Comparing Quality Management Practices between the US and Mexico

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Abstract

The purpose of this paper is to compare quality management practices between the US and Mexico. The survey instrument has been designed based on the Malcolm Baldrige National Quality Award (MBNQA) criteria. The result shows that social aspects of quality, including quality citizenship and quality responsibility are different between the US and Mexico. Furthermore, the result of regression analysis shows that while there are differences between the critical success factors of quality management practices within US and Mexico, "soft side" of quality management, including supplier quality, strategic planning of quality and social aspects of quality has significant effect on quality results and customer satisfaction.

1. INTRODUCTION

Globalization and international trade, along with advances in information technology has dramatically increased competition. To compete in a global market, firms need to be equipped with the new technology, up-to date information, skillful employees, and advanced managerial skills. Competing in the global market needs new management philosophies and way of thinking.

The concept of Total Quality Management (TQM) has been developed as the result of intense global competition. Companies with international trade and global competition have paid considerable attention to TQM philosophies, procedures, tools and techniques. The importance of international quality management research first appeared in the journal of Decision Sciences [24]. However, little empirical research has been done in the international quality management [27], especially in the cross-cultural studies [34]. While most research on quality management has been focused on comparison of practices between the US and Japan in early 1990, recently the research in quality management has been extended to other countries and regions in the world [28]. However, most of these studies use different instruments and constructs for comparing quality management practices across countries. Accordingly, the need for developing instruments for comparing quality management practices across countries based on a generic and acceptable framework for quality management is clear.

The development of Malcolm Baldrige National Quality Award (MBNQA) criteria as a basis for quality management practices and research has been gained attention in recent years in the US [24], [4]. The application of MBNQA is not just limited to the US. The universality of MBNQA and its relationship to many quality management constructs has made Baldrige model a useful framework for studying quality management practices [32]. In fact, most national and international quality awards have been influenced by Malcolm Baldrige criteria [7],[9], including European Quality Award, the Mexican National Quality Award, the Brazilian National Quality Award, and the Egyptian Quality Award. Accordingly, cross-cultural comparison of quality management based on MBNQA criteria could be helpful in understanding how countries position quality management practices.

The purpose of this article is to compare quality management practices between the US and Mexico, based on the MBNQA. More specifically, this research focuses on understanding the similarities and differences between of quality management implementation between the US and Mexico as well as the critical success factors of quality management.

2. LITERATURE REVIEW

The importance of total quality management in the manufacturing and service organizations has been significantly increased within the past twenty years. Firms with international trade devote special attention to the tools and techniques recommended by quality management. Early studies on international quality practices were mainly focused in developed countries such as the US and Japan [1], [8], [10], [16], [21], [22]. Moreover, the empirical literature has extended its scope by studying and comparing quality management practices in other developed and developing countries, such as US and Taiwan [24], Asia and the South Pacific [3], Japan, Korea, and Denmark [6], East and West (Russia, Taiwan, Japan, Korea, Finland, Estonia, Denmark, India, Sweden, England, and NewZeland) [6], Costa Rica and US, US, Mexico, China and India [26], US and Mexico [2], Canada and Mexico [15], UK and Ireland [23], West, East, and Russia [33]. Most of the above studies attempted to understand the critical factors of TQM. Due to the lack of the development of valid instruments, the results of such studies can not be generalized, yet providing insights about quality management in the international context. As [34] indicated, the question regarding the universality of quality management practices has not been answered yet and more empirical, cross-country and industry-specific research is needed in quality management.

Based on the previous research, the authors are trying to fill the gap in the quality management. The present study attempts to compare quality management practices between the US and Mexico. The aim is to determine the similarities and differences between quality management practices between the US and Mexico, and understand what are the critical success factors for quality management within each country.

3. PROBLEM DEFINITION

Traditionally, research in comparative management fits within three school of thought [3]. The "culture free" hypotheses [18], the "convergence" hypotheses [14] and the "culture specific" hypotheses [19].We intend to employ the "culture free" hypotheses, indicating that, based on the MBNQA criteria, there is no difference between quality management practices between the US and Mexico.

In spite of the development of different models for TQM, little conceptualization has been done on quality management in the international and global context. The international quality management model, developed by [28] is the only quality management model that has been developed, verified, and tested in the international context. Having been framed with regard to the Malcolm Baldrige National Quality Model Award (MBNQA), the instrument consists of 9 dimensions for quality management, including:

1- Quality leadership
2- Quality information and analysis
3- Strategic planning process of quality management
4- Support for human resource and management function to quality management
5- Quality assurance of products and services
6- Supplier quality
7- Quality results
8- Customer focus and satisfaction
9- General matters (social responsibility)

4. HYPOTHESIS

The following sets of hypotheses have been developed:

First Set: Regression Analysis

H1: There is no difference between quality leadership for quality management between the US and Mexico.

H2: There is no difference between strategic planning process for quality management between the US and Mexico.

H3: There is no difference between quality information and analysis for quality management between the US and Mexico.

H4: There is no difference between support of human resource development and management function to quality management between the US and Mexico.

H5: There is no difference between quality assurance for products and services for quality management between the US and Mexico.

H6: There is no difference between supplier quality for quality management between the US and Mexico.

H7: There is no difference between quality results for quality management between the US and Mexico.

H8: There is no difference between customer focus and satisfaction for quality management between the US and Mexico.

H9: There is no difference general matters (social responsibility) for quality management in the petroleum industry between the US and Mexico.

Second Set: Regression Analysis

H10: There is no difference in the effect of quality leadership on quality results between the US and Mexico.
H11: There is no difference in the effect of strategic planning process of quality management on quality results between the US and Mexico.
H12: There is no difference in the effect of quality information and analysis on availability on quality results between the US and Mexico.
H13: There is no difference in the effect of support of human resource development and management function on quality results between the US and Mexico.
H14: There is no difference in the effect of quality assurance for products and services on quality results between the US and Mexico.
H15: There is no difference in the effect of supplier quality on quality results between the US and Mexico.
H16: There is no difference in the effect of general matters (social responsibility) on quality results between the US and Mexico.
The results of hypothesis 10-17 have been provided in Figure -1 in appendix.

5. METHODOLOGY

The Methodology adapted for our project is survey research. Surveys provide an important source of basic scientific knowledge. Surveys are powerful methods for obtaining information about many aspects of a problem or issue. The type of survey method adopted in this project is written mail questionnaires, which has the advantages to reduce bias and the researcher's own opinions will not influence the respondent to answer questions in a certain manner. This is especially true for studies involving large sample sizes and large geographic areas. The quality management framework is conceptualized in terms of nine dimensions. Subsequently, operational indicators for the nine dimensions are developed in terms of managerial perceptions.

Data were collected from the U.S and Mexico to study the relationship between the quality practices across the two countries [28]. The following steps were used to develop and validate the measurement instrument. First, the theoretical dimensions underlying quality practices were conceptualized. A questionnaire was developed to measure these constructs. The same questionnaire is used to collect data from U.S and Mexico. A five point Likert scale was used to measure all items. The population of the study in the U.S consisted of a random sample of quality managers and professionals who are members of the American Society of Quality (ASQ) .The response rate was 259 out of 1500 i.e. 17%. In Mexico, the response rate was 113 out of 200 i.e. 55%.The survey questions is a concise overview of criteria for the selection of Malcolm Baldrige awards. The results from the survey are analyzed using SPSS software to find out the relations.

6. ANALYSIS

6.1. Group comparison

Based on MBNQA model, quality management constructs have been operationalized on a five-point likert scale. Group statistic shows the number of items measuring each construct, its mean, standard deviation, and reliability values based on Cronbach's alpha. For all constructs, reliability values are greater than .88, which are acceptable for this kind of research compared to minimum recommended value of .8 [28].

We calculated the mean and standard deviation of each construct (See group statistic in Figure 1 in appendix) Then, we determined the correlation between the constructs. It shows that all of the constructs are correlated at the alpha 0.01 (See Correlation in Figure-3 in appendix). To investigate the similarities and differences between quality management practices between the US and Mexico, t-test is used. In order to test the hypothesis 1 to 9, However, we need to assume that the two groups variability is = 0 when used t-test. We are testing this at the alpha = .05 level using the Leven's test. We use Leven's test since it is not sensitive to the sample distribution. We want the p-value to be greater than alpha of .05. Table 1 shows the Lavene's Test for Equality of Variances. Because all of our tests have inverse pairings (large sample size with small standard deviation, and small sample with large standard deviation) t-tests that violate the assumption of EOV (equality of variance) should not be trusted or used. Alternative, we have the options to use non-parametric test or Welch t-test or B-F test which does not make the assumption. Variables that we are concerned about are the general matters, quality assurance, and quality information availability (they do not have the same variance, so they do not meet the assumption for using t-test). So, to compare the two groups (US and Mexico) we can use the Welch or B-F test, which relaxes the assumption of EOV, which allows us to compare the two group means on the given dependent variables (here 3 constructs of quality management). Table 2 shows the Welch and B-F test for GM, QR and QIA.

First, we use Welch Brown-Forsythe test to compare the mean of 3 variables which did not meet the assumption of normality. As Table 2 indicates, the result shows that there is significant difference between general matters of quality (social responsibility) between the US and Mexico. Accordingly, H9 is rejected. However, there is not enough evidence to reject H3 and H7 (Table 2).

For testing the means of the six other constructs of quality management, t-test has been used. As table 1 shown, none of the hypotheses is significant. Accordingly, we do not have enough evidence to reject H1, H2, H3, H4, H5, H6, H7 and H8. The results of hypothesis 10-17 have been provided in appendix. The p-value shows that all are significant predictor of quality results.

6.2. Regression Analysis

We are also interested to determine the Critical Success Factors (CSF) for quality management in the US and Mexico. Sila and Ebrahimpour (2003) address the importance of identifying CSF of quality management practices that affect firm performance. To do so, we define quality results and customer satisfaction as two outcomes (independent variables) of

quality management practices. We employ regression analysis to determine the CSF of quality management practices that affect quality results and customer satisfaction.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
QL_TOT	Equal variances assumed	2.370	.125	1.727	369	.085	1.4090	.81580	-.19524	3.01317
	Equal variances not assumed			1.643	191.185	.102	1.4090	.85770	-.28281	3.10074
QIA_TOT	Equal variances assumed	4.088	.044	-.640	369	.523	-.4874	.76217	-1.98619	1.01129
	Equal variances not assumed			-.610	192.178	.543	-.4874	.79937	-2.06411	1.08922
SPP_TOT	Equal variances assumed	1.241	.266	1.214	369	.225	.8295	.68299	-.51359	2.17251
	Equal variances not assumed			1.178	199.539	.240	.8295	.70403	-.55884	2.21775
SHRD_TOT	Equal variances assumed	3.663	.056	-1.551	369	.122	-1.5316	.98726	-3.47295	.40977
	Equal variances not assumed			-1.493	196.052	.137	-1.5316	1.02589	-3.55479	.49161
QIP_TOT	Equal variances assumed	3.178	.075	1.022	369	.308	.8353	.81751	-.77228	2.44286
	Equal variances not assumed			.989	198.476	.324	.8353	.84474	-.83053	2.50111
SQ_TOT	Equal variances assumed	2.597	.108	-.477	369	.634	-.3985	.83523	-2.04092	1.24391
	Equal variances not assumed			-.463	199.613	.644	-.3985	.86081	-2.09596	1.29895
QR_TOT	Equal variances assumed	9.460	.002	1.171	369	.242	1.0553	.90090	-.71622	2.82687
	Equal variances not assumed			1.088	182.101	.278	1.0553	.96963	-.85782	2.96848
GM_TOT	Equal variances assumed	5.495	.020	-2.465	369	.014	-1.7934	.72739	-3.22372	-.36302
	Equal variances not assumed			-2.306	184.540	.022	-1.7934	.77780	-3.32789	-.25885
CFS_TOT	Equal variances assumed	3.729	.054	.307	369	.759	.4415	1.43808	-2.38634	3.26938
	Equal variances not assumed			.288	185.941	.774	.4415	1.53211	-2.58104	3.46408

Table 1- Test of equality of variances and means

Robust Tests of Equality of Means

		Statistic[a]	df1	df2	Sig.
GM_TOT	Welch	5.316	1	184.540	.022
	Brown-Forsythe	5.316	1	184.540	.022
QR_TOT	Welch	1.185	1	182.101	.278
	Brown-Forsythe	1.185	1	182.101	.278
QIA_TOT	Welch	.372	1	192.178	.543
	Brown-Forsythe	.372	1	192.178	.543

Table2- Test of equality of means.

6.2.1. Quality results as dependent variable

We tried to predict what variables attribute to the predictability of quality results in both settings (US and Mexico). In the Mexico, the result of stepwise regression showed that general matters, quality assurance, and strategic quality planning explain more that 80 percent of variability in quality results ($R^2 = 0.71$), which is very good predictability (shown in Table 3).

Model Summary

Model	R group = Mexico (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.769[a]	.592	.588	5.80180
2	.824[b]	.679	.673	5.16755
3	.836[c]	.699	.691	5.02370
4	.843[d]	.711	.700	4.95346

a. Predictors: (Constant), QAP_TOT

b. Predictors: (Constant), QAP_TOT, GM_TOT

c. Predictors: (Constant), QAP_TOT, GM_TOT, SQ_TOT

d. Predictors: (Constant), QAP_TOT, GM_TOT, SQ_TOT, SHRD_TOT

Table 3- Regression analysis on quality results (Mexico)

We did the same analysis for the US. The results showed that quality information availability, supplier quality, and general matters (social responsibility) account for 53% of variability in quality result, which is an acceptable level shown in Table 4

Model Summary

Model	R group = US (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.654[a]	.427	.425	5.67171
2	.707[b]	.500	.496	5.31023
3	.723[c]	.523	.518	5.19458
4	.730[d]	.533	.525	5.15427

a. Predictors: (Constant), SQ_TOT

b. Predictors: (Constant), SQ_TOT, QL_TOT

c. Predictors: (Constant), SQ_TOT, QL_TOT, QIA_TOT

d. Predictors: (Constant), SQ_TOT, QL_TOT, QIA_TOT, GM_TOT

Table 4- Regression analysis on quality results (US)

Comparing the results of two models, we found that while there is difference between the critical success factors between the US and Mexico, supplier quality appeared as the common variable in both countries influencing quality results.

6.2.2. Customer satisfaction as dependent variable

In MBNQA, organizations need to achieve customer satisfaction as the result of their quality management practices and process improvement [36]. Accordingly, we developed regression analysis to relate quality management practices to customer satisfaction and to determine which constructs of quality management are significant predictor of quality management in each country.

In case of US, the result of the stepwise regression analysis showed that strategic planning of quality, social responsibility, and quality assurance of products/services are significant predictor of customer satisfaction. The R^2 is 0.72, which indicates a good predictability of the model shown in Table 5

Model Summary

Model	R group = US (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.732[a]	.537	.535	8.22822
2	.823[b]	.677	.675	6.87863
3	.843[c]	.711	.708	6.51891
4	.850[d]	.722	.718	6.41072

a. Predictors: (Constant), SPP_TOT

b. Predictors: (Constant), SPP_TOT, GM_TOT

c. Predictors: (Constant), SPP_TOT, GM_TOT, QAP_TOT

d. Predictors: (Constant), SPP_TOT, GM_TOT, QAP_TOT, SQ_TOT

Table 5- Regression analysis on Customer Satisfaction (US)

The result of the regression analysis for the data in Mexico showed that social responsibility, quality assurance of products/services and strategic planning for quality are significant predictors of customer satisfaction, which attribute to 80 percent of variability in the customer satisfaction ($R^2 = 0.799$) shown in Table 6

Model Summary

Model	R group = Mexico (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.846[a]	.716	.713	7.60141
2	.888[b]	.789	.786	6.57341
3	.897[c]	.805	.799	6.35767

a. Predictors: (Constant), GM_TOT

b. Predictors: (Constant), GM_TOT, QAP_TOT

c. Predictors: (Constant), GM_TOT, QAP_TOT, SPP_TOT

Table 6- Regression analysis on quality results (Mexico)

Overall, it is found that customer satisfaction is affected by social responsibility, quality assurance of products and strategic planning of quality in both countries. The overall regression model for quality result and customer focus satisfaction has been provided in appendix

7. DISCUSSION

The findings of this research shows that there is no difference between the quality management practices between the US and Mexico, based on the Malcolm Baldrige criteria. This support out hypotheses that quality management practices are universal and context-free, which provides support for the generalizability of quality management practices. This is in line with Spencer [36] which indicates that "quality management recommendations tend to be universal". The significant difference between social responsibility between the US and Mexico might be related to the difference in the national culture of the two countries, where national culture affects quality management practices [13], [15]. More qualitative research, especially case study is needed to investigate how social responsibility is different between the two countries.

The result of regression analysis revealed that in spite of the difference between the effect of quality management practices between the US and Mexico, supplier quality is an important predictor of quality results in both setting. This is in line with the recent trend in supply chain management and its effect on supply quality management [35]. The result supports such a trend, which supports the fact that supplier quality is an important aspect of quality results.

Our findings supports the fact that the 'soft side' of quality management, such as supplier quality, social responsibility and strategic planning of quality are important predictors of quality results in the US and Mexico. Building upon a resource based view of the firm Powel [25] empirically showed that TQM provides sustainable competitive advantage to the firms. However, such an advantage is not generated through TQM tools and techniques such as benchmarking, process improvement and benchmarking but through certain tacit, behavioral, and imperfectly imitable sources such as culture, organizational skills and empowerment. Our finding provides three sources of advantages that are non imitable and firm specific which affect quality results of firms.

8. LIMITATIONS

One of the limitations of the study is the unequal sample size of both groups. In spite of using rigorous statistical tests for comparing two groups, the difference between sample sizes between two groups may affect the selection of stronger tests. On the other hand, the result of the study can not be generalized to other regions since the study has been limited to the US and Mexico.

There is also the issue of multi-co linearity, where the independent variables are correlated with each other. The correlation table shows that the independent variables are correlated. This is due to the fact that successful quality management is achieved through interaction and interrelatedness of a group of variables.

9. RECOMMENDATION FOR FUTURE RESEARCH

As the recommendation for future research, it is appropriate to study quality management practices in different contexts and regions, such as the Middle East and Africa. Such studies will help in the generalizability of findings. There is also the issue of multi-co linearity, where the independent variables are correlated with each other.

Quality management moves beyond its traditional boundaries, the social aspect of quality management is gaining more attention. In that regard, research in quality management should consider the social aspect of quality such as social responsibility.

10. CONCLUSION

In this paper, we compared quality management practices between the US and Mexico. Using Malcolm Baldrige criteria as a framework for quality management practices, we found that there were differences between the social aspect of quality between the US and Mexico. This was an indication of the importance of social responsibility as an aspect of quality management practices.

We suggest there is a need to focus more on the more behavioral and non-imitable aspects of quality management, such as supplier selection and strategic planning of quality. Firms pursuing quality management need to understand such resources within their firm and attempt to gain competitive advantage through focusing on such non-transferable and non-imitable sources so that they can benefit form implementing quality management.

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APPENDIX:

Group Statistics

	group	N	Mean	Std. Deviation	Std. Error Mean
QL_TOT	Mexico	113	2.82035	.787986	.74127
	US	258	2.67946	.693048	.43147
QIA_TOT	Mexico	113	2.46637	.733218	.68975
	US	258	2.51512	.648947	.40402
SPP_TOT	Mexico	113	2.50000	.638217	.60038
	US	258	2.41705	.590604	.36769
SHRD_TOT	Mexico	113	3.10265	.935172	.87974
	US	258	3.25581	.847694	.52775
QIP_TOT	Mexico	113	3.67345	.767070	.72160
	US	258	3.58992	.705437	.43919
SQ_TOT	Mexico	113	2.98496	.780250	.73400
	US	258	3.02481	.722354	.44972
QR_TOT	Mexico	113	3.55398	.904062	.85047
	US	258	3.44845	.748031	.46570
GM_TOT	Mexico	113	2.54159	.722313	.67950
	US	258	2.72093	.607947	.37849
CFS_TOT	Mexico	113	2.86549	.70978	.66771
	US	258	2.84410	.69315	.37551

Figure-1 Group Statistics

Figure-2 Results of Hypothesis 10 - 17

	Hypothesis	Country	R Squares	Adjusted R Squares	Sig.	Model
1.	HYP 10 (QL_TOT)	MEXICO	0.562	0.558	0	QR=1.29+0.86QL
		US	0.348	0.345	0	QR=1.743+0.64QL
2.	HYP 11 (SPP_TOT)	MEXICO	0.492	0.488	0	QR=1.07+0.99SPP
		US	0.324	0.321	0	QR=1.706+0.72SPP
3.	HYP 12 (QIA_TOT)	MEXICO	0.450	0.445	0	QR=1.515+0.83QIA
		US	0.327	0.325	0	QR=1.789+0.70QIA
4.	HYP 13 (SHRD_TOT)	MEXICO	0.558	0.554	0	QR=1.314+0.72SHRD
		US	0.575	0.331	0	QR=1.795+0.51SHRD
5.	HYP 14 (QR_TOT)	MEXICO	0.592	0.588	0	QR=.223+0.91QR
		US	0.347	.0345	0	QR=1.205+0.63QR
6.	HYP 15 (SQ_TOT)	MEXICO	0.459	0.454	0	QR=1.212+2.50SQ
		US	0.427	0.425	0	QR=1.401+0.68SQ
7.	HYP 17 (GM_TOT)	MEXICO	0.560	0.556	0	QR=1.173+0.94GM
		US	0.314	0.312	0	QR=1.571+0.690GM

Correlations

		QL_TOT	QIA_TOT	SPP_TOT	SHRD_TOT	QIP_TOT	SQ_TOT	QR_TOT	GM_TOT	CFS_TOT
QL_TOT	Pearson Correlation	1	.679**	.831**	.704**	.639**	.582**	.651**	.641**	.721**
	Sig. (2-tailed)	.	.000	.000	.000	.000	.000	.000	.000	.000
	N	371	371	371	371	371	371	371	371	371
QIA_TOT	Pearson Correlation	.679**	1	.693**	.689**	.655**	.565**	.605**	.592**	.655**
	Sig. (2-tailed)	.000	.	.000	.000	.000	.000	.000	.000	.000
	N	371	371	371	371	371	371	371	371	371
SPP_TOT	Pearson Correlation	.831**	.693**	1	.714**	.623**	.576**	.618**	.631**	.749**
	Sig. (2-tailed)	.000	.000	.	.000	.000	.000	.000	.000	.000
	N	371	371	371	371	371	371	371	371	371
SHRD_TOT	Pearson Correlation	.704**	.689**	.714**	1	.595**	.610**	.630**	.726**	.687**
	Sig. (2-tailed)	.000	.000	.000	.	.000	.000	.000	.000	.000
	N	371	371	371	371	371	371	371	371	371
QIP_TOT	Pearson Correlation	.639**	.655**	.623**	.595**	1	.671**	.655**	.588**	.709**
	Sig. (2-tailed)	.000	.000	.000	.000	.	.000	.000	.000	.000
	N	371	371	371	371	371	371	371	371	371
SQ_TOT	Pearson Correlation	.582**	.565**	.576**	.610**	.671**	1	.658**	.620**	.677**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.	.000	.000	.000
	N	371	371	371	371	371	371	371	371	371
QR_TOT	Pearson Correlation	.651**	.605**	.618**	.630**	.655**	.658**	1	.619**	.723**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.	.000	.000
	N	371	371	371	371	371	371	371	371	371
GM_TOT	Pearson Correlation	.641**	.592**	.631**	.726**	.588**	.620**	.619**	1	.765**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.	.000
	N	371	371	371	371	371	371	371	371	371
CFS_TOT	Pearson Correlation	.721**	.655**	.749**	.687**	.709**	.677**	.723**	.765**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.
	N	371	371	371	371	371	371	371	371	371

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

Figure-3 Correlation

	Country	R Squares	Adjusted R Squares	Model
1	MEXICO	0.711	0.700	QR=0.95+0.41QAP+0.30GM+0.21SQ+ 0.18SHRD
	US	0.533	0.525	QR=.769+0.39SQ+0.20QL+0.212QIA+0.161GM
2	MEXICO	0.81	0.80	CFS=0.91+0.91GM+0.6QAP+0.46SPP
	US	0.72	0.72	CFS=.302+0.71SPP+ 0.68GM+0.29QAP+0.26SQ

Figure-4 Regression model of Quality Result and Customer Focus Satisfaction