Muhammad Asif Khan[1]

AN EMPIRICAL STUDY OF BARRIERS IN IMPLEMENTING TOTAL QUALITY MANAGEMENT IN SERVICE ORGANIZATIONS IN PAKISTAN

The purpose of this study is to investigate empirically the barriers of total quality management implementation experienced by service organizations in Pakistan. Structured questionnaire was used to collect the data from a sample of 120 managers. The results identified lack of planning, lack of efficient human resources practices, inadequate infrastructure for total quality management, lack of support from leadership, and lack of customer focus as significant barriers to implementing this initiative. The results provided an opportunity to quality managers, human resources practitioners, and other professionals to pursue appropriate intervention strategies to offset the effects of these barriers.

Keywords: *total quality management; barriers; services; Pakistan.*

Мухаммад Асіф Хан

ЕМПІРИЧНЕ ДОСЛІДЖЕННЯ ПЕРЕШКОД ВПРОВАДЖЕННЮ ЗАГАЛЬНОГО УПРАВЛІННЯ ЯКІСТЮ У ПАКИСТАНСЬКИХ СЕРВІСНИХ ОРГАНІЗАЦІЯХ

У статті емпірично досліджено перешкоди впровадженню загального управління якістю, які виникають у пакистанських сервісних організаціях. Для збирання даних серед 120 менеджерів було використано структуровану анкету. Результати засвідчили такі перешкоди впровадженню цієї ініціативи: недостатність планування, ефективного використання людських ресурсів, інфраструктуру, недостатню для загального управління якістю, відсутність підтримки від керівної верхівки, зосередженості на клієнтах. Результати надають можливість менеджерам з якості, HR менеджерам та іншим професіоналам розробити відповідні стратегії подолання наслідків таких перешкод.

Ключові слова: *загальне управління якістю; перешкоди; послуги; Пакистан.*

Табл. 2. Літ. 42.

Мухаммад Асиф Хан

ЭМПИРИЧЕСКОЕ ИССЛЕДОВАНИЕ ПРЕПЯТСТВИЙ ВНЕДРЕНИЮ ОБЩЕГО УПРАВЛЕНИЯ КАЧЕСТВОМ В ПАКИСТАНСКИХ СЕРВИСНЫХ ОРГАНИЗАЦИЯХ

В статье эмпирически исследованы препятствия для внедрения общего управления качеством, которые возникают в пакистанских сервисных организациях. Для сбора данных среди 120 менеджеров была использована структурированная анкета. Результаты засвидетельствовали такие препятствия внедрению этой инициативы: недостаточность планирования, эффективного использования человеческих ресурсов, инфраструктуру, недостаточную для общего управления качеством, отсутствие поддержки от руководящей верхушки, сосредоточенности на клиентах. Результаты предоставляют возможность менеджерам по качеству, HR менеджерам и другим профессионалам разработать соответствующие стратегии преодоления последствий таких препятствий.

Ключевые слова: *общее управление качеством; препятствия; услуги; Пакистан.*

[1] Assistant Professor, Shaheed Zulfikar Ali Bhutto Institute of Science and Technology, Islamabad Campus, Pakistan.

1. Introduction. The changing nature of business has necessitated the adoption of unique approaches for organizations to survive in a competitive environment. Total quality management (TQM) is a strategy that facilitates organizations to achieve and sustain competitive advantage. This philosophy provides holistic approach to seek continuous improvement in all dimensions. Rahman et al. (2011, p. 169) described it as a "people-focused, customer-driven, measurement-driven management philosophy using structures and well-organized operation methodology." Despite the fact that this philosophy yields positive dividends, the results of its implementation are mixed. There is a need to offer useful insight into the barriers that impede effective implementation of TQM. Such insight will offer opportunities to policy makers to understand the dynamics of its implementation, identify barriers that affect the success of these initiatives, and take appropriate intervention strategy to achieve desirable transformation to accomplish superior performance.

Globalization has offered opportunities to Pakistani organizations to move into emerging markets and enhance market share in existing markets. The use of total quality management (TQM) as an organizational strategy facilitates firms in achieving these goals. The implementation of TQM significantly improves the quality of products, services, and processes, increases satisfaction of employees and external customers, and leads to organizational performance in financial and nonfinancial dimensions. In Pakistan, visionary organizations have pursued quality initiative in different forms. However, the published literature on implementation of TQM is limited. Khan (2010), and Hummayoun et al. (2008) empirically examined the implementation of TQM in services in Pakistan; whereas Awan et al. (2008) studied implementation of TQM in manufacturing industries.

The purpose of this study is to empirically investigate the barriers experienced in implementation of TQM initiatives in service organizations in Pakistan. This study provides insight to the difficulties experienced in implementing TQM. Such knowledge offers opportunities to organizational decision-makers, and human resources practitioners to plan appropriate intervention strategy to achieve high success in TQM implementation. The results of such insights and compatible response strategy are likely to enhance the success rates of TQM initiatives in Pakistan. The study also provides opportunities to academicians to explore the dynamics of these barriers to further extend the knowledge in the area of TQM implementation in services in developing economies.

2. Literature Review. Despite concerted efforts by organizations to use TQM as a strategy and achieve the desired results, a large number of such initiatives have not met the desired success. Researchers agree that TQM philosophy and fundamentals are sound; however, the rate of failure of TQM initiatives has offered new insight to researchers to identify possible barriers related to this phenomenon. Quality experts and researchers identified the specific barriers that impede implementation of TQM (Ngai and Cheng, 1997; Salenga and Fazel, 2000). Kuei at al. (1997) found firm's culture; Mann and Kehoe, (1995) established management style; Fok et al. (2000) stated employees' related factors as significant barriers (Mann and Kehoe, 1995; Kuei et al., 1997; Fok et al., 2000).

Glover (1993, p.50) attributed TQM failure to "conceptual weakness (failure occurring because organizations make only "superficial" attempts at change); design

flaws (occur when total quality management system is not designed to fit the cultural circumstances of an organization) and ineffective implementation results when TQM initiatives becomes extra work instead of a new way of doing things".

Kanji (1996) argued that "management failure to lead is the primary obstacle to successful TQM implementation. Based on several case studies he compiled a list of 12 poor management practices that contributed to failed TQM initiatives. The results of these studies found that management style which inhibits learning culture, and creates barriers between departments was the most significant barrier" (as cited in Sebastinelli and Tamimi, 2003, p. 48).

Matta et al. (1996) found that lack of cultural change, failure to involve employees and absence of partnership with customers and suppliers are the major obstacles to TQM implementation. Kotter (1995) stated that lack of vision, inadequate coalition with partners, poor communication, lack of institutionalizing quality, and short-term approach hinder successful implementation of TQM. Ngai and Cheng (1997) attributed barriers related to employees, culture, infrastructure, managerial orientation and focus, and internal harmony, communication in organizations. Newall and Dale (1990) identified inadequate strategic planning and obsolete culture as major obstacles. Inadequate training and education affects successful TQM implementation. Studies found that lack of visible participation and commitment of management, fear of changes, inadequate customer focus, absence of employees' involvement and empowerment, education of people, and failure to institutionalize quality within organizations negatively affects TQM initiatives (Kanji, 1996; Liu, 1998; Soltani et al., 2005).

In the United States, Sebastianelli and Tamimi (2003) carried out a survey among quality managers and established that the obstacles related to TQM transformation are attributed to weak leadership, poor planning, inadequate human resources management, lack of customer focus, and insufficient infrastructure. In a study of 364 organizations in Indonesia, Zain and Amar (2002) established that issues associated with organizational culture, management attitude toward quality, human resources management, interfunctional relationship, information, processes, and equipment result in ineffective implementation of TQM. Rad (2006) studied the implementation of TQM in Iran. He established that poor management control, lack of will to change culture, poor organizational response to environmental changes, lack of teamwork, and inadequate response to internal and external customers' needs are the major barriers to TQM successful implementation. In Mexico, Jun et al. (2004, p. 59) examined potential barriers in 43 organizations in Maquiladora industry. The study noted a high employees' turnover as a major barrier. The study also found that compatibility of management compensation and quality goals, lack of training for enhancement of employees' competencies, and resistance to change by employees were the main barriers in the United States firms and Maquiladora industry. Bhatt and Rajshekhar (2009), in a study in India, found resistance to change and absence of benchmarking of best practices as the most important barriers. In a study of 1000 quality managers in 175 British and 127 Australian firms, Burcher et al. (2010) found that inadequate communication, commitment, organizational inertia, and insufficient resources were the major barriers to implementation of TQM. Al-Zamny et al. (2002), in a study in Yemen, found culture, inadequate support for quality initiatives, and lack of manage-

rial competency as the major barriers. The study in Qatar by Khalifa and Aspinwall (2000) identified that an authoritarian and hierarchical organizational structure, lack of managerial commitment, resistance of employees and managers, inadequate managerial competencies, insufficient infrastructure, and nonsupportive human resources management practices were significant barriers. In Libyan manufacturing industries, Master (1996) identified lack of cultural change, ineffective management, inadequate involvement, and insufficient resources as important barriers. In Malaysia, Shaari (2010) found lack of managerial commitment, cost of implementation, short-term focus, and lack of understanding of the concept as the major barriers in TQM implementation.

Researchers validated that TQM implementation failure is associated with lack of consistent support by leadership, inadequate strategic planning, absence of quality-oriented culture, lack of customer focus, commitment of employees, inadequate human resources management practices, restricted communication, and provision of insufficient resources to support quality initiatives (Beer, 2003; Burcher et al., 2010; Evan and Lindsay, 2002; Master, 1996; Rad, 2006; Shaari, 2010). Comprehensive review of literature identified 5 major barriers that impede success in TQM implementation. These barriers have been used in the study. These include lack of leadership support, lack of planning for quality, lack of customer focus, inadequate HRM practices, and provision of insufficient infrastructure to support TQM initiatives.

3. Method. 10 service organizations, 5 from telecommunications and financial, that had the experience of implementing TQM (Humayun et al., 2008; Khan, 2010) were selected. Using convenience sampling technique, a sample of 150 managers and executives was selected for the study. A self-administered questionnaire was used to collect the data. The instrument of the study was adapted from Tamimi and Sebastianelli (1998). The questionnaire contained 21 items that identified barriers an organization faced in implementing TQM. These barriers included lack of customer focus, lack of strategic planning, lack of commitment and support of top management, lack of employees' involvement, and lack of adequate resources for TQM. A five-point Likert scale was used to measure the response from 5 (strongly agree) to 1 (strongly disagree).

In order to test the reliability of the instrument, the Cronbach's alpha for the instrument and for each variable was measured. The results indicated Cronbach's alpha values for lack of customer focus (0.76), lack of planning (0.81), lack of commitment and support of top management (0.79), lack of employees' involvement and empowerment (0.80), and lack of adequate resources for TQM (0.77). The face validity and content validity of the instrument was established. The construct validity was undertaken through factor analysis. The Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity for each factor was applied. Factor loading with value less than 0.50 was not taken into analysis. The factors having Eigen value greater than 1 were retained.

4. Results. 130 completed questionnaires were received. 10 questionnaires had inadequate information and were discarded. 120 questionnaires were used for data analysis indicating a response rate of 92%.

The results of descriptive analysis in Table 1 indicate the mean and standard deviation of each barrier. The higher mean represents the higher importance of the barrier. The mean value of responses ranged from 2.48 to 1.19. The results reflect that

employees' resistance to change is the most significant barrier with a mean value of 2.48. This is followed by lack of employees training in managing TQM (M = 2.38), and lack of empowerment to implement quality improvement (M = 2.20). Inadequate resources for TQM is another important barrier perceived by the respondents (M = 2.09). These results were compared with a similar study undertaken in India [21]. There are similarities and contrasts in these studies. The main similarities with regard to barriers include resistance to change, ineffective human resource management dimensions, lack of adequate infrastructure, lack of planning, inadequate support and commitment from top leadership, and lack of customer focus. The noteworthy contrast is the use of benchmarking of best practices that is the top barrier in India whereas this aspect is fairly low in ranking in case of in Pakistan.

Factor analysis was undertaken to explain the intercorrelations among items of the instrument indicating the barriers to TQM implementation. The result of factor analysis is in Table 2. The results indicated KMO value of 0.756 and Bartlett's test of sphericity as 0.000 that is within higher range (Black and Porter, 1996).

Table 1. **Descriptive Analysis**

Item	Questionnaire Items	Pakistani Firms		Indian Firms		Number
		Rank	Mean	SD	Mean	Rank
1	Employees are resistant to change.	1	2.48	0.83	2.92	2
5	Employees are not trained in quality improvement skills.	2	2.38	0.85	2.68	6
3	Employees are not empowered to implement quality improvement.	3	2.20	0.92	2.30	19
4	Time constraints prohibit effective TQM implementation.	4	2.09	0.78	2.58	9
2	There are inadequate resources to employ TQM	5	2.05	0.83	2.82	3
6	Employees are not trained in problem identification and problem solving skills	6	2.01	0.76	2.31	5
9	There is no joint planning with suppliers.	7	1.98	0.79	2.48	13
19	Quality is not effectively measured.	8	1.89	0.83	2.80	4
20	Quality is not defined by customer.	9	1.82	1.02	2.42	11
13	Quality is treated as a separate initiative.	10	1.78	1.05	2.67	7
8	There are excess layers of management.	11	1.69	.95	2.65	8
14	Top management is not committed to quality.	12	1.62	1.23	2.34	16
16	Strategic plans do not include quality goals.	13	1.58	0.87	2.55	10
11	The strategic plan is not customer driven.	14	1.50	0.79	2.51	14
21	High costs of implementing TQM outweigh the benefits.	15	1.46	1.12	2.37	15
17	The best practices and/or products of other companies are not benchmarked.	16	1.42	1.04	3.00	1

The End of *Table 1*

Item	Questionnaire Items	Pakistani Firms		Indian Firms		Number
		Rank	Mean	SD	Mean	Rank
18	Quality is not everyone's responsibility.	17	1.39	0.81	2.73	18
7	Crossfunctional teams are not employed.	18	1.31	0.65	2.25	20
10	Quality action plans are often vague.	19	1.29	0.72	2.12	21
15	There is a frequent turnover of employees.	20	1.23	0.63	2.51	12
12	Management's compensation is not linked to achieving quality goals.	21	1.19	0.54	2.34	17

M =Mean. A five point Likert scale with 1 = not true; 5 = completely true. SD = Standard Deviation, N = 120

The factor analysis extracted 5 factors and accounted for 67.7% of the variance. Reliability and validity of the instrument was measured. The reliability was measured through Cronbach's alpha. The Cronbach's alpha for all the factors were within acceptable range as recommended by Nunnally (1978) [31]. The construct validity was measured through factor analysis. The results of factor analysis confirmed the construct validity.

Table 2. **Factor Analysis**

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
4	.732				
9	.673				
10	.783				
12	.636				
17	.555				
5		.751			
6		.747			
7		.695			
13		.698			
15		.770			
4			.964		
8			.762		
14			.788		
18			.722		
2				.727	
19				.695	
20				.827	
21				.782	
1					.723
2					.725
Eigen value % variance	2.881	2.684	2.653	2.308	1.048
Extracted	17.1	16.5	15.4	14.8	13.9
Cumulative % of variance	17.1	33.6	49.0	53.8	67.7
KMO	.785	.741	.809	.782	.801
Bartlett Test of Sprericity	0.000	0.000	0.000	0.000	0.000

Notes: Extraction Method: Principal Component Analysis; Rotation Method, Varimax with Kaiser normalization; Factor loading > 0.50 – Eigen value > 1.

5. Conclusions, Recommendations and Future Implications. The purpose of the study was to investigate the barriers that service organizations experience during implementation of TQM in Pakistan. The results indicated 5 important barriers: inadequate human resources management, lack of adequate resources for TQM, lack of planning, inadequate support from leadership, and lack of customer focus. The results of the study concur with the discoveries of the earlier studes (Bhat and Rajashekhar, 2009; Salenga and Fazel, 2000; Sebastianelli and Tamimi, 2003; Tamimi and Sebastianelli, 1998; Zain and Amer, 2002).

The most significant barrier identified by the respondents is employees' resistance to change. Cultural change is essential for successful implementation of TQM. TQM initiates a complete change in employees' feelings, thinking, behaviour, and job-related practices. TQM culture manifests a holistic approach with continuous improvement integrated in work activities. It emphasizes doing things right the first time. Management and workers acts as a team and provide synergy for achievement of organizational goals. The processes are redesigned to align with employees' benefits. This cultural transformation necessitates change in every facet of organizational work life (Ngai and Cheng, 1997). The employees are afraid of this transformation, and experience multidimensional pressure in physical and psychological dimensions. They view this transformation as setback to their attitude and practices, and tend to resist it. To make this transformation successful, it is imperative to build people's skills to support the transformation, aligning organizational structure and system, and interpersonal style of management (Tamimi and Sebastianelli, 1998). Participation in decision-making and problem solving is essential to sustain integrated move to change. An organization gives purpose and pride of work to achieve the shared goals of excellence. The entire culture is cooperative and integrated. Cultural transformation is based on translucent thinking, discipline, trust, openness, respect, home like work environment, a high sense of purpose and commitment, and pride in work. Emotional support is provided to ward off fear of change, and necessary resources are provided to enhance competencies to perform under the new paradigm.

The study also highlighted inadequate training, involvement, and lack of empowerment of employees as the second and the third most significant barriers. Dale et al. (1997) emphasized that effective employees' management is the most significant means in achieving success in TQM initiatives. Effective training and employees empowerment provides multiplier effects in improving the processes and service quality. Boselie et al. (2005) stressed that people-focused practices foster creativity, experimentation, improved competencies, synergy, and build commitment to contribute effectively to achieve TQM objectives (Boselie et al., 2005). Employees' involvement in quality-related issues augments their understanding of quality problems and resolving these issues at their level (Powell, 1995). It has been established that investment in development of employees' competencies and empowerment yields strategic gains.

Expenditures on TQM implementation is considered as a strategic investment because its success offers cost competitiveness, satisfaction of internal and external customers, improved productivity, service excellence, high market share, and improved profitability. The outcome of TQM takes time to materialize. (Hendricks and Singhal, 2000). Maintaining and sustaining TQM efforts need resources. The lack of adequate resources couses poor planning, inadequate management support

for TQM initiatives, and results in frustration of employees, affects internal and external customer satisfaction, increases costs, reduces productivity, and influences organizational profitability (Kwak and Anbari, 2006). Hill (2008) stressed the need for adequate support to achieve success in TQM implementation.

The above barriers of resistance to change, inadequate human resources management practices, and lack of adequate resources are attributed to two important aspects: lack of top management commitment and support to TQM initiatives, and lack of planning. Leadership plays crucial role in planning, implementing, and sustaining TQM initiatives (Kaynak, 2003). It has been emphasized that commitment of leadership to TQM implementation manifests in provisioning of adequate resources for training of employees, cultural transformation, eliminating fear, inculcating trust, communication, and participation of employees during TQM implementation (Palo and Padhi, 2003). According to Zairi (2002, p. 1168), "it is the responsibility of leaders to create and communicate a vision that moves the organization to continuous improvement". Identifying critical role of employees and making them contribute positively to TQM success is essential. The leadership needs to provide enabling environment to foster employees' participation, giving them competencies to resolve problems, and take pride in their work. The strategic approach to TQM is essential with a focus on institutionalizing quality as everybody's responsibility in the organization (Davies, 2003). Senapati (2004, p. 684) emphasized that "TQM is an approach to improving the competitiveness, effectiveness, and flexibility of a whole organization in ways that each activity is planned, organized, and understood. Therefore, lack of planning and leadership for quality can hinder this". Organizations need to realize that TQM takes time to become effective. It cannot happen overnight. Also, the implementation of a TQM culture requires a long-term approach (Claver et al., 2003). It may take 3-5 years for a company to implement an effective TQM program, and a couple of years before financial performance starts to improve (Hendricks and Singhal, 2000). Companies must be aware of this when calculating benefits and results, and plan accordingly.

The study offers opportunities to corporate decision-makers, business leaders, quality experts, academicians, and human resources practitioners to understand the impediments that affect sustainable TQM success. The study indicated important barriers in TQM implementation: employees' resistance to change, inadequate HRM practices, and lack of adequate resources. These factors are directly related to organizational planning for TQM initiative, and leadership support of TQM. It is imperative for organizations that quality improvement initiatives or TQM initiatives need to focus on these important aspects with a view to achieve sustained excellence in performance.

The study is limited to only 10 service organizations that have implemented TQM initiatives. The sampling technique and the limited number of organizations affect the generalizability of the results. It is recommended that further research is carried out with larger sample organizations both in manufacturing and service industries. In addition, public and private sector organizations may be investigated. Because realization of TQM initiative is likely to give financial results in the longterm, a longitudinal study would be a better option to identify the dynamics of this phenomenon. Future studies may also focus on relationship of TQM barriers and specific performance outcome.

The study examined empirically the impediments experienced by service organizations involved in implementing TQM in a developing economy. The study empirically validated the earlier studies in identification of barriers in implementing TQM. Implementing TQM and realizing the desired objectives is an enduring process and takes time. Managers must understand the effects of these obstacles on the desired outcomes of TQM initiatives. Managerial awareness of these barriers and proactive response to prevent these obstacles at earlier stage of planning and implementation is vital for success. An integrated approach to this essential facet augmented with contemporary benchmark practices is likely to create requisite synergy to avert the fallout of these barriers and make TQM implementation process a success.

References

Al Zamany, Y., Hoddle, S.E.J., and Savage, B.M. (2002). Understanding the difficulties of implementing quality management in Yemen. The TQM Magazine, 14(4): 240-247.

Awan, H.M., Bhatti, M.I., and Bukkhari, K.S. (2007). Globalization and firm's quality orientation: a review of total quality management practices in manufacturing sector. Globalization – today, tomorrow, 91-112.

Beer, M. (2003). Why total quality management programs do not persist: the role of management quality and implications for leading a TQM transformation. Decision Sciences, 34(4): 623-42.

Bhat, K.S., and Rajashekhar, J. (2009). An empirical study of barriers to TQM implementation in Indian industries. The TQM Magazine 21(3): 261-272.

Black, S.A., and Porter, L.J. (1996). Identification of the critical factors of TQM. Decision Sciences, 27(1):1-21.

Boselie, P., Dietz, G. and Boon, C. (2005). Commonalities and Contradictions in HRM and Performance Research. Human Resource Management Journal, 15(3):67-94.

Burcher, P.G., Lee, G.L., and Waddell, D. (2010). Quality lives on: quality initiatives and practices in Australia and Britain. The TQM Journal, 22(5): 487-498.

Claver, E., Tari, J.J. and Molina, J.F. (2003). Critical factors and results of quality management: an empirical study. Total Quality Management, 9(1): 91-118

Evans, J.R., and Lindsay, W.M. (200). The Management and Control of Quality. 5th Edition. South-Western, USA.

Davies, E.C. (2003). Quality: Its historical context. Engineering Management, 13(2):14-17.

Fok, L.,Hartman, S. Patti, A., and Razek, J. (2000). Human factors affecting the acceptance of total quality management, International Journal of Quality & Reliability Management, 17(7):714-29.

Glover, J. (1993). Achieving the organizational change necessary for successful TQM. International Journal of Quality and Reliability Management, 10: 47-64.

Hendricks, K.B., and Singhal, V.R. (2000). The impact of total quality management (TQM) on financial performance: evidence from quality award winners. Available at: comatech.be/nl/uk/artic1es.php-l0k (Accessed June 12, 2011).

Hill, D.A. (2008). What makes total quality management work: a study of obstacles and outcomes? Dissertation. Capella University.

Hummayoun, N. M., Saif, I. and Qasim, S. (2008). Total Quality Management – A Recommended Strategy for the Pakistani Banking Sector. International Business & Economics Research Journal, 7(11): 49-54.

Jun M., Cai, S. and Peterson, R.T. (2004). Obstacles to TQM Implementation in Mexico's Maquiladora Industry. Total Quality Management, 15(1): 59-72.

Khalifa, A.K.N., and Aspinwall, E.M. (2000). The development of total quality management in Qatar. The TQM Magazine, 12(3): 194-204.

Kanji, G.K. (1996). Implementation and pitfalls of total quality management. Total Quality Management, 7: 331-343.

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

Khan, M.A. (2010). An Empirical Assessment of Service Quality of Cellular Mobile Telephone Operators in Pakistan. Asian Social Science, 6 (10): 164-177.

Kotter, J. P. (1995). Leading change: Why transformation efforts fail. Harvard Business Review (March-April): 59-66.

Kuei, C.H., Madu, C. N., Lin, C., and Lu, M.H. (1997). An empirical investigation of the association between quality management practices and organizational climate. International Journal of Quality Science, 2: 121-137.

Kwak, Y.H., and Anbari, F.T. (2006). Benefits, obstacles, and future of six sigma approach. Technovation, 26: 708-715.

Liu, C.K. (1998). Pitfalls of total quality management in Hong Kong, Total Quality Management, 9 (7): 585-98.

Mann, R., and Kehoe, D. (199). Factors affecting the implementation and success of TQM. International Journal of Quality and Reliability Management. 12:11-23.

Masters, R.I. (1996). Overcoming the barriers to TQM's success. Quality Progress, 29(5): 53-5.

Matta, K., Davis, J. Mayer, R. and Conlon. E. (1996). Research questions on the implementation of total quality management. Total Quality Management, 7: 39-49.

Newall, E. and Dale, B. (1990). The introduction and development of a quality improvement process: A study. International Journal of Production Research, 29(9).

Ngai, E.W.T. and Cheng, T.C.E. (1997). Identifying potential barriers to total quality management using principal component analysis and correspondence analysis, International Journal of Quality & Reliability Management, 14 (4): 391-408.

Nunnally, J. (1978). Psychometric Theory. New York: McGraw-Hill.

Palo, S., and Padhi, N. (2003). Measuring effectiveness of TQM training: an Indian study. International Journal of Training and Development, 7(3), 203-16.

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

Rad, A. M. M. (2006). The impact of organizational culture on the successful implementation of total quality management. The TQM Magazine, 18 (6): 606-625.

Rahman, M.N.A., Shokshok, M.A. and Wahab, D.Z. (2011). Barriers and Benefits of Total Quality Management Implementation in Libyan Manufacturing Companies. Middle-East Journal of Scientific Research, 7 (4): 619- 624.

Salegna, G., and Fazel, F. (2000). Obstacles to implementing quality. Quality Progress, 33(7): 53-7.

Sebastianelli, R. and Tamimi, N. (2003). Understanding the obstacles to TQM Success. Quality Management Journal, 10(3): 45-55.

Senapati, N. R. (2004). Six sigma: Myths and realities. International Journal of Quality & Reliability Management, 21:683-690.

Shaari J. A. N. (2010). Barriers to Implement TQM in Japanese Way: A Study on Companies in Malaysia. International Review of Business Research Papers, 6 (5): 400-410.

Soltani, E., Lai, P. and Gharneh, N. S. (2005). Breaking through barriers to TQM effectiveness: Lack of commitment of upper-level management. Total Quality Management, 16: 1009-1021.

Tamimi, N. and Sebastianelli, R. (1998). The barriers of TQM. Quality Progress, 31(6): 57-60.

Zain, Z.M., and Amar, K. (2002). Barriers to implementing TQM in Indonesian manufacturing industries. The Magazine, 14(4): 367-372.

Zairi, M. (2002). Beyond TQM implementation: The new paradigm of TQM sustainability. Total Quality Management, 13:1161-1172.

Стаття надійшла до редакції 10.01.2012.