

4. Research Results

4.1. Respondent profile

A total of 200 sets of questionnaires had been sent out through email to the qualified respondents as per mentioned. The total data respondents collected are 71 sets. The highest number of respondents came from the chemicals and chemical product industry, followed by those categorized under the other's category.

Of the respondents, most of them are from companies older than 34 years, only six of them is of less than 5 years of age.

Most of the respondents are from companies with the last annual sales turnover of well over RM25 million, only three of them had sales turnover less than RM 250,000.

Twenty seven of the respondents come from company with more than 300 employees, only ten of them are from the category of 5 to 50 employees within the organization itself.

Only four out of 71 respondents are from government linked companies, while sixteen are publicly owned, and 51 are privately owned.

4.1.1. Demographics

After the demographics, the statistics of variables (the eight factors of quality management practices, organizational culture and organizational performance), inclusive of the skewness and kurtosis would be displayed accordingly. Their normal Q-Q plot and detrended Normal Q-Q plot are attached in Appendix 1.

Table 4.1 : Core businesses demographics

Core business	Frequency
Chemicals and chemical products	23
Electrical machinery and apparatus	3
Food products and beverages	7
Medical, precision and optical instruments, watches and clocks	1
Metal – fabricated metal products, except machinery and equipment	3
Metal – basic metal	5
Motor – transport equipment	2
Office, accounting, and computing machinery	1
Paper and paper products	1
Radio, television and communication equipment and apparatus	2
Rubber and plastic products	3
Others	20

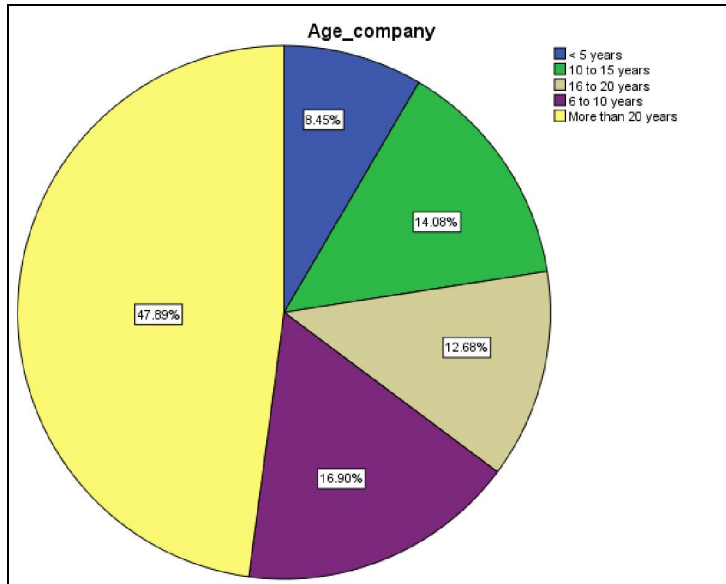


Figure 4.1 (a) Pie chart for age of company demographic

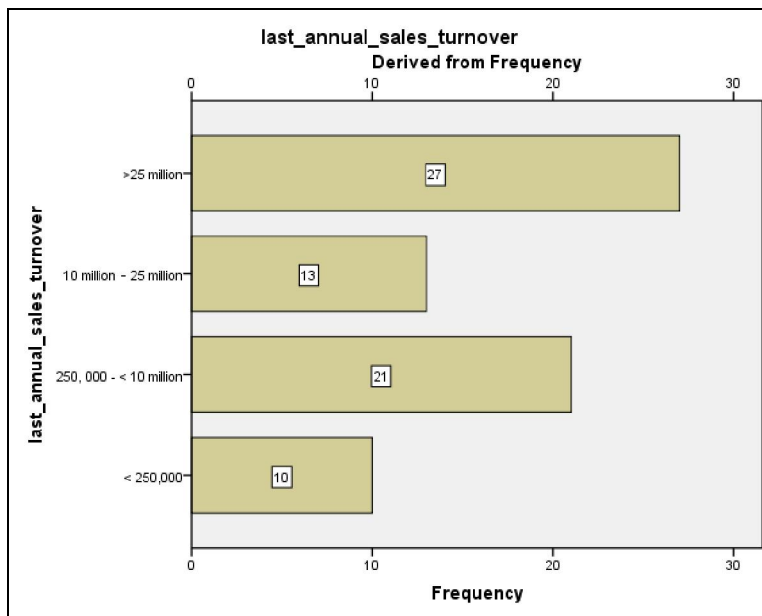


Figure 4.1 (b) Bar chart for last annual sales turnover

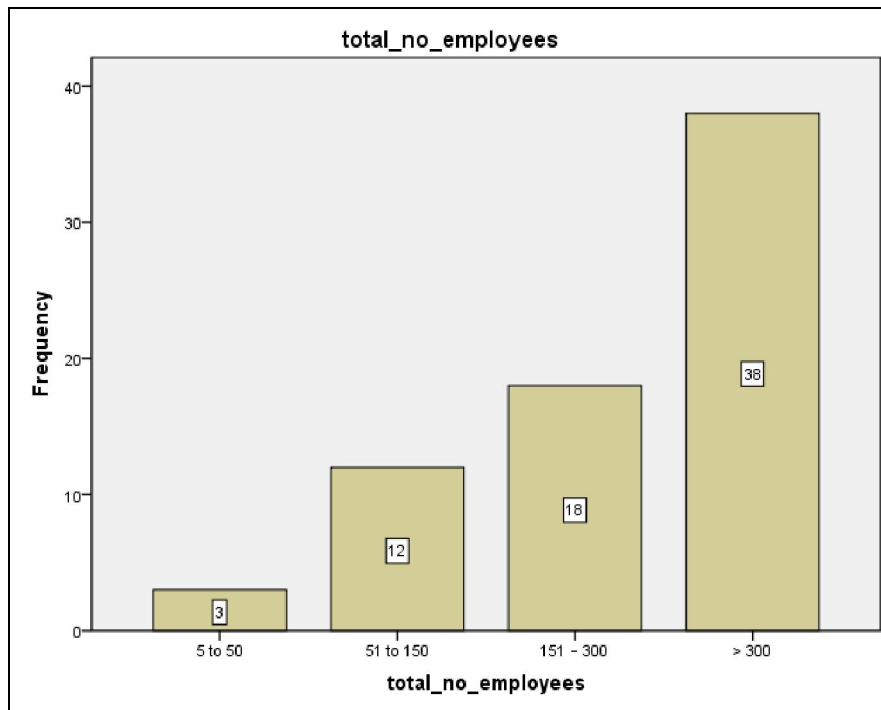


Figure 4.1 (c) Bar chart for total number of employees demographic

Figure 4.1 : descriptive statistics' charts for demographic factors namely age of company, last annual sales turnover, & number of employees.

4.1.2. Variables subjected to hypothesis testing

As indicated in the framework (in figure 3.1), there are three types of variables involved, the independent variables, the moderating variable and the dependant variable.

Under the independent variable, Quality Management Practices, there are 8 factors. Each factor has its own corresponding items. The factors are Top management support, Quality information availability, employee training, employee involvement, product or process design, supplier quality, and customer orientation. The moderating variable is organizational culture, and the dependant variable is organizational performance.

All 71 questions (items) of the questionnaire had their scores of likert points summed up under their respective group of factors.

4.1.3. Normality tests for factors of all variables

Scores summed up would then be subjected to normality testing to confirm their eligibility for further statistical analysis. The output of normality testing through skewness, kurtosis would be as displayed below. Normal Q-Q plot and detrended Normal Q-Q plot is displayed in Appendix 1.

Table 4.2 : Summary of skewness and kurtosis for factors of quality management practices.

	8 Factors for quality management practices							
	top management support	quality information availability	quality information usage	employee training	employee involvement	Product @process design	supplier quality	customer orientation
Skewness	-0.526	-0.816	-0.425	-0.470	-0.380	-0.792	-0.330	-0.684
Kurtosis	-0.515	0.494	0.059	-0.338	-0.279	0.207	-0.582	0.034

According to Table 4.2, the skewness and kurtosis value for all factors of quality management practices are all between value of -1 to 1, hence the assumption of normality for all these factors are not violated. Therefore parametric statistical analysis could be conducted.

Table 4.3 : Summary of skewness and kurtosis for factors of organizational culture.

Statistics	Factors for organizational culture			
	group	development	hierachical	rational
Skewness	-0.448	-0.458	-0.300	-0.552
Kurtosis	-0.184	-0.108	-0.495	-0.098

Table 4.3 had shown the kurtosis and skewness of organizational culture's factors, thus confirming that the factors had not violated the assumption of

normality since they are both between the value of -1 to 1. The normal Q-Q plot and detrended Q-Q plot for these variables in appendix would verify this statement as well.

Table 4.4 below had further verify the confirmation of normality assumption for the factors of organizational performance as well. Although the kurtosis value for product innovation and product quality had been more than 1, the skewness, Q-Q plot and detrended Q-Q plot had proven otherwise.

Table 4.4 : Summary of skewness and kurtosis for organizational performance's factors.

	Factors for variables of organizational performance			
	Quality performance		Innovation performance	
Statistics	Process quality	Product quality	Product innovation	Process innovation
Skewness	-0.4875	-0.8397	-0.8490	-0.3573
Kurtosis	-0.6939	1.8604	2.3476	0.0814

4.1.4. Level of implementation for quality management practices through mean of means calculation

In table 4.5 below, it is noticed that the most highly implemented practices of quality management are top management support, customer orientation, quality information availability and also product and process design (in decreasing sequence).

Employee involvement has the lowest implementation level among the eight factors, followed closely by employee training and quality information usage. Supplier quality's implementation is emphasized slightly better than employee involvement, employee training and quality information usage.

In the overall sense, all factors are considered acceptably implemented in Malaysia as all mean values are above the border value of three. However, none of the factors are considered well implemented as none of them had the mean score of five. It could be concluded that there is still plenty of room for improvement for quality management practices in Malaysia. The management could start improving the situation by working on the employee involvement, employee training and also quality information availability as all these three has a critical impact on the daily business processes throughout the organization. As we all know, daily business processes within an organization is actually the gist in pronouncing the culture of the organization through its process. Therefore, mastering these few factors on top of the already better implemented factors would further strengthen the implementation of quality management practices.

Table 4.5 : Mean of means calculation for respondents under each factors of quality management practices

Factors of quality management practices	Mean of means
top management support	4.09
quality information availability	4.01
quality information usage	3.69
employee training	3.45
employee involvement	3.44
product and process design	4.00
supplier quality	3.62
customer orientation	4.08

4.1.5. Factor analysis for all variables

The assumptions that needed to be confirmed before factor analysis are namely sample size, normality, linearity, outliers among cases and variables, multicollinearity, and factorability.

The basic requisite of sufficient sample size to qualify for a good factor analysis is a minimum of five subjects per variable (Coakes, Steed & Ong, 2009). For each variable in this study, there had been sufficient sample subjects (71) to cover this prerequisite ratio. According to the skewness and kurtosis value for each variable, it is visible that assumption of normality had not been violated. For linearity, Q-Q normal plots in Appendix 1 for all factors within variables could verify that linearity is present.

As for the outliers between cases and variables, multicollinearity and factorability, it would be verified by the correlation, KMO, Bartlett's test of Sphericity and MSA respectively.

Correlation coefficients value had all been far more than the basic borderline of 0.30, therefore it could be safely said that factoring could be suitably done. (Coakes, Steed & Ong, 2009)

All the items for variables had been subjected to factor analysis to identify the items with more than 0.5 factor loadings. Those with factor loadings lower than .35 would be dropped from further analysis. Moreover, those items that had multiple loadings, where the second loading is more than 0.35 would also be dropped. KMO measurement would have to be more than 0.60, and significance for Bartlett's test of sphericity would have to be less than .05 (Arumugam, Ooi, & Fong, 2008). MSA values had to be over 0.50 to ensure that measures of sampling had been adequate. (Coakes, Steed & Ong, 2009)

Factor analysis is ran individually for each factor itself, hence all items within a factor would be loaded in each individual factor analysis, subjected to principal axis factoring and Varimax rotation, in order to reveal the uni-dimensionality of the particular factor. The result is, single factor solutions had emerged for factors of all variables, ensuring uni-dimensionality for all factors.

All items for variables had undergone the factor analysis. After dropping the items with loadings lower than 0.5 and multiple loadings lower than .35, items left were subjected to factor analysis again. All resulted KMOs had been more than 0.6, with significant Bartlett's test results. Of all the factors for all variables, only the factors employee involvement, supplier quality and customer orientation had each dropped a measuring item, namely EMP_INV3, Supplier_Q2, & CO6 The percentage of variance explained for all factors are more than 60%, thus all items are successful measures for their purpose of existence. (Arumugam, Ooi, & Fong, 2008)

For reference on the summary of all factor analysis output, it is available in Appendix 5.

4.1.6. Reliability analysis

Table 4.6 below had summarized all the Cronbach α values of all factors for the variables, where all of them had been safely over the value of 0.70, thus verifying the reliability of the construct itself.

Table 4.6 : Summary of Cronbach alpha's values for all factors under each variable.

	Variable	Factors	Cronbach α
1	Quality management practices	Top management support	0.898
		Quality information availability	0.834
		Quality information usage	0.704
		Product or process design	0.914
		Employee training	0.819
		Employee involvement	0.789
		Supplier quality	0.834
		Customer orientation	0.884
2	Organizational culture	Group	.855
		Development	.788
		Hierarchical	.709
		Rational	.877
3	Innovation performance	Product innovation	.895
		Process innovation	.933
4	Quality performance	Product quality	.910
		Process quality	.743

4.2. Analyses of measures

4.2.1. Multiple Regression Analysis

There are two stages of multiple regression analysis. For the first stage, the relationship between variables quality management practices, organizational culture and organizational performance had been investigated. For the second stage, the variables involved are quality management practices, organizational culture, innovation performance (part one) and quality performance (part two). The method of Baron and Kenny (1986) is used. The result for stage one is as follow in table 4.7.

Table 4.7 : Summary of multiple regression analysis between variables quality management practices, organizational culture and organizational performance.

	independent	Dependant	beta	Sig
step 1	quality management practices	organizational performances	0.648	0
step 2	quality management practices	Culture	0.761	0
step 3	culture	organizational performances	0.696	0
step 4	quality management practices	organizational performances	0.282	0.033
	culture		0.481	0

This result shown in table 4.7 shows that there are significant linear relationship between quality management practices and organizational performance. Moreover, once culture and quality management practices are both included in the multiple regression analysis, the beta value for quality management practices in step 4 is lower than in step 1, though still significant. This indicates that organizational culture is a partial mediator between quality management practices and organizational performance.

For the second stage part one, results are shown in table 4.8 below.

Table 4.8 : Summary of multiple regression analysis between variables quality management practices, organizational culture and innovation performance, with the proposed mediator being organizational culture.

Dependant variable as innovation performance				
	independent	dependant	beta	sig
step 1	quality management practices	innovation performance	0.53	0
step 2	quality management practices	culture	0.76	0
step 3	culture	innovation performance	0.60	0
step 4	quality management practices	innovation performance	0.16	0.28
	culture		0.48	0

The hypothesis to prove here is that culture is a mediator, in which this hypothesis had been proven to be valid when quality management practice is no longer significantly related to innovation performance when organizational culture had been added into the multiple regression analysis.

We move on to stage two part two, where the dependant variable would be quality performance. The output is shown in table 4.9.

Table 4.9 : Summary of multiple regression analysis between variables quality management practices, organizational culture and quality performance.

Dependant variable as quality performance				
	independent	dependant	beta	sig
step 1	quality management practices	quality performance	0.71	0
step 2	quality management practices	culture	0.761	0
step 3	culture	quality performance	0.713	0
step 4	quality management practices	quality performance	0.386	0.002
	culture		0.419	0.001

There is a significant linear relationship between quality management practices and quality performance. From the results in table 4.9, it is visible that beta value for quality management practices is lower in step four compared to step one, while still remaining significant in the step four multiple regression analysis. This signifies a partial mediating effect of organizational culture in the linear relationship between quality management practices and quality performance.

4.2.2. Pearson Correlation analysis

For Pearson correlation analysis, there would be a full correlation analysis and a partial correlation analysis. The difference would be on organizational culture variable, where in partial correlation it would act as a control. On the other hand

in full correlation, the results would show the correlation between all variables with zero control.

Full correlation analysis had been conducted in two stages as well, with the first stage involving organizational performance, organizational culture and quality management practices. The second stage would be between quality management practices, organizational culture with innovation performance and quality performance.

Table 4.10 : Correlation coefficients for quality management practices, organizational culture, and organizational performance. (first stage)

	organizational performance	organizational culture	quality management practices
organizational performance		0.70 **	0.65 **
organizational culture	0.70 **		0.76 **
quality management practices	0.65 **	0.76 **	

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

Strong correlation relationship, with coefficient values above 0.60 (significant at 0.01 level) had been shown between all three variables in table 4.10.

Further correlation analysis at stage two involving quality management practices, organizational culture, innovation performance and quality performance is shown in table 4.11.

Table 4.11 : Correlation analysis between quality management practices, organizational culture, quality performance and innovation performance (second stage)

	quality management practices	organizational culture	quality performance	innovation performance
quality management practices		0.76 **	0.71 **	0.53 **
organizational culture	0.76 **		0.71 **	0.60 **
quality performance	0.71 **	0.71 **		0.75 **
innovation performance	0.53 **	0.60 **	0.75 **	

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

From table 4.11, it is noted that innovation performance has the lowest correlation with quality management practices. Organizational culture has the highest correlation relationship with quality management practices. In overall, quality performance has a higher correlation relationship with both quality management practices and organizational culture compared to innovation performance.

In short, other than innovation performance, all other variables are strong in correlation relationship between each other as the coefficient values are all more than 0.60.

A partial correlation had been conducted between quality management practices with organizational performance, with organizational culture as a control. The output is as shown in table 4.12.

Table 4.12 : Summary of correlation coefficients for quality management practices and organizational performance, with organizational culture acting as a control

Control Variables		organizational performance	quality management practices
organizational culture	organizational performance		0.2548*
	quality management practices	0.2548*	

* correlation is significant at 0.05 level.

From the low coefficient value of less than 0.30, the correlation relationship between quality management practices with organizational performance is considered weak when organizational culture had been a controlled factor.

Table 4.13 : Summary of correlation coefficients for quality management practices, innovation performance and quality performance, with organizational culture as a control.

Control Variables			quality management practices	innovation performance	quality performance
organizational culture	quality management practices	Correlation		0.13	0.36
		Significance (2-tailed)	.	0.28	0.00
	innovation performance	Correlation	0.13		0.58
		Significance (2-tailed)	0.28	.	0.00
	quality performance	Correlation	0.36	0.58	
		Significance (2-tailed)	0.00	0.00	.

When organizational performance had been split into two dependant variables namely innovation performance and quality performance, with organizational culture as a control, as shown in table 4.13, quality performance had shown a 0.36 coefficient value with quality management practices. On the other hand,

innovation performance had shown a total insignificant correlation relationship with quality management practices, further confirming the findings of multiple regression analysis that innovation performance needs organizational culture as a mediator in order to be related to quality management practices.

4.3. Summary of research result

With the mean scores highest at a value of four, one can conclude that the level of implementation for quality management practices in Malaysia still has ample space for growth. Still, it could not be denied that at least all respondents' companies are faring quite well as all practices are implemented above average level of three out of five (value of means). The current few factors that had fare well in this study are top management support, customer orientation and also supplier quality. The good news is, top management support is where the implementation of quality management practices should start (Low & Omar, 1997).

The critical few factors to work upon in quality management practices itself would be on employee involvement, quality information usage and also employee training, for their mean of means scores had ranged slightly above three. These three factors are indispensable, alongside with the rest of the factors, in determining how well had quality management practices been implemented in an organization. That is what Low and Omar (1997) had realized in their study in Singapore. The reason to highlight Low and Omar's study, on top of the other list of authors who had also verified the importance of all the eight factors in quality management practices, is due to the close background between Singapore and Malaysia.

These three factors, employee involvement, quality information usage and employee training, seemed to reflect the working levels of an organization all throughout its levels of hierarchy. One might question employee's loyalty as all these three factors involved extensive training and information usage empowerment from the employer to the employees. However, there is one crucial point, there is a need to start somewhere. If ISO9000 organizations readily train their employees to provide them sufficient knowledge to use quality information tools available, tying those information available to their daily work tasks, this would empower them with the best rated information to complete their daily tasks, making daily business processes much smoother, which could increase employee's loyalty and sense of pride to belong to the organization. By making these three factors part of daily business transactions and processes, it would embed it into part of the organization's culture. This, would echo what Low and Omar (1997) had mentioned, that culture is initiated by embracing the quality management practices, and would aid the consistency of organization's daily business performances standard..

After verifying the normality of all variables, it is confirmed that parametric statistical analysis could be conducted. The unidimensionality and reliability of the measures for quality management practices had been further confirmed using factor analysis and also by obtaining the Cronbach alpha values.

Then, multiple regression analysis had been conducted in two stages, one with dependant variable as organizational performances, the second with both innovation performance and quality performance as the dependant variables. The method by Baron and Kenny (1986) had been used to confirm whether is organizational culture a valid mediator.

For stage one, multiple regression analysis had revealed that organizational culture partially mediates the relationship between quality management practices and organizational performances.

For stage two, it is found that organizational culture is a partial mediator between quality management practices and quality performance. On the other hand, quality management practices became a complete mediator between organizational culture and innovation performance.

Full correlation analysis had revealed that all variables of quality management practices, organizational culture and organizational performances are strongly correlated with each other. Innovation performance is only fairly correlated with quality management practices and organizational culture.

When organizational culture is controlled in the partial correlation analysis, the correlation coefficient between quality management practices and organizational performance are lower than 0.30, despite being significant at the level of 0.05.

To take things further, organizational performances had been split into two variables, namely innovation performance and quality performance, with organizational culture as a control. Under this prerequisite, quality management practices is weakly correlated with quality performance, and there is no significant correlation between quality management practices and innovation performance.

4.4. Testing of hypothesis

H1 : Quality management practices significantly affects organizational performance.

From the linear regression analysis output in table 4.7, it had been proven that quality management practices has a significant predicting capability upon organizational performance. Hence this hypothesis had been fulfilled. Demirbag *et al* (2006) had conducted a study that confirmed this hypothesis, and further verified that the organizational performance could significantly influence the financial performance of the organization. Macinati (2008) had also discovered similar relationship to this hypothesis.

H1(a) : Quality management practices significantly affects innovation performance.

Table 4.8 contains the statistical output that shows that quality management practices has a significant influence on innovation performance. Hence this hypothesis had been accepted, confirming the findings of Petroni *et al* (2003) where quality management practices had helped in R&D productivity where innovation is critical. Prajogo and Sohal in 2002 study had proven that quality management is significantly related to innovation performance, though on a weaker scale when compared to the relationship between quality management practices with quality performance. Their argument for this trend to happen is that quality management practices are meant for quality performance after all, indicating that the fact that quality management practices is related to innovation performance could be seen as an additional bonus.

In 2006a, Prajago and Sohal had realized that TQM had a significantly strong influence in predicting quality performance, but none on innovation performance. Yet, they had also realized that TQM had a significant strong effect on R&D development, and R&D development had a strong significant influence as a predictor upon innovation performance.

Singh and Smith's study in 2004 had contradicted the findings of Prajago and Sohal of 2002 but echoed the study of 2006a, which revealed that there is insignificant evidence to link quality management practices in a direct causal relationship with innovation performance. They had suggested that there could be a more complex relationship that could link quality management practices to innovation performance. Under such grounds, there is a need for further reference to the hypothesis 2a in this study. Still, it is to be noted that Sadikoglu and Zehir (2010) had further confirmed that there is a positive significant relationship between TQM and innovation performance alongside with firm performance. This finding had further on been echoed by Hung *et al* in 2011.

While both studies from Projago and Sohal (2002) and Singh and Smith (2004) could be right, Fred Hewitt (1995) and Bossink (2002) had both reminded us an important limiting factor when it comes to organization's daily performance, that is time. They had both stresses the importance of time factor in their case studies, stating that innovation is crucial, only when it is timely. That is when quality management practices wins in critical point of time, it helps the situations by giving it a standard code of actions. The interesting point given to ponder here is that a timely action might not be the best action, but given the situations present, is it better than no action or late reaction? It is undeniable that some innovation

steps need time, and sometimes, time is a luxury that a situation might not be able to afford.

Kaynak and Hartley (2005) had mentioned that high performing high technology firms had vigorously implemented quality management practices to instill the culture of quality that would ultimately help them fuel the sense of innovation. Again, we come back to the similar bottleneck where there is a need to further refer to hypothesis testing of hypothesis 2a.

H1 (b) : Quality management practices significantly affects quality performance.

This hypothesis had been proven and accepted when the output in table 4.9 had proved that quality management practices significantly influences quality performance. This finding confirms what Arumugam, Ooi, & Fong (2008) and Kull & Wacker (2010) had found in their studies. Kaynak (2003) had also confirmed this relationship, so did Prajogo and Sohal (2004a) in their research in determining the quality management practices in organizational strategy could be readily related to the quality performances. In 2006a, Prajoga and Sohal had again verified that quality management practices strongly and significantly predicts quality performance.

Fotopoulos and Psomas (2010) had also further verified that factors within quality management practices are significantly predicting quality improvements. They had measured quality performance in the name of quality improvements.

H2 : Organizational culture mediates the relationship between quality management practices and organizational performances.

It is proven in table 4.7 that organizational culture partially mediates the relationship between quality management practices and organizational performances. This had been further confirmed in the correlation analysis shown in table 4.10, when there is still a weak but significant correlation relationship between quality management practices and organizational performance after organizational culture had been controlled. This finding echoes results from Kunnanatt (2007) and Petroni *et al* (2003) where after the implementation of quality management practices, it would create a culture top down throughout the organization and ultimately influence the organizational performance. Prajago and McDermott (2011) had further confirmed that organizational culture is significantly related to organizational performance, as displayed in this study.

H2(a) : Organizational culture mediates the relationship between quality management practices and innovation performance.

Table 4.8 shows that organizational culture fully mediates the relationship between quality management practices and innovation performance. This result from multiple regression analysis had been further confirmed by the partial correlation result shown in table 4.13 where the correlation relationship between quality management practices and innovation performance had been insignificant the moment organizational culture had been controlled. This result had confirmed the indispensable function and existence of organizational culture that would determine how willing the organization is to learn and grow together as a unit,

thus the attitude vital for innovation to breed and grow. (Skerlavaj, Song, & Lee, 2010).

Therefore, with the prior studies of Kaynak and Hartley (2005) and Singh and Smith (2004), it could be safely said that quality management practices is crucial in order to instill the culture of quality, in which the culture would drive the organization in producing innovation performance.

To strengthen this recent last argument further, Petroni *et al* (2003) had mentioned that back then in the 1980s, the first department of organizations in United States to start implementation of quality management practices is actually the research and development departments. Only when results had been promising, then had the decisions and processes been trickled down to engineering, production and marketing. He had further quoted companies that had started this trend, naming 3M, Eastman Kodak, and Xerox. In other words, Prajogo and Sohal (2004b) has a point when they highlighted that how quality management practices could evolve alongside the strategy of the organization, thus lifting the organization in the transition from a total quality organization to a total innovation organization. As such, it is understood that only an organization that is very strong in its quality management practices implementation could allow for an evolving process that this transition towards a total innovation organization would require of it.

H2(b) : Organizational culture mediates the relationship between quality management practices and quality performance.

Organizational culture is a partial mediator between quality management practices and quality performance, as indicated in table 4.9 depicting the output

of multiple regression analysis. This trend is further confirmed when table 4.13 had shown that there is still a weak but significant correlation relationship between quality management practices and quality performance after organizational culture had been controlled. Zu, Robbins and Fredendall (2010) had drawn out in their study how quality management is significantly linked to organizational culture, and further Prajogo and McDermott in 2011 had verified further how organizational culture could significantly affect quality performance of an organization.

Organizational culture, by having a weak though significant role as a mediator, suggest that it is not a mandatory factor in quality management practices' implementation, though it does encourage and help foster it, no less. This is verified by Baird *et al's* study in 2011. They had investigated which type of organizational culture is significantly predicting the level of implementation for quality management practices, and then further found out that quality management practices' relationship with quality performance, which is significant.

In their study, Baird *et al* had also mentioned that by implementing quality management practices, organizational culture is an ever evolving factor, as the organization continues to embrace the practices and further evolve. Under this line of thought, an idea inspired is that could it be that given the current level of implementation, organizational culture had not yet evolved into the state where it totally mediates the relationship between quality management practices and quality performance? However, such a question could only be possibly answered by a prolonged study that spans across a few snapshots along the time line to capture the evolving trend.

5. Conclusion and recommendations

5.1. Summary and conclusion

This study utilizes the survey tool that had been developed extensively by Saraph *et al* (1989) and Rao *et al* (1999). It is based on the perception of the people within the organizations involved on how much of the items mentioned in the survey had been applied and practiced in the organization's daily operation processes. Once all items had been concluded and the statistical analysis had been done on the result, the overall mean values could detect the level of implementation for quality management practices locally. Then, by further collecting information about organizational culture and organizational performance, analysis could be done between the variables to gauge the relationship that could exist between quality management practices, organizational culture and operational performances.

From the pattern of behaviors derived from this study through multiple regression analysis, it is interesting to note that organizational culture is essential to allow for innovative performance from organizations. Compared to innovation performance, quality performance is just partially affected by organizational culture. Quality is about doing the existing job to its best, but it is innovation that allows for the company to continue growing and evolve according to how the trends could have shaped it.

However, the means of means had also reflect the level of quality management practices here is not yet thoroughly embedded into all levels thoroughly in the organization processes. In order words, the level of integration for quality management practices in Malaysia had been rather on the slightly above average

side, and still has ample room for improvement, as per what was previously mentioned.

All in all, Malaysia is still in a developing phase as a hub to grow quality embedded organizations. From the trend divulged in this study, our organizations are on the right track as top management support and customer orientation factors had all shown above average level of implementation. Given time and effort, there is still a very promising tendency for growth, as it is common for organizations that had a sight set on quality to keep trying to grow for the better, for that is the gist of it, and we are already half way there.

5.2. Limitations of study

There are three limitations within this study.

Firstly, there is a lack of proper coverage for the whole manufacturing industry due to inconvenience of sampling.

Secondly, the lacking of a proper structural equation modeling test, where a proper one should be used to analyze this data to discover further possible patterns that both correlation and multiple regression analysis had not been able to unveil. This limitation is also caused by the limitation of sample size, where a healthy good fit is only viable when the number of samples exceed two hundred to three hundred.

Thirdly, the lack of proper time frame to extensively allow for proper cross validation of samples within the sampled companies. Should there be sufficient time and resources, there should be at least three to five samples collected from each company to allow for cross verification of the data collected from that similar source. Moreover, due to the cross sectional nature of this study, a prolonged pattern that is only possible in a longitudinal study is plausible to investigate the actual pattern of quality management evolution in Malaysia.

5.3. Suggestions for future research

There should be an even larger extension of data sampling pool, allowing for a better coverage and generalization of research. A larger sample pool would also allow for a better statistical analysis research. Hence future research could work on a better wider approach to enlarge the current sample pool and stage.

Moreover, this study is using a snapshot approach. Future researches could envisage a study that compares a few snapshots across a time frame to allow for comparison of performance and integration degree for both quality management practices and organizational performance.

The findings of this study had revealed that the quality management practices could be linked linearly to organizational performance in a causal relationship. Further research should probe more on the possible causal relationship that links the factors of quality management practices with organizational performance specifically.

Another interesting idea inspired by this study is that would innovative culture contribute to quality performance significantly? If so, how strong would the causal relationship be? Maybe a further study could be done to reveal the possible trend of this question.

5.4. Implications

This study is an attempt to investigate how deeply ingrained is the quality management practices in ISO certified companies in Malaysia. The degree of integration is viewed by how related is the quality management practices to the outcome of organizational performance, and how much organizational culture would affect this relationship.

From this study, it would help managers and company strategic planners in deciding what culture and business process within the organization to focus upon in order to nurture the right environment to facilitate the growth aimed for in their business strategy.

On the other hand, the study could also help strategists reflect on their current stand of their organization, are they where they had wanted to be. This process of realization had happened when the people involved in the organization had done the study's questionnaire that is actually a self assessment for the organization. Change is like a drop of water in a pond, ripples are the effect that had started from that drop of water. Only when the people within the organization have an idea about where they stand then they could decide where to next.

This study had significantly proved that its questionnaire tool that had been developed in United States could be significantly related to the organizational performance here locally through correlation analysis. Such result would mean that the questionnaire could also serve as an effective evaluation tool for organizations in Malaysia.