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TOTAL QUALITY MANAGEMENT DIMENSIONS AND SME PERFORMANCE: A QUANTITATIVE APPROACH

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ABSTRACT

The objective of this study is to measure the relationship between some TQM dimensions and business performance of SMEs. The study seeks to advance the understanding of TQM and also resolves some controversies that appear in the literature concerning the relationship between TQM dimensions and performance relationship. Using questionnaire, the data for this study was drawn from 367 SMEs operating in Punjab, Pakistan. Structural equation modeling (SEM) technique was used for analysis. The findings indicate that management leadership has a significant effect on business performance of SMEs, whereas, the customer focus and continuous improvement to business performance relationship were found not significant.

Keywords: *Total Quality Management, Business Performance, SMEs*

INTRODUCTION

Small and medium enterprises (SMEs) are considered as the engine of economic growth both in developed and developing countries because they account for 80 percent of global economic growth and contribute in employment generation and poverty alleviation (Jutla *et al*., 2002). SMEs generally are the suppliers of larger organizations, as latter outsource a part of their production to these small enterprises. Therefore, there exist a dependence relationship between SMEs and larger organizations. However, it is noted that the quality of products produced are of low duality because SMEs are adhering to minimum quality standards. Which is adversely affecting the competitiveness of these larger organizations (Singh *et al*., 2010).

TQM is a holistic approach of continuous improvement by involving all the employees and under the leadership of top management to achieve customer satisfaction by providing them with quality products and services and in return achieve higher business performance (Demirbag *et al*., 2006). As observed by O'Regan *et al*., (2006) the last two decades have witnessed intense competition in the global market due to increasingly complex and dynamic business environment. The firms that provide quality products, focus on cost reduction, emphasize on increased customer satisfaction by fulfilling their needs and wants can survive and prosper well, and can exceed the other firms (Ross, 1994). On the other hand, if a firm does not provide good quality products and services, the customer will be dissatisfied, thus creating the opportunity for the competitors to attract the customers.

PROBLEM STATEMENT

TQM strategy is considered as among the most popular strategies (Douglas & Judge, 2001) that help small and large firms to create and sustain their competitive advantage Theoretically, the literature showed that the research conducted in exploring the effects of TQM practices and business performance showed confusing and mixed findings. Some of the studies that reported a positive and significant relationship between the two constructs includes (Samson & Terziovski, 1999; Brah *et al*., 2000; Hendricks & Singhal, 2001; Kaynak, 2003; Al-Swidi & Mahmood, 2012; Jabeen & Mahmood, 2014). Whereas, McCabe and Wilkinson (1998) and Yeung and Chan (1998) reported a negative relationship between TQM and business performance. Nair (2006) suggested that the inconclusive findings regarding the TQM and business performance relationship call for further extensive research work to be conducted in this area. Therefore, this research study attempted to extend the literature by further investigating the TQM and business performance relationship within the context of SMEs of Pakistan.

LITERATURE REVIEW

According to Powell (1995) TQM is considered as a strategic resource that can generate economic growth and provide the firm with sustainable competitive advantage. The correlation between TQM and business performance has been amply researched and debated. Several empirical researches show that TQM affect firm performance and competitiveness (Das *et al*., 2000, Douglas & Judge, 2001; Kaynak, 2003). In the same vein, Feng *et. al*., 2006 and Pinho (2008) considered TQM as a management

practice that provides an organization with higher performance. Researchers such as Forker *et al*., (1997); Brah *et al*., (2002) and Joiner (2007) pointed positive relationships between TQM and organizational performance whereas some researchers Yeung and Chan (1998) found negative relationship. The TQM practices have been categorized both multi dimensional and uni dimensional construct. Researchers i.e. Das *et al*., (2000) and Samson and Terziovski (1999b) considered TQM construct as a multidimensional construct, while some other researchers i.e. Arawati (2005); Arawati and Ridzuan (2001); Choi and Eboch (1998) and Douglas and Judge (2001) operationalized TQM as a uni-dimensional construct. Based on literature review the most commonly used TQM critical factors that affect the business performance are, Management leadership, training, customer focus, continuous improvement, strategic planning and process management. In this paper TQM is solicited as multidimensional construct to examine its effect on business performance.

Management Leadership and business performance

Management leadership is the most acknowledged and dominant dimensions of TQM strategy (Harrington & Williams, 2004). Hitt and Ireland (2002) explored the success of management leadership is determined by how leaders can utilize both social and human capital in the process of creating competitive advantage for a firm. According to Chuan and Soon (2000) the full commitment and crucial role played by the leadership of top management contribute to the success of any organizational initiatives. Management leadership is based on effective communication, teamwork spirit, empowerment, participative decision making process and effective training of employees (Koehler & Pankowski, 1996). The literature of TQM empirically recognized significance of the relationship between management leadership and firm performance (Arawati, 2005; Flynn *et al*., 1994; Llorens Montes & Verdu Jover, 2004; Powell, 1995; Yasin *et al*., 2004). Hence, on the basis of above arguments, the following hypothesis was proposed:

H1: Management leadership has a significant effect on the business performance.

Continues improvement and business performance

The ultimate objective of any firm be a small or large is to achieve high levels of customer's satisfaction and exceed their expectations and as a result gain higher performance. Baker (2003) stated that firms should always evaluate and assess their different managerial and technical capabilities that can contribute to achieve high level of customers' satisfaction. TQM

strategy is a management philosophy that seeks to satisfy customers through continuous improvement efforts at all organizational levels and functions by involving all the stakeholders (Benavent *et al*., 2005). Hence, firms should focus to adopt continuous improvement strategies by involving all members of the firm and covering all kind of processes (Benavent *et al*., 2005). Top management support, proper human resource management and efficient information systems are important factors to support the continuous improvement practices in the firm (Escrig-Tena, 2004). Many previous researchers i.e. Anderson *et al*., 1994; Flynn *et al*., 1995; Li *et al*., 2003; Powell, 1995) indicated that the continuous improvement practices can help the firms to achieve higher performance. The above arguments led to the following hypothesis,

H2: Continuous Improvement has a significant effect on the business performance.

Customer focus and business performance

The ultimate objective of TQM strategy is to satisfy customer's current and latent needs by providing them with quality products and services. Hunt (1995) emphasized that there should be a continuous and effective communication between customers and the firm. It was suggested that firms should develop long-life relationship strategies through a direct interaction with the customers alongside continuous monitoring of their satisfaction levels and meeting their changing needs and future expectations. By maintaining a high level of customer satisfaction through high quality and innovative products and services can create a competitive edge for the firm (Hooley *et al*., 2003). Many researchers showed that customer satisfaction is significant for the overall performance of a firm, because higher level of customer satisfaction will lead to the lower operating cost (Lee & Hwan, 2005), higher profit (Matzler *et al*., 2005) the more enhanced firm's performance (Westland *et al*., 2005). Mehra *et al*., (2001) stated that TQM is customer-oriented strategy that emphasis on customers' satisfaction and loyalty as the core of business success, generating higher profit and competitiveness. The evidences reported in the literature have supported the notion that customer focus has a significant affect on business performance (Llorens Montes & Verdu Jover, 2004; Yasin *et al*., 2004). Hence, the above arguments led to the following hypothesis:

H3: Customer-Focus has a significant effect on the business performance.

METHODOLOGY

Research Design

The study adopted a cross – sectional research design where the data were collected at one point in time (Kumar, Abdul Talib & Ramayah, 2013; Zikmund, Babin, Car & Griffin, 2013; Sekaran & Bougie, 2013). A Quantitative and correlational research approach was adopted. It aimed to test hypotheses formulated from the review of the literature.

Population and sample

Target population of this study was SMEs in Punjab province of Pakistan. The unit of analysis for this study is firm and studied through SME owner/managers.Based on the technique given by Krejcie and Morgan (1970) the total sample size of this study was 380.Random sampling technique was used for distribution of questionnaires to the respondents SMEs. A self-administered questionnaire method was used for data collection. 500 questionnaires were administered, a total of 367 were complete questionnaires were received representing 73 percent response rate.

Measurement

The questionnaire was structured according to the objectives of the paper. The items in this study were adopted from previous researchers work. Business performance items were adopted from (Valmohammadi, 2011) and TQM items were adopted from Anderson & Sohal (1999) and Sureshchandar (2002). All items adopted were measured on a 5 point Likert scale ranging from, ranging from 1 (strongly disagree) to 5 (strongly agree). Experts opinion was sought to ensure the face and content validity of the instrument.

Analysis Method

Structural equation modelling (SEM) was employed to conduct the analysis on the data obtained from SMEs. Several researchers i.e. Eris and Ozmen (2012), Gorondutse and Hilman (2013), Suliyanto and Rahab (2012) adopted SEM as data analysis technique in their studies. SEM is a two-step approach, consisting of the measurement model and structural model(Anderson & Gerbing, 1988; Hair et al., 1998). For the measurement model, through confirmatory factor analysis the validates the measurement model is validated. Additionally, construct validity,

reliability, convergent validity, discriminate validity and predictive validity ar also tested in this step. After validating the measurement model in the first step, the structural relationship between latent (unobserved) variables is validated, and model fit is estimated in the second step.

Goodness of measures

The construct reliability in this model is assessed by computing the composite reliability (CR) for each construct after employing the maximum likelihood estimation. Fornell and Larker (1981) criteria was used in the computation of CR index in conjunction with the reliability calculation as illustrated in Table 1. So, the average variance extracted (AVE) were evaluated for each construct (Anderson, 1982; Bagozzi & Lynn, 1982; Fornell & Larcker, 1981; Hair, Anderson, Tatham & Black, 1998). AVE was used to measure convergent validity (Fornell & Larcker, 1981; Hair *et al*., 1998; Shehu & Mahmood, 2014a) suggested convergent measures should contain less than 50 percent error variances implication that AVE should be 0.5 or above. Hair *et al.,* (1998; 2010) cutoff value of 0.70 and 0.50 for CR and AVE respectively was employed. The CR value ranges from 0.690 to 0.794, and the factor loadings were between 0.524 to 0.912 ($p < 0.05$), and the AVE ranged from 0.575 to 0.821 which has met the minimum verge set (Fornell & Larcker, 1981; Hair *et al*., 1998). The Average variance extracted was used in this study in order to assess the convergent validity as recommended by Hair *et al*., (2010). The examination show how the indicators of the construct converged and share the same variance. Similarly, the indicators are expected to converged and share a high proportion of variance on a common point, the latent constructs.

Table 1

Validity and Reliability

Variable	Indicators	Loadings	Composite Reliability	AVE
Business performance	BP01	.821	.794	.549
	BP06	.631		
	BP02	.600		
	BP05	.575		
Leadership	L01	.811	.750	.600
	L02	.737		

(continue)

Variable	Indicators	Loadings	Composite Reliability	AVE
Customer focus	CF02	.795	.716	.558
	CF04	.696		
Continous improvement	CI03	.803	.690	.530
	CI04	.644		

This study also assesses the discriminant validity. Discriminant validity as the name denotes, is fundamentally concerned with the degree to which a given construct is different from other construct (Hair *et al.*, 2010). However, high level of discriminant validity shows that the latent construct is peculiar and captures some phenomena as against others. One of the ways of computing discriminant validity is to compare the square root of a given construct with the whole correlation of that construct, and AVE is expected to be greater than the construct correlation (Fornel & Lacker, 1981; Shehu & Mahmood, 2014b). Table 2 below indicated that all the square root of AVE ranging between 0.728 to 0.774 were greater than the value of the construct in the correlation matrix. Thus, this indicated that all constructs share more variance with their items than with other constructs, which support discriminant validation

Table 2

Discriminant Validity

	BP	Leadership	CF	CI
BP	**.740**			
Leadership	.483	**.774**		
CF	.161	.327	**.746**	
CI	.368	.267	.204	**.728**

Model Testing

The model fit was assessed using a series of indices recommended by Hair et al., (2010); Brian (2006) – the DELTA2 (Bollen, 1989) good-of-fit index (GFI) and the root mean square error of approximation (RMSEA) indices. A fit to the data was achieved for the GFI = 0.967, RMSEA 0.055 as indicated in table 3.

Table 3

Fit indices for the Measurement Model

Fit Indexes	Expected	Achieved Values	Sources
DF			
X^2		60.540	
Bollien – stine P	<0.05	0.001	
GFI	>0.90	0.870	Hair *et al*., (2010); Brain (2006).
AGFI	>0.90	0.801	
GFI	>0.90	0.967	
RMSEA	< 0.08	0.055	

Hypothesis test and Discussions

The present study employed a structural equation modeling (SEM), with the purpose of examining the relationship between leadership, customer focus, continuous improvement and business performance of SMEs in Pakistan. This method becomes real, especially in the simultaneous explanation of a series of related variables in managerial and behavioural matters (Cheng, 2001). The most fundamental feature of SEM studies is that they are fully based on theory and able to check specific hypotheses relationship. Structural equation modelling (SEM) was performed using the maximum likelihood method to test the hypotheses. This procedure permitted an assessment of the reliability of the measures, as well as an assessment of the degree to which the observed relations among variables fitted the hypothesized network of causal relationships, as shown in Figure 1. One of the techniques which used in SEM studies is parceling. Bandalos and Finney (2001) mentioned that among the most frequently confronted situations concerning the reasons for use of the item parceling comes the number of variables on the scale and insufficiency of the number of universal units (Holt, 2004). Kline (1998) expresses that, if sample is <100, a small-scaled volume is referred to and a limited number of analyses are permitted; if sample is 100-200, a midscale volume is referred to, if sample is >200, a large-scaled volume is referred to and thus, more meaningful results can be achieved as the number of samples increases. Again, it is mentioned in research studies related to this scale that if the ratio of sample volume to the number of items is 5:1, statistically suspicious. Therefore, a sample of 367 which represent 73 percent is regarded as a good sample for the conduct of structural equation modelling (SEM) technique of data analysis.

Table 4

Hypothesis Test

	Estimate	S.E	C.R	P	Decision
Bus Prf <--- Lead	.464	.132	3.506	***	Supported
Bus Prf<--- Cst focs	1.257	.780	1.611	.107	Not supported
Bus Prf<--- con Imp	.030	.174	.174	.862	Not supported

Figure1: Measurement Model

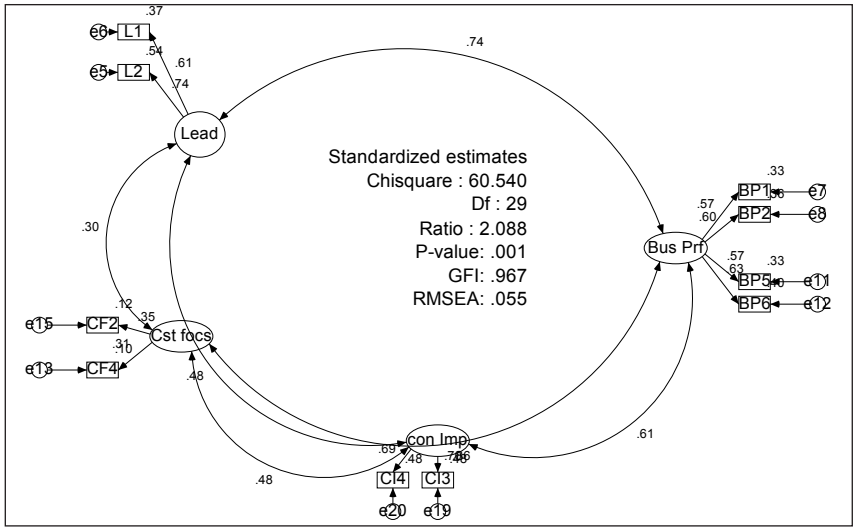
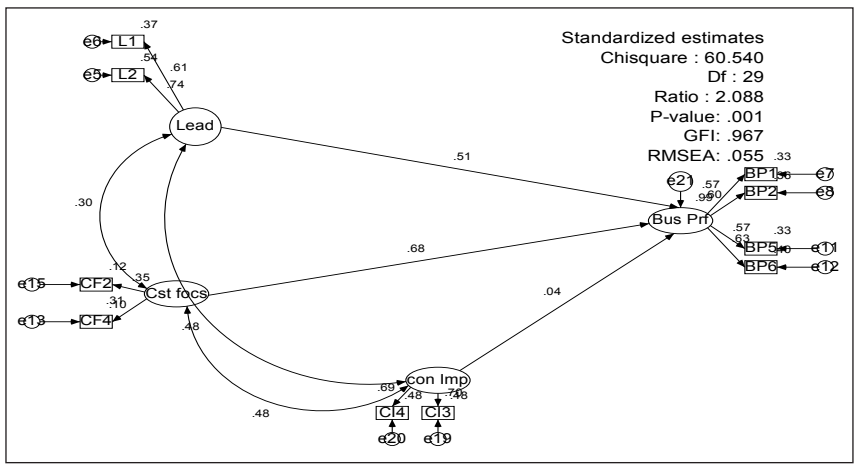


Figure 2: Hypothesized Model



DISCUSSIONS AND RECOMMENDATIONS

The small and medium enterprises are considered as the engine of economic growth. The significant role of SMEs is increasingly acknowledged throughout the world in accelerating the economic growth. This study examines the factors which are exclusively contributing their role in the success of business performance of SMEs.These factors are management leadership, customer focus and continuous improvement. The finding from the study indicated that management leadership has a significant effect on business performance of SMEs, whereas, the customer focus and continuous improvement to business performance relationship were found not supported. This research finds that management leadership is the most important factor that affects the SMEs success. The results validated the previous studies in which it was concluded that management leadership performance has significant relationship with business performance (Arawati, 2005; Flynn *et al*., 1994; Llorens Montes & Verdu Jover, 2004; Powell, 1995; Yasin *et al*., 2004). Management leadership is the most dominant dimensions of TQM strategy to create competitive advantage for a firm. The findings of this study suggests that managers and practitioners should be more concerned to take a more dynamic approach towards TQM, for the sustainability and effectiveness of their firm to meet the future challenges.

In contrary to proposed hypothesis, the findings showed that customer focus (CF) was not found to be a significant predictor of business performance. There is much evidence in the literature indicating that customer focus can result in higher business performance. The result of this study contrasts the findings of the existing studies (Jacob *et al*., 2004; Llorens Montes & Verdu Jover, 2004; Madu *et al*., 1995; Yasin *et al*., 2004). The costumers are not given the deserved attention, one plausible reason that explains this finding is that in the high competitive business environment, firms focus on addressing the current customer's needs only and do not invest to focus on future needs of customers. The finding of this study also reported the insignificant effect of the continuous improvement on the business performance. The result is in contrary to the findings of the previous researchers (i.e. Benavent *et al*., 2005; Gatchalian, 1997). To ensure a successful TQM implementation, comprehensive continuous improvement programs should be planned and implemented with the commitment and invovement of all the members of the firm.

LIMITATIONS AND FUTURE RESEARCH

The study was conducted in one province of Pakistan; therefore the finding may not generalize the views and practices of SMEs in other regions of Pakistan. Future study can be conducted in other parts of Pakistan to further validate the results. This study used a survey questionnaire approach and cross sectional data was collected. Future research can be extended by longitudinal data to get a comprehensive view, because TQM is a long term strategy in nature.

REFERENCES

Joiner, T. a. (2007). Total quality management and performance: The role of organization support and co-worker support. *International Journal of Quality & Reliability Management*, *24*(6), 617–627. doi:10.1108/02656710710757808

Arawati, A. (2005). The structural linkages between TQM, product quality performance, and business performance: Preliminary empirical study in electronics companies. *Singapore Management Review, 27*(1), 87-105.

Arawati, Ridzuan & Joiner, T. a. (2007). Total quality management and performance: The role of organization support and co-worker support. *International Journal of Quality & Reliability Management*, *24*(6), 617–627.

Bagozzi, R. P. & Lynn, P. W. (1982). Representing and Testing Organizational Theories: A Holistic Construal. *Administrative Science Quarterly 27,* 459–489.

Benavent, F. B., Ros, S. C., & Moreno-Luzon, M. (2005). A model of quality management self-assessment: An exploratory research. *International Journal of Quality & Reliability Management, 22*(5), 432-451.

Brah, S. A., Tee, S. S. L., & Rao, B. M.(2002). Relationship between TQM and performance of Singaporean companies. *International Journal of Quality & Reliability, 19(*4), 356- 379.

Choi, T. Y., & Eboch, K. (1998). The TQM paradox: relation among TQM practices, plant performance, and customer satisfaction. *Journal of Operations Management, 17*, 59-75.

Chuan, T. K., & Soon, L. C. (2000). A detailed trend analysis of national quality awards worldwide. *Total Quality Management, 11*(8), 1065-1080.

Das, A., Handfield, R. B., Calantone, R. J., & Ghosh, S. (2000). A contingent view of quality management- the impact of international competition on quality. *Decision Sciences, 31*, 649-690.

Demirbag M. T., Tatoglu, E., Tekinus, M., & Zaim, S. (2006). An analysis of the relationship between TQM implementation and organizational performance: evidence from Turkish SMEs. *Journal of Manufacturing Technology Management,17*(6), 829-847.

Douglas, T. J., & Judge Jr, Q. W. (2001). Total Quality Management and competitive advantage; the role of structural control and exploration. *Academy of Management Journal, 44*, 158-169.

Escrig-Tena, A. B.(2004). TQM as a competitive factor: A theoretical and Empirical Analysis. *International Journal of Quality & Reliability Management, 21*(6), 612-637.

Feng, J., Prajogo, D. I., Tan, K. C., & Sohal, A. S. (2006). The impact of TQM practices on performance: A comparative study between Australian and Singaporean organizations. *European Journal of Innovation Management, 9*(3), 269-278.

Flynn, B.B., Schroeder, R.C. & Sakakibara, S. (1994). A framework for quality management research and an associated measurement instrument. *Journal of Operations Management*, *11*, 339-405.

Fornell, C., & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variable and measurement error. *Journal of Marketing Research, 18*(1), 39-50.

Gatchalian, M. M. (1997). People empowerment: The key to TQM success. *The TQM Magazine, 9*(6), 429-433.

Joiner, T. A. (2007). Total quality management and performance: The role of organization support and co-worker support. *International Journal of Quality & Reliability Management*, *24*(6), 617–627. doi:10.1108/02656710710757808

Hair, J. F., Black, Andersen, R. E., & Tatham, R. L., & Black, W.C. (1998). *Multivariate data analysis (5th ed.).* NJ: Pearson Education international, Inc.

Hair, J. F., Andersen, R. E., & Tatham, R. L.(2010). *Multivariate data analysis (7th ed.).* Upper Saddle River, NJ: Pearson Prentice Hall.

Harrington, D., & Williams, B. (2004). Moving the quality efforts foreward- the emerging role of the middle manager. *Managing Service Quality, 14*, 297-308.

Hendrick, K. B., & Singhal, V. R. (2001). Firm characterstics, total quality management, and firm performance. *Journal of Operations management, 19*, 269-285.

Hitt, M. A., & Ireland, R. D. (2002). The essence of strategic leadership: Managing human and social capital. *Journal of Leadership & Organizational Studies, 9*, 3-15.

Hooley, G., Fahy, J., Greenley, G., & Beracs, J. e. a. (2003). Market orientation in the service sector of transition economies of Central Europe. *European Journal of Marketing, 37*, 86-107.

Jabeen, R., & Mahmood, R. (2014). The Relationship between TQM, EO and Business Performance of SMEs: Mediating Role of Market Orientation. *International Postgraduate Business Journal, vol. 6* (Special Issues) (1), 77-93.

Joiner, T. A. (2007). Total quality management and performance: The role of organization support and co-worker support. *International Journal of Quality & Reliability Management*, *24*(6), 617–627.

Jutla, D., Bodorik, P. & Dhaliqal, J. (2002). Supporting the e-business readiness of small and medium-sized enterprises: approaches and metrics. *Internet Research: Electronic Networking Applications and Policy*, *12*(2),139-164.

Kaynak, H. (2003). The relationship between total quality management practices and their effects on firm performance. *Journal of Operations Management, 21*, 405-435.

Koehler, J. W. & Pankowski, J. M. (1996). *Quality government: Designing, developing and implementing TQM*. Florida: St Lucie Press.

Li, J. H., Andersen, A. R., & Harrison, R. T. (2003). Total quality management principles and practices in China. *International Journal of Quality & Reliability Management, 20*(9), 1026-1050.

Llorens Montes, F. J., & Verdu Jover, A. J. (2004). Total quality management, institutional isomorphism and performance: The case of financial services. *The Service Industries Journal, 24*(5), 103-119.

Madu, C.N., Kuei, C., & Lin, C. (1995). A comparative analysis of quality practice in manufacturing firms in the US and Taiwan. *Decision Sciences 26*, 621–635.

Matzler, K., Hinterhuber, H., Daxer, C., & Huber, M. (2005). The relationship between customer satisfaction and shareholder value. *Total Quality Management and Business Excellence, 16*, 671-680.

McCabe, D. &Wilkinson, A. (1998). The rise and fall of TQM: the vision, meaning and operation of change. *Industrial Relations Journal, 29*,18-29.

Mehra, S., Hoffman, J.M. , & Sirias, D. (2001) TQM as a management strategy for the next millennium. *International Journal of Operations & Production Management*, *21*(5/6), 855-876.

Nair, A. (2006). Meta-analysis of the relationship between quality management practices and firm performance-implications for quality management theory development. *Journal of Operations Management, 24*, 948-975.

O'Regan, N., Ghobadian, A. & Sims, M. (2006). Fast tracking innovation in manufacturing SMEs. *Technovation, 26*(2), 251-261.

Pinho, J. C. (2008). TQM and performance in small medium enterprises: The mediating effect of customer orientation and innovation. *International Journal of Quality & Reliability Management, 25*(3), 256-275.

Powell, T.C. (1995).Total quality management as competitive advantage: A review and empirical study. *Strategic Management Journal, 16*, 15-37.

Ross, J. E. (1994). *Total Quality Management: Text and Cases Readings, (*2nd Ed). Kogan Page, London.

Samson, D., & Terziovski, M. (1999). The relationship between total quality management practices and operational performance. *Journal of Operations Management, 17*(3), 393-409.

Shehu, A.M., & Mahmood, R. (2014a). Determinig the effect of organizational culture on Small and Medium Enterprises performance: A SEM Approach. *Journal of Economics and Sustainable Development, 5*(17), 1-9.

Shehu, A.M., & Mahmood, R. (2014b). Market orientation and organizational culture's impact on SME performance: A SEM Approach. *International Affairs and Global Strategy, 24, 1-10.*

Westland, A. H., Gustafsson, C., Lang, E., & Mattsoon, B. (2005). On customer satisfaction and financial results in Swedish real estate market. *Total Quality Management and Business Excellence, 16*, 1149-1159.

Yasin, M. M., Kunt, J. A. M., & Zimmerer, T. W. (2004). TQM practices in service organizations: An exploratory study into the implementation, outcomes and effectiveness. *Managing Service Quality, 14*(5), 377-389.

Yeung, C. L., & Chan, L.Y. (1998). Quality management system development: Some implications from case studies. *Computers and Industrial Engineering, 35*.