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The Impact of Asean Free Trade Agreement as Moderator on TQM Performance Model in Malaysia: Survey Result

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Abstract: Globalization and trade liberalization have changed to tremendous challenges and threat for Malaysian companies to strive in ASEAN. Quality is crucial aspect for companies to maintain and expanse their business in competitive market. Thus, many companies have implemented Total Quality Management (TQM) to improve their companies to the higher level of business performance. ASEAN countries have implemented Asean Free Trade Agreement (AFTA) by eliminating tariffs amongst the countries to ensure ASEAN to be more effective and efficient in terms cost. Nevertheless, AFTA is an advantage for multinational companies especially foreign companies because they have much resources such technology and technical capability. The study of AFTA as a moderator is less done in previous research. The main contribution of this study is to determine the effect of AFTA as a moderator. Based on 1500 surveys, final received response is 327 surveys which equal to 21.8% of response rate. However, 8 surveys have been excluded because of common method bias and missing value issue. The final usable question is 319 which equal to 21.3%. The result shows that AFTA has significant impact on relationship between TQM and business performance as moderator. The Structural Equation Modeling (SEM) techniques were applied to determine the effect of AFTA as moderator on TQM performance model.

Key words: Total Quality Management (TQM), AFTA, business performance, automotive industry, surveys

INTRODUCTION

TQM has been implemented as a result for survival in global market (Garvin, 1988). Based on Garvin (1988), the key success for survival are quality performance and customer satisfaction. TQM is a way of management philosophy and practices that supports their companies to achieve better performance and world standard (Konecny and Thun, 2011). Institutional theory and contingency theory are used to support in developing conceptual framework. Institutional theory explains organizations build system and practices such as TQM and ISO 9000 to achive stakeholders' requirement (Sila, 2007). Based on contingency theory, a company will implement practices based on their business environment to sustain in their operation (Ellis *et al*., 2002). In this study, researcher defines environment effects as AFTA in this study.

Literature review: The globalization and trade liberalization have changed to tremendous challenges and threat for Malaysian companies to compete in ASEAN and global market. Malaysia and other five countries of ASEAN namely as Brunei, Indonesia, Philippines, Singapore and Thailand have implemented free-trade area in ASEAN starting from January 1, 2010. Thus, the import duties and tariffs amongst ASEAN countries have been abolished on all products in the inclusion list and ASEAN Free Trade Area (AFTA) (Zakuan *et al*., 2010).

The companies in ASEAN have more option to purchase raw materials at lower cost with better quality and performance from other ASEAN countries. It will contribute to the reduction in production costs because raw materials and parts can be purchased at a lower cost. Consequently, the price will become lower and more competitive which can compete not only within ASEAN but also in the other market such as Europe, America and

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China (Raimon and Yusof, 2006). The advantage of AFTA implementation is Malaysian companies have bigger market in ASEAN countries because tariff elimination. Based on previous practices, Malaysia's government has implemented tariffs and market protectionin domestic market. Zakuan *et al*. (2010) view that AFTA can impact significant value to ASEAN because of cost reduction and supply chain advantage rather than negative impact to the countries. Trade liberalisation and capital investmentfrom Foreign companies causesgreat challenges and threat for Malaysia companies in domestic market. Rosli (2006) emphasised that AFTA impacts many benefits to Foreign companies as they have competitive advantages such as product design, technical and production capability but not for Malaysian companies.

Based on previous researches, researcher have identified dimensions of environment effect as follows External environmental and market turbulence External environment is defined as competition amongst the manufacturers. Manufacturers should seek information about their customers and potential customers to know their customer's requirement and fullfill their satisfaction by offering product or services based on customer demands. Market turbulence is defined as the rate of change in customer preferences and composition (Kohli and Jaworski, 1990; Slater and Narver, 1998).

Competitive intensity If market turbulence, competitive intensity and technological turbulence increase, an organisation must move away from existing customer needs and seek to the new potential needs to maintain a competitive advantage (Slater and Narver, 1998).

Technological turbulence technological turbulence describes technological change (Kohli and Jaworski, 1990). Technologically advanced organisation can stay ahead through superior product and service.

Hypotheses

Relationship between TQM and business performance: Based on previous researchs, TQM and business performance have strong relationship. TQM can improved quality, productivity, financial and customer satisfaction (Besterfield, 2009). Most previous researchs show a positive relationship between TQM practices and business performance (Jun *et al*., 2006; Bou and Beltrán, 2007; Gunday *et al*., 2011). Therefore, accordingly, it is proposed that:

- H_1: The TQM practices has a direct, positive effect and leads to better Businesss performance

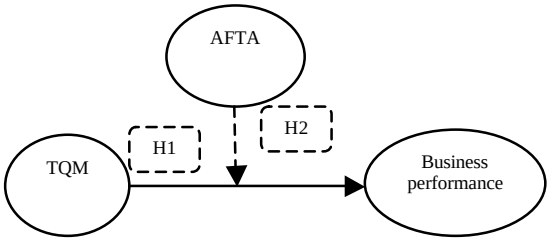

Fig. 1: Conceptual framework

The impact of AFTA as moderator: Success companies have capability to implement practices that compliance to changing environment to improve their performance (Duncan, 1972, Miller *et al*., 1992). Based oncontingency theory, environment is crucial elements in determining implementation of the improvement practices which are suitable for the companies (Doty *et al*., 1993; Gresov and Drazin, 1997). Accordingly, we propose that:

- H_2: Environment (low and high AFTA environment) has significant effect as moderator between TQM and business performance

Conceptual framework model: Structural Equation Modeling (SEM) techniques is an important statistical method to analyse multivariate relationship in a model. Based on hypotheses and literature reviews, a conceptual framework has been developed to show the relationship amongst the variables as shown in Fig. 1.

MATERIALS AND METHODS

A seven-point Likert scale have been applied in the instrument for collecting data. The instrument have been validated by the experts in quality management. First, pilot study have been conducted and then revisions have been made for improving the instrument. Based on Federation of Malaysian Manufacturers (FMM) and the foreign companies directory list in Malaysia, 1500 companies have been selected for final survey. The target respondents are quality assurance and quality control manager in the company because he has responsibility and knowledge capability of the quality progress in the company.

RESULTS AND DISCUSSION

Response rate: Based on 1500 surveys, final received response is 327 surveys which equal to 21.8% of response rate. However, 8 surveys have been excluded because of common method bias and missing value issue. The final usable question is 319 which equal to 21.3%.

Table 1: Assessment of multivariate normality

Variables	Min	Max	Skewness (+1)	CR (+3)	Kurtosis (+1)	CR (+ 7)
BP6	1.000	7.000	-0.514	-2.746	0.711	2.593
BP5	1.667	7.000	-0.419	-2.054	0.240	0.876
BP4	1.500	7.000	-0.347	-2.532	-0.235	-0.857
BP3	2.000	7.000	-0.428	-2.119	0.157	0.573
BP2	1.000	7.000	-0.429	-2.126	0.379	1.381
BP1	3.250	7.000	-0.236	-1.718	-0.383	-1.397
TQM1	3.000	7.000	-0.506	-2.688	-0.104	-0.378
TQM2	2.667	7.000	-0.476	-2.468	0.260	0.947
TQM3	2.500	7.000	-0.383	-2.792	-0.092	-0.337
TQM4	1.500	7.000	-0.571	-2.162	0.622	2.267
TQM5	2.000	7.000	-0.567	-2.350	0.917	3.343
TQM6	2.250	7.000	-0.474	-2.457	0.058	0.210
TQM8	1.914	7.000	-0.386	-2.814	0.006	0.024
TQM9	2.750	7.000	-0.420	-2.061	-0.196	-0.715
TQM10	2.000	7.000	-0.415	-2.025	-0.216	-0.787
Multivariate					18.456	12.404

Table 2: Convergent validity and composite reliability for second order measurement model

Construct	Item	Loading, (L), L>0.6	Cronbach's alpha α>0.7	Composite Reliability (CR) CR>0.7	Convergent Validity (AVE) AVE>0.5
TQM	TQM1	0.77	0.941	0.938	0.708
	TQM2	0.82			
	TQM3	0.79			
	TQM4	0.82			
	TQM5	0.72			
	TQM6	0.83			
	TQM7	0.83			
	TQM8	0.82			
	TQM9	0.81			
	TQM10	0.69			
AFTA	AFTA1	0.86	0.940	0.939	0.730
	AFTA2	0.80			
	AFTA3	0.89			
BP	BP1	0.85	0.934	0.938	0.715
	BP2	0.79			
	BP3	0.88			
	BP4	0.87			
	BP5	0.83			
	BP6	0.81			

Table 3: Discriminant validity

Variables	TQM	BP
TQM	0.708	
BP	0.599	0.715

Normality test: Before starting with the structural analysis to use SEM techniques, the entire test variables have to meet the assumption of multivariate normality. Skewness and kurtosis values are shown in Table 1. The result showed that skewness fell within the range of -1.0-1.0 and indicated normal distribution (Awang, 2012; Field, 2009). The result also showed that the Critical Ratio (CR) was <3.00 for skewness (Kline, 1998) and 7.0 for kurtosis (Byrne, 2010). Thus, multivariate normality can be assumed.

Convergent validity: Convergent validity is determined by using Average Variance Extracted (AVE) and Composite Reliability (CR). The result shows that AVE value is >0.5 and CR is >0.7. (Hair, 2010) as shown in Table 2. Cronbach's alpha for internal reliabilityis >0.7 as recommended by Nunally.

Table 4: The moderation test using high group of AFTA data

Test	Constraint model	Unconstraint model	Difference	Result on moderation	Result on hypothesis
Chi-Square	206.547	198.813	7.734	Significant	Supported
DF	101.000	100.000			
GFI	0.936	0.934			
AGFI	0.911	0.910			
TLI	0.946	0.949			
CFI	0.960	0.962			
RMSEA	0.079	0.077			
Chisq/df	2.045	1.988			
H_{18}a: AFTA (High group) moderates the relationship between TQM and BP					Supported

Discriminant validity: AVE values were higher than the square of correlation between the variables, as shown in Table 3. Based on this result, it is can be concluded that discriminant validity has been achieved.

Structural Equation Modeling (SEM): The Structural Equation Modelling (SEM) for testing AFTA as a moderator between TQM and BP is shown in Fig. 2.

Two groups were differentiated in terms of their level of AFTA. The median was calculated by SPSS and the value was 5.08. A median split was used to divide the sample into two groups. The data above the median (5.08) were defined as high AFTA group and the data bellow median were defined as low AFTA group. These data were saved in two new files, high AFTA and low AFTA. The moderation test using high group of AFTA (n = 161) Same procedure of testing for moderator was conducted for ownership moderation testing. Constraint (equal to "1") and unconstraint models for high group of AFTA companies were developed, as shown in Fig. 3 and 4.

The difference in chi-squared ($\Delta\chi^2$) value was 7.734 while the difference in df was 1. The result showed the moderation effect was significant since the difference in chi-squared ($\Delta\chi^2$) value was >3.84 (df = 1) as shown in Table 4. Thus, ownership (high AFTA) moderated the relationship between TQM and BP.

The moderation test using low group of AFTA (n = 158): Same procedure was conducted to low group of AFTA. The constraint and unconstraint models for low group of AFTA are shown in Fig. 5 and 6.

The difference in chi-squared ($\Delta\chi^2$) value was 12.253 while the difference in df was 1. The result showed the moderation effect was significant as the difference in

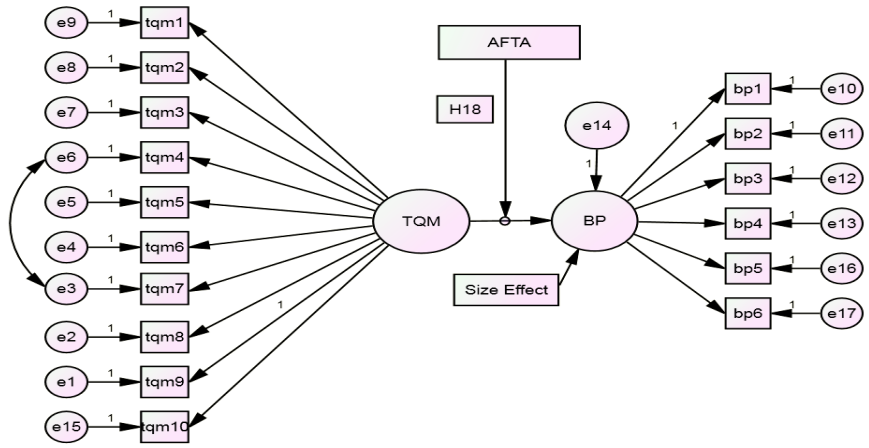

Fig. 2: Conceptual framework for AFTA as a moderator

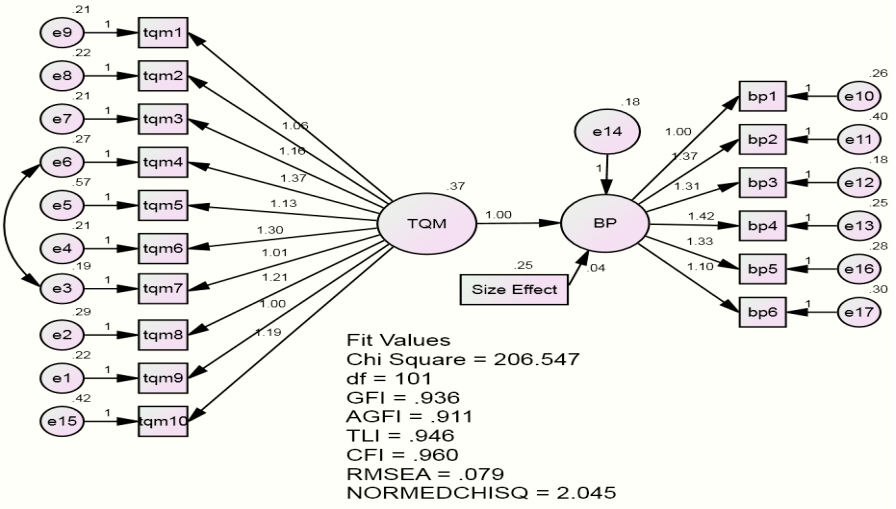

Fig. 3: High group of AFTA (constraint model)

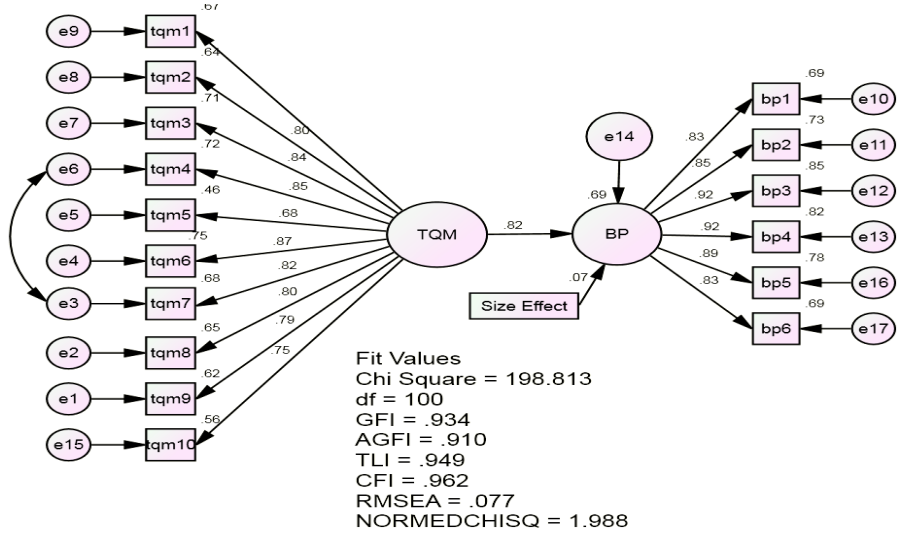

Fig. 4: High group of AFTA (unconstraint model)

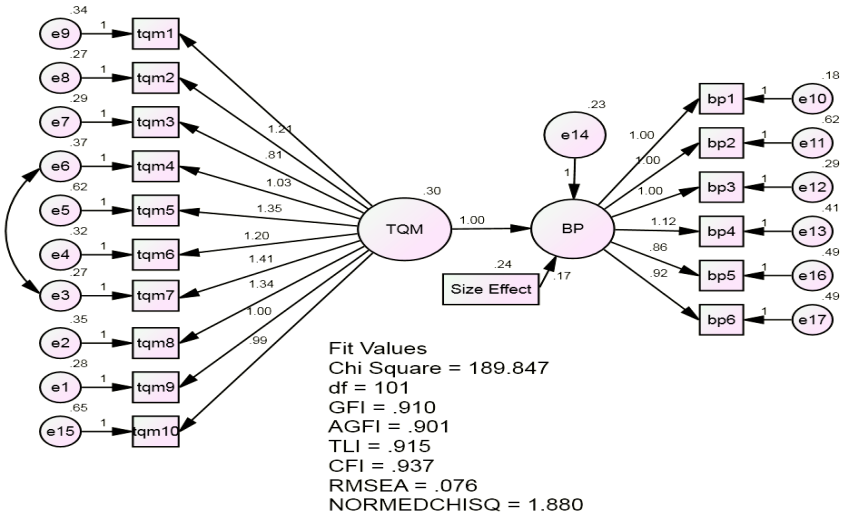

Fig. 5: Low group of AFTA (constraint model)

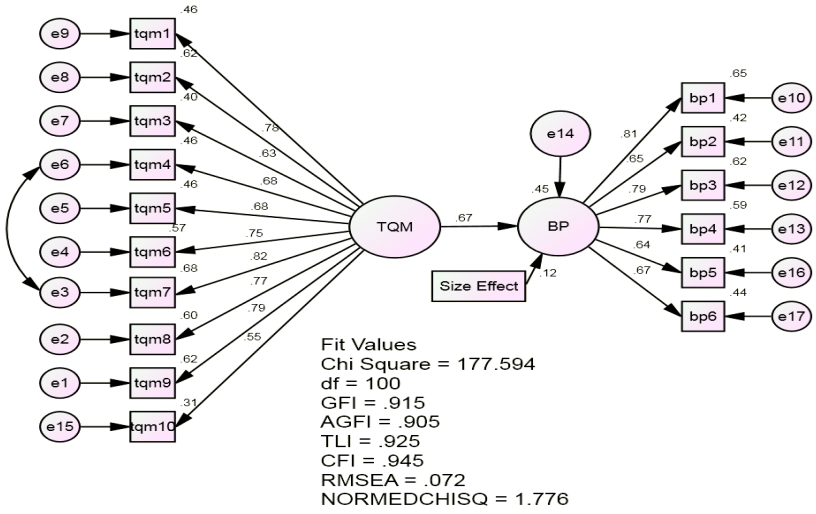

Fig. 6: Low group of AFTA (unconstraint model)

Table 5: The moderation test using low group of AFTA data

Test	Constraint model	Unconstraint model	Difference	Result on moderation	Result on hypothesis
Chi-squared	189.8	177.6	12.25	Significant	Supported
DF	101.0	100.0			
GFI	0.910	0.915			
AGFI	0.901	0.905			
TLI	0.915	0.925			
CFI	0.937	0.945			
RMSEA	0.076	0.072			
Chisq/df	1.88	1.776			
H_{18}b: AFTA (Low group) moderates the relationship between TQM and BP					Supported

Table 6: Structural analysis

Hypotheses	Type group	Path	Standardised value	CR	$\Delta\chi^2$ (>3.84)	Result
H_{18}a	High	TQM→BP	0.82	9.912**	7.734	Supported
H_{18}b	Low	TQM→BP	0.67	7.039**	12.253	Supported

chi-squared ($\Delta\chi^2$) value was >3.84 (df = 1) as shown in Table 5. Thus, ownership (high AFTA) moderated the relationship between TQM and BP.

Comparing the group effect of AFTA group: Since, the RC values were significant for high AFTA (rc = 0.82) and low AFTA (rc = 0.67) as shown in Table 6 and Fig. 7, it can be concluded that AFTA partially moderated the relationship between TQM and BP (Hair, 2010). The effect of high AFTA (rc = 0.82) was more pronounced compared to low AFTA (rc = 0.67).

Malaysia faces new threat after AFTA implementation because business environment has changed and unpredictable. Business environment is based on technological and economics characteristics (Konecny and Thun, 2011). The environment changes caused many companies have to improve their performance for survival (Wang *et al*., 2012). This study have proved that AFTA has significant impact on TQM performance model.

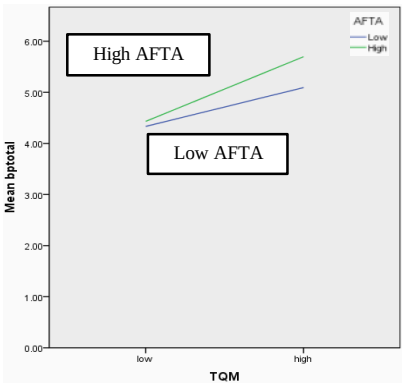

Fig. 7: Moderator effect of AFTA

CONCLUSION

There are significant and positive impact of AFTA towards TQM performance model. The relationship is stronger when the organisation in high environment of AFTA compared to low environment of AFTA. A company will reflect their action to improve their company and it is proved the theory of contingency theory andInstitutional theory.

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