E&E) manufacturing firms that have high foreign ownership but also many restrictions in responding to the study. It is suggested that using Malaysian local owned firms like small-medium enterprise (SME) or small-medium industry (SMI) may add more insight. In addition, future study in service industry will add richness to the area of interest. Third, this study had proven the important of few change management systems in affecting the achievement of operational excellence. In contrast, further studies could focus on others systems or dimensions which have been excluded in this study. Fourth, future study can also investigate the change management due to external environment. Perhaps it will be able to provide a new insight on how firm react to external force and also improve the operational performance.

5.3 Implication and Conclusion

An evident in the data analysis findings above, this study has provided several contributions to practice, methodology and theory. In contrast to most previous studies identified each of system separately, this paper will be among the first few studies that examine the soft systems of change management to predict operational excellence. Success in change depends on proper integration of transformational leadership style, human resource practices and involvement cultural trait. Hence, management is advised to establish policy, systems and process that integrate three soft systems in their planning and strategic direction.

On the other hand, the paper is hoped to provide the managers with the insight in order to assist them to identify the appropriate operational excellence model based on organizational needs. As for methodology contribution, this study was add-on sustainability performance

metrics (non-economic measure) on top of the conventional performance metrics (economic measure) in a composite performance index by averaging scores across the six performance indicators. Since sustainability is very important aspects of today business environment (Hubbard, 2009; Muogboh and Salami, 2009), therefore, this methodology can be validated in future research to measure operational excellence or business excellence. From the theoretical perspective, it is discovered the originality in terms of the model to reflects a growing interest in extending operational management paradigms to emerging in developing country context, particularly on the knowledge on the insight of change management and operational excellence.

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