

IMPEDING FACTORS IN IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT IN SMALL AND MEDIUM ENTERPRISES

Raj Kumar

M.B.E. MPhil. Ph.D.
Independent Researcher and Academician V.P.O. Behbalpur Distt. & Teh. Hisar, Haryana India.

Abstract:

Entrepreneurship development process is necessary condition in developing country like of India to solve the different kinds of economic, social, and unemployment related problems. Total quality management (TQM) is widely recognized philosophy of management strategy. Its focus is to improve quality and productivity in significant way to enhance the competitiveness of an organization. Organizational leadership plays a vital role to effect the efficiency and productivity of particular organization and concerned labour and employee management. But the quality of entrepreneurial leadership is another problem to implement total quality management in these enterprises. An attempt has been made in this paper to know which are impeding factors in implementation of total quality management small and medium enterprises for continuous process of entrepreneurship development. Data has been collected from 100 units of small and medium enterprises situated in rural or urban areas. For data reduction the factor analysis technique has been used.

KEYWORDS:

Global competition, Entrepreneurship process, holistic approach, Total Quality Management, liberalization, impeding,

INTRODUCTION

Global competition and economic liberalization of world economy is opening new doors for developing economies of export and import for quality of products in overseas markets. Small and medium enterprises can export their quality of products in these markets having with best knowledge of benchmarking and capture the market with quality of products. Keeping in mind this concept concerned with small and medium enterprises, entrepreneur is an individual who combines the factor of production and produce goods and services for society and economy. The production opportunities also can be identified by the entrepreneurs in any country in innovative way. Entrepreneurship process is necessity condition in like developing country of India to solve the different kinds of economic, social, and unemployment related problems. A famous economist Schumpeter imagined an economy which in balanced in development. In his views only entrepreneur is an individual who can do innovation in the economy like new method of production, to find the new resources of raw materials, finding of new markets. But in India after a long duration after independence the entrepreneurs in small and medium enterprises are hailing the lot of kind impediments. The implementation of total quality management is one of the challenges among them impeding factors. TQM is a holistic approach that integrates technical system with the socio-cultural system within an organization by emphasizing the importance of people in the TQM process. (Mohan and Elangovan 2006). Total quality management (TQM) is widely recognized philosophy of management strategy. Its focus is to improve quality and productivity in significant way to enhance the competitiveness of an organization (Mithani, D.M. 2010). TQM provides the overall concept that foster

Please cite this Article as : Raj Kumar, " IMPEDING FACTORS IN IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT IN SMALL AND MEDIUM ENTERPRISES" : Tactful Management Research Journal (May ; 2014)

IMPEDING FACTORS IN IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT.....

continuous improvement in an organization. The TQM philosophy stresses a systematic, integrated, consistent, organization-wide perspective involving everyone and everything. (Poornima 2000). TQM provides the overall concept that foster continuous improvement. TQM is a necessity, a never ending journey. It is a way to survive and succeed. Indian organizations, large or small, have to implement if they want to survive. (Arora and Sood 2003). TQM is a mutual co-operation of everyone in an organization and associated business process to produce value for money products and services which meet and helpfully exceed the needs and expectations of customers. (Dale 2004).

LITERATURE REVIEW

Hamed, R. and Behrooz, G. (2013) concluded in survey about the implementation of total quality management in SMEs in metal industry in Iran. They found that competitive market in Iran, pressure of competitors in industries, increase in quality of products and services, and achieving customer satisfaction were the implementation problems of total quality management. Literature also revealed that many factors affect the implementation of total quality management, these factors were management commitment, role of quality department, training and education, employee involvement, quality policy, adequate relationship with suppliers and quality culture.

Talib (2013) have examined an overview of total quality management: understanding the fundamentals in service organization. The study found that inadequate attention to different critical success factors during total quality management implementation, lack of top and middle management commitment, lack of employee empowerment, poor planning, lack of communication, management causing confusion, and lack of direction were the obstacles of total quality management. It was concluded that organizations those want to implement total quality management effectively must have patience because total quality management takes a long time for getting fruitful results. There should be major changes in culture of that particular organization.

Teixeira et al. (2012) concluded in their study a methodology for quality problems diagnosis in SMEs that process and sub-process, FEMA, cause and effect methods, problems of benchmarking and information for improvement were the obstacles in implementation of quality management in small and medium enterprises.

Rashmi and Swami (2012) examined that there were several barriers to effective implementation of total quality management in small and medium enterprises namely lack of business experience and knowledge, limitation of finance as well as human resource management.

Sahran et al. (2010) concluded in their research study quality management in small and medium enterprises: experiences from a developing country that there is a low level of application and effectiveness of advanced quality management tools in Malaysian organizations. The results of the study indicate that most of the quality managers have low level of experience of quality management implementation and they were no capable to recognize the need to compete of modern technologies. These were the major problems to small and medium enterprises such as adequate knowledge, human and financial resource limitation, new product development capability, training facilities, infrastructure and networking system in the organization related to quality management implementation.

Bhatt, K.S. and Rajshekhar, J. (2009) found the impeding factors of total quality management in Indian industries i.e. lack of customer orientation, lack of planning for quality, lack of total involvement, lack of management commitment and lack of resources. The study concluded that benchmarking, resistance to change and inadequate resources are obstacles of total quality management.

Brucher et al. (2008) found in their study challenges for quality managers, 50 per cent quality manager have not sufficient knowledge of quality issues in their enterprises, 10 per cent quality manager in Britain and 67 per cent in Australia accepted that changing environment is another problem for managing quality.

Zadry and Yosof (2006) have concluded that these were the problems of total quality management such as improvement in customer satisfaction, reduction in number of customer complaints, education and training, resource management, lack of resources, resistance to change, company quality culture etc.

Cheng, L.S. (2007) conducted an empirical research related to implementation problems of six sigma in Taiwan. Interdepartmental communication, lack of training and education were the greatest problems of total quality management.

Ebrahim et al. (2005) in their article breaking through barriers to TQM effectiveness found that lack of enough knowledge of TQM, lack of commitment of top executive, and association between mobility of senior management were the significant impeding factor of total quality management.

Shamsuddin and Masjuki (2003) have examined in their study named survey and investigations on application of quality management tools and techniques in SMIs that lack of resources, support of upper

IMPEDING FACTORS IN IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT.....

management, and lack of statistical knowledge were the main implementation problems of quality management in small and medium enterprises.

OBJECTIVE AND METHODOLOGY

The objective of present study to identify the impeding factors in implementation of total quality management in small and medium enterprises in Haryana state. To achieve this objective a well structured five degree likert scale questionnaire has been used for data collection i.e. from to a large extent to not at all. These barriers have been measured on five point likert scale i.e. to a great extent =1, to a large extent=2, to some extent = 3, to a little extent = 4 and not at all=5. The study has been conducted in Haryana including rural or urban area's small and medium enterprises units. 100 units of small and medium enterprises have been selected to achieve the aforesaid objective decided in the proposed study. Implementation barriers of total quality management have been identified from literature and research work done by the expert researcher and pioneers of quality management. KMO (.701) test was used which measure the sampling adequacy and distribution of items under study for factor analysis, and Bartlett Sphericity test suggest the adequacy of the variables for analysis. Eigen values and percentages of variance approaches were used to reveal the number of factors necessary to represent data. Factor with large eigenvalues (>1) are retained. Cronbach alfa test was used to know the reliability of the questionnaire which (.941) shows the consistency in the data.

TABLE: 1 PROFILE OF ENTREPRENEURS AND ENTERPRISES

Type of Industries	Frequency	Per cent
Plastic process industries	20	20
Iron product	15	15
Electronics	18	18
Pharmaceutical	14	14
Electronics	18	18
Others	15	15
Age group of the entrepreneurs		
Up to 40	40	40
41-45	32	32
46-50	15	15
More than 50	13	13
Total	100	100
Level of Education of the entrepreneurs		
Up to +12	28	28
Graduate	42	42
Post-Graduate	9	9
Professional Education	21	21
Total	100	100
Experience of the entrepreneurs in Business		
Less than 6 years	8	8
6-11	62	62
11-15	18	18
More than 15	12	12
Total	100	100

Source: Primary Data

Table 1 indicates that 20 per cent small and medium enterprises engaged in plastic processing products, 15 per cent were related with iron products, 18 per cent units are producing electronics items, and

IMPEDING FACTORS IN IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT.....

14 per cent small and medium enterprises are producing medicine related products and another 18 per cent electronics items and 15 per cent respectively. 40 per cent entrepreneurs were in the age group of up to 40 years and 32 per cent in 41-45 or 15 per cent and 13 per cent respectively. 28 per cent entrepreneurs in small and medium enterprises having low level of education i.e. up to +12, on the other hand, 42 per cent entrepreneurs having graduate level of education, 9 per cent post-graduate and 21 per cent entrepreneurs possessing technical level of education in small and medium enterprises. Experience-wise analysis reveals that 8 per cent having experience in the range of less than 8 years, 62 per cent in 7-10, 18 per cent in 10-15 years and 12 per cent more than 15 years respectively.

Table: 2 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.701
Bartlett's Test of Sphericity	Approx. Chi-Square	3057.792
	df	435
	Sig	.000
Cronbach Alfa = .941		

Source: Primary data

Table 2 exhibits that measures of sampling adequacy such as Bartlett's test of sphericity (approx chi-square is 3057.792, df is 435, level of significance is (0.000) and KMO test value is (0.701) reveals that data is fit for factor analysis because the KMO value greater than (.5) is very suitable for factor analysis.

RESULT AND DISCUSSION

Table: 3 Descriptive Statistics

Name of the problems	Mean	S.D.
Lack of team work	2.41	.739
Lack of employee involvement	2.50	1.35
Employee's turnover	2.31	1.38
Inappropriate reward for employee	3.04	1.15
Lack of customer focus	2.62	1.05
Lack of customer's need awareness	3.05	1.37
lack of defined quality by customers	2.53	1.32
Lack of employee empowerment	2.74	.504
lack of employee motivation	3.40	1.23
Lack of experienced workers	3.54	.857
Lack of knowledge about benchmarking	3.12	1.31
Lack of continuous improvement culture	3.32	.930
Lack of quality initiative	2.39	.709
Lack of statistical process awareness	2.60	.724
Lack of knowledge about electronics trading	3.07	.455
Lack of knowledge of quality control method	2.36	1.26
Lack of effective measurement techniques of improvement	2.45	1.48
Lack of knowledge about quality improvement areas	2.81	1.16
Lack of financial resources	2.94	.826
Lack of adequate compensation policy	2.98	1.02
Employees have poor knowledge of TQM	3.20	1.02
Lack of customer oriented strategic planning	3.27	1.22
Lack of skill and experienced employee	3.34	.831
Lack quality leadership	3.11	.952
Lack of competency	3.28	1.20
Lack of planning with suppliers	3.60	1.15
Lack of supplier management	3.16	1.12
Lack of capability in changing organizational culture	2.91	1.10
Problem of distances from suppliers	3.91	.954
Lack of adequate knowledge of TQM	2.91	1.05

IMPEDING FACTORS IN IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT.....

Table: 4 ROTATED COMPONENT MATRIXES

Name of the Statement	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7
Lack of team work	.311	.444	-.006	.225	.253	.120	.142
Lack of employee involvement	.081	.639	.249	.064	.245	.172	.086
Employee's turnover	.097	.743	.146	.234	.326	.151	.087
Inappropriate reward for employee	.274	.630	.384	-.067	.035	.244	-.078
Lack of customer focus	-.171	.093	.144	.886	.076	.123	.142
Lack of customer's need awareness	.098	.286	-.089	.808	.199	.233	.060
Lack of defined quality by customers	.254	.165	.165	.873	-.135	.116	.166
Lack of employee empowerment	.085	.826	-.109	.217	.038	.159	.265
Lack of employee motivation	-.238	.275	.370	.308	.250	.275	.469
Lack of experienced workers	-.037	.316	.072	.094	-.057	.800	.147
Lack of knowledge about benchmarking	.309	.414	.168	.058	-.233	.095	.696
Lack of continuous improvement culture	.220	.123	.309	.181	.277	.081	.790
Lack of quality initiative	.348	.100	.166	.272	.295	.189	.742
Lack of statistical process awareness	.812	.138	.043	-.088	-.116	.005	.195
Lack of knowledge about electronics trading	.803	.308	.233	.067	.068	.065	.030
Lack of knowledge of quality control method	.513	.365	.477	-.022	.384	.043	.149
Lack of effective measurement techniques of improvement	.804	.265	.389	.027	.124	.071	.144
Lack of knowledge about quality improvement areas	.660	-.154	-.042	.257	.089	.378	.258
Lack of financial resources	.113	.635	.147	.177	.348	.021	.116
Lack of adequate compensation policy	.251	.136	.127	.210	.173	.599	.000
Employees have poor knowledge of TQM	.448	-.347	.384	.352	.016	.317	.096
Lack of customer oriented strategic planning	.169	.163	.128	-.126	.157	.782	.128
Lack of skill and experienced employee	-.133	.476	.236	.068	.442	.318	.345
Lack of quality leadership	-.110	.413	.116	-.048	.777	.018	.119
Lack of competency	.491	-.021	.310	.121	.527	.371	.058
Lack of planning with suppliers	.182	.207	.785	.174	.023	.008	.296
Lack of supplier management	.594	-.033	.664	-.034	-.084	.202	-.011
Lack of capability in changing organizational culture	.166	.362	.762	.296	.176	.145	.211
Problem of distances from suppliers	.305	-.024	.580	.081	.298	.349	.263
Lack of adequate knowledge of TQM	.096	.229	-.001		.890	.114	.090

Extraction Method: Principal Component Analysis

Rotation method: Varimax with Kaiser Normalization

Source: Primary data

TABLE: 5 FACTOR MATRIX

Name of factor and statement	Loading	Reliability Analysis	Eigen value	Variance Explained	Cumulative Percentage
Lack of Statistical Process Awareness					
Lack of statistical process awareness	.812				
Lack of knowledge about electronics trading	.803				
Lack of knowledge of quality control method	.513				
Lack of effective measurement techniques of improvement	.804				
Lack of knowledge about quality improvement areas	.660				
Employees have poor knowledge of TQM	.448				
Lack of Employee Management					
		.868	4.367	14.558	14.558

IMPEDING FACTORS IN IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT.....

Lack of team work	.444	.871	4.256	14.188	28.746
Lack of employee involvement	.639				
Employee's turnover	.743				
Inappropriate reward for employee	.630				
Lack of employee empowerment	.826				
Lack of financial resources	.635				
Lack of skill and experienced employee	.476				
Lack of Supplier Management		.875	3.340	11.133	39.879
Lack of planning with suppliers	.784				
Lack of supplier management	.664				
Lack of capability in changing organizational culture	.762				
Problem of distances from suppliers	.580				
Lack of Customer Relationship Management		.892	3.023	10.075	49.955
Lack of customer focus	.868				
Lack of customer's need awareness	.808				
Lack of defined quality by customers	.873				
Lack of Organizational Leadership		.799	2.941	9.805	59.760
Lack of quality leadership	.777				
Lack of competency	.527				
Lack of Financial Resources		.756	2.661	8.869	68.628
Lack of experienced workers	.800				
Lack of financial resources	.599				
Lack of Understanding of benchmarking		.857	2.597	8.658	77.286
Lack of employee motivation	.469				
Lack of knowledge about benchmarking	.696				
Lack of continuous improvement culture	.790				
Lack of quality initiative	.742				

Source: Primary Data

LACK OF STATISTICAL PROCESS AWARENESS

It is an important factor which accounts for maximum percentage of variance equal to 14.558. Six variables have been loaded on this factor. The loading of six variables indicate that statistical process awareness is one of the important obstacles of entrepreneurs to implement total quality management in their organizations. These six variables have eigen value 4.367. The eigen value more than four further shows that statistical tools till now not implemented by the entrepreneurs of small and medium enterprises properly. Under this heading the statements included are lack of statistical process awareness, lack of knowledge about electronics trading, lack of knowledge of quality control method, lack of effective measurement techniques of improvement, lack of knowledge about quality improvement areas, employees have poor knowledge of TQM,

LACK OF EMPLOYEE MANAGEMENT

It is an important factor which accounts for maximum percentage of variance equal to 14.188. Seven variables have been loaded on this factor. The loading of seven variables indicate that employee management is also obstacle for entrepreneurs to implement total quality management in small and medium enterprises. These Seven variables have eigen value 4.256. The eigen value more than three further shows that employee involvement is not properly maintained by the entrepreneurs of small and medium enterprises to implement total quality management in their business organization.

LACK OF SUPPLIER MANAGEMENT

It is an important factor which accounts for maximum percentage of variance equal to 11.133. Four variables have been loaded on this factor. The loading of four variables indicate that supplier management is one of the important impeding factors of entrepreneurs to implement total quality

IMPEDING FACTORS IN IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT.....

management in small and medium enterprises. These four variables have eigen value 3.340. The eigen value more than three further shows that supplier management is not properly maintained by the entrepreneurs of small and medium enterprises to implement total quality management in their business organization.

LACK OF CUSTOMER RELATIONSHIP MANAGEMENT

It is an important factor which accounts for maximum percentage of variance equal to 10.075. Three variables have been loaded on this factor. The loading of three variables indicate that customer relationship management is one of the important impeding factors of entrepreneurs to implement total quality management in small and medium enterprises. These three variables have eigen value 3.023. The eigen value more than two further shows that customer relationship management is not properly maintained by the entrepreneurs of small and medium enterprises to implement total quality management in their business organization.

LACK OF ORGANIZATIONAL LEADERSHIP

It is an important factor which accounts for maximum percentage of variance equal to 9.805. Four variables have been loaded on this factor. The loading of three variables indicate that organizational leadership is one of the important impeding factor of entrepreneurs to implement total quality management in small and medium enterprises. These four variables have eigen value 2.941. The eigen value more than three further shows that organizational leadership is not properly maintained by the entrepreneurs of small and medium enterprises to implement total quality management in their business organization

LACK OF FINANCIAL RESOURCES

It is an important factor which accounts for maximum percentage of variance equal to 8.869. Four variables have been loaded on this factor. The loading of three variables indicate that supplier management is one of the important impeding factors of entrepreneurs to implement total quality management in small and medium enterprises. These three variables have eigen value 2.661. The eigen value more than two further shows that problem of financial resource is being by the entrepreneurs of small and medium enterprises to implement total quality management in their business organization

LACK OF UNDERSTANDING OF BENCHMARKING

It is an important factor which accounts for maximum percentage of variance equal to 8.658. Four variables have been loaded on this factor. The loading of four variables indicate that supplier management is one of the important impeding factors of entrepreneurs to implement total quality management in small and medium enterprises. These four variables have eigen value 2.597. The eigen value more than three further shows that supplier management is not properly maintained by the entrepreneurs of small and medium enterprises to implement total quality management in their business organization

CONCLUSION AND RECOMMENDATION

The study comprehend that supplier management in small and medium enterprises is not in sufficient manner. Organizational leadership plays a vital role to effect the efficiency and productivity of particular organization and concerned labour and employee management. But the quality of entrepreneurial leadership is another problem to implement total quality management in these enterprises. Other impeding factors to implement quality management practices are, such as lack of financial resources, organizational planning and statistical process awareness etc. These factors should be identified by the entrepreneurs of small and medium enterprises and government which are providing assistance and training program to these enterprises in implementation of total quality management. The study also observed that benchmarking is significant impeding factor in implementation of total quality management most of the entrepreneurs of small enterprises have not sources to getting information about benchmarking technique. Then government of any country while providing training program then knowledge should be imparted to entrepreneurs of these enterprises about benchmarking technique in the era of technology.

IMPEDING FACTORS IN IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT.....

REFERENCES

- 1.Arora, A. and Sood, S.K. (2003), "Fundamental of Entrepreneurship and Small Business", Kalyani Publishers, pp. 251-257.
- 2.Arora, R. and Sood, S.K. 92003), "Fundamental of Entrepreneurship and Small Business," Kalyani Publisher New Delhi, p. 255.
- 3.Bhatt, K.S. and Rajashekhar, J. (2009), "An Empirical Study of Barriers to TQM Implementation in Indian Industries", The TQM Magazine, Vol.21 No.3, pp.261-272.
- 4.Brucher, G.P., Lee, G.L. and Waddell, D. (2008), "The Challenges for Quality Managers in Britain and Australia", The TQM Journal, Vol. 200No.1, pp. 45-58.
- 5.Cheng, L.S. (2007), "Comparative Study of Local and Transnational Enterprises in Taiwan and Their Implementation of Six sigma", Total Quality Management, Vol.18 No. 7, pp. 793-806.
- 6.Dale G.B. (2004), "Managing Quality", Black well Publishing Ltd. Australia, pp. 26.
- 7.Gupta, N.K., "Small Industry, Challenges & Perspectives", Anmol Publications, New Delhi, pp.41-107.
- 8.Hamed, R. and Behrooz, G. (2013), "Determinants of the Total Quality Management Implementation in SMEs in Iran", Case of Metal Industry, International Journal of Business and Social Science, Vol. 4 No. 16; December 201, pp. 240-245.
- 9.Jonas, H. and Bengt,K. (2003), "A Core Value Model for Implementing Total Quality Management in Small Organizations", The TQM Magazine, Vol. 15 No. 2, pp. 71-81.
- 10.Kalpande, S.D., Gupta, R.C. and Dandekar, M.D. (2010), "A SWOT Analysis of Small and Medium Scale Enterprises Implementing Total Quality Management", International Journal of Business Management and Social Sciences, Vol.1 No. 1, p. 59-64.
- 11.Mithani, D.M. (2010), 'Managerial economics, Theory and Applications", Himalaya Publishing House, pp. 29
- 12.Mittal, K.C. (2003), "Industrial Entrepreneurship", Deep and Deep Publications, Pvt. Ltd., pp. 91-135.
- 13.Mohan,S. and Elangovan, R. (2006), "Current Trend in Entrepreneurship", Deep & Deep Publications, Pvt. Ltd Delhi, pp. 209.
- 14.Poornima, M.c. (2010), "Entrepreneurship Development and Small Business Enterprises", Pearson Education, pp.477.
- 15.Rashmi, S. and Swami, D.R. (2012), "Quality Management in Rural and Urban SMEs in Bangalore City", International journal of Engineering and Management Research, Vol.2 Issue 3, pp. 13-15.
- 16.Saharn, S., Masoomeh, Z. and Muriath, M. (2010), "Quality Management in Small and Medium Enterprises: Experience from Developing Country", International Review of Business Research Paper, Vol. 6 No.6, pp. 164-173.
- 17.Shamsuddin, A. and Masjuki, H. (2003), "Survey and Case Investigations on Application of Quality Management Tools and Techniques in SMEs", International Journal of Quality and Reliability management, Vol. 20 No. 7, pp. 795-826.
- 18.Singh, R.K., Garg, S.K., and Deshmukh, S.G. (2010), "The Competitiveness of SMEs in a Globalized Economy, Observations from China and India", Management Research Review, Vol. 33, No. 1, pp. 54-65.
- 19.Solotani, E.Lai, P.C. and Gharneh, N.S. (2005), "Breaking through Barriers to TQM Effectiveness: Lack of Commitment of Upper-level Management", Total Quality Management, Vol. 16 No. 8-9, pp. 1009-1021.
- 20.Talib, F. (2031), "An Overview of Total Quality Management: Understanding the Fundamentals in Service Organization", International Journal of Advanced Quality Management, Volume 1, Issue 1, pp. 1-20.
- 21.Talib, F., Rahman, Z. and Qureshi M.N. (2011), "Analysis of Interaction Among the barriers to Total Quality Management Implementation Using Interpretive Structural Modeling Approach", benchmarking: An International Journal, Vol.18, No. 4, pp. 563-587.
- 22.Texiria, N.H., Lopes, I.S. and Sousa, D.S. (2012), "A Methodology for Quality Problems Diagnosis in SMEs", World Academy of Science Engineering and Technology, Vol.64, pp. 4-25.
- 23.Thakkar, J., Kanda, A., and Deshmukh, D. (2008), "Supply Chain Management in SMEs: Development of Constructs and Propositions", Asia Pacific Journal of Marketing and Logistic, Vol. 20 no. 1, pp. 97-131.
- 24.William, D., Steve, B., Terri,F. and Kambiz,T., (2003), "Quality Management in Small Manufacturing", Industrial Management & Data System, 103/2, pp. 68-77.
- 25.Zady, H.R. and Yusof, S.M. (2006), "Total Quality Management and Theory of Constraints Implementation in Malaysian Automotive Suppliers: A Survey Results", Total Quality Management, Vol. 17 No. 8, pp. 999-1020.