

## **A State-Of-Art Review Of Total Quality Management Application In Service Sector**

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**ABSTRACT :** *Over the past two eras, total quality management (TQM) has become more broadly used management short form and is looked upon as the buzz, discussion in the management practices and has proven that there is a rapid shift in the application of TQM in diverse industries from manufacturing to the service organization. TQM has become a key field of responsiveness to directors, managers, quality practitioners and researchers due to its robust impact on business operation, customer satisfaction and profitability in the sphere of hospitality, education, banking, information and communication technology as the service sector, manufacturing, and even in the public sector to restore their service quality and enhanced job performance. In the light of this, an endeavour has been worked to study and recognize the theory and perception of TQM, its benefits as well as various features of service elements and its categorizations which are applicable to the avail organization. This study has explored all the literature relevant to critical success factors for the implementation of TQM in the selected service organization. This report recognizes the critical factors of TQM and highlights the approaches of quality improvement strategies for an efficient and effective implementation of TQM in business, manufacturing and service sector. Many practices have reached at the conclusion that effective TQM implementation can progress their competitive skills and provide strategic benefits in the market. The determinations of the study also provide a comprehensive understanding of TQM, its uses and present detailed guidelines and explanations of effective implementation of TQM for the betterment of the service sector.*

**KEYWORDS:** *Banking, education, hospitality, manufacturing, performance, total quality management.*

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### **I. INTRODUCTION**

Total quality management (TQM) is an inclusive and well-designed approach available in support of developments in organizational performance. TQM practices are the key enablers for the effective implementation of TQM program from manufacturing to the service organization. TQM theory is an integrated management approach based on continuous improvement in the quality of the products, performance of processes in an organization and services that are the outputs of those developments to achieve and surpass customer's expectation (Youssef et al. 2013). Many studies have studied the concept that TQM practices which provide approach to improve the economic position of organizations manufacturing to the service organization. Identifying significant TQM practices is essential, in an effort to improve performances, productivity and profitability. TQM has the prospective to not only increase internal performance but also improves bottom-line result [2]. TQM can be defined as the systematic organization of procedures and processes to ensure efficient execution of appropriate tasks to meet the objective.

This study attempts to examine relationships between TQM practices, performances, productivity and profitability indicator. Quality advocates have identified several critical principles for successful TQM practices[3] (Saraph et al, 1989). This report recognizes the critical factors of TQM and highlights the approaches of quality improvement strategies for an efficient and effective implementation of TQM in business, manufacturing and service sector. The critical factors of TQM variables investigated in this research are training (quality related), quality measurement, human resource management, benchmarking, customer focus, employee focus, communication process management, supplier relations, training and education, teamwork, Leadership, integration, product design. Researchers further observed that implementation of TQM leads to enhanced performance like improved business, industrial growth, quality products and services, financial performance, innovative performance, education and above all customer satisfaction (CS) ([4]; [5];). The determinations of the study also provide a comprehensive understanding of TQM, its uses and present detailed guidelines and explanations of effective implementation of TQM for the betterment of the service sector. An extract of the research work carried out in this orbit is discussed.

### III . LITREATURE REVIEW

Youssef et al., 2013 carried out study for **testing the validity of the theoretical model for TQM critical success factors in hospitality industry and their impact on customer loyalty**. Total quality management was reviewed as a management philosophy which emphasizes on the work process and people, with the major apprehension for satisfying customers and improving the organizational performance. With the purpose of meeting or beating customer's expectations proper coordination of work process should be there which allow for continuous improvement in all business units. It highlighted on totality of quality in all facets of an organization with the objective of reducing waste and rework to reduce cost and increase efficiency in production and service. It recommends to provoke the cooperation and loyalty of employees for the sake of company goals via an academic, inspiring and positively rewarding relationship entered into by managers with their assistants.

The goal of the study is to check and validate the introduced theoretical model that later will offer steering for administrators, managers, quality practitioners and call manufacturers targeting to implement TQM in 5-stars hotels business to achieve their quality intentions. Extensive review of literature on customer focus, human resource management, dealer relationship management, benchmarking, process management, leadership, training and instruction, teamwork and organizational beliefs were held out by them to complete the objectives of their inquiry. From the examination of the gathered data, it was obviously clear that the 10 TQM critical success factors were not effectively implemented in these hotels. The lower degree of implementation of the 10 selected TQM critical success factors caused a low level of perceived service quality, which in return directs to a low level in both customer satisfaction and loyalty. That proved that the proposed theoretical model was valid to be used.

**TQM, managerial factors and performance in the Spanish hotel industry** were studied by Claver-Cortés, Pereira-Moliner, Tarí, & Molina-Azorín, 2008. The author aimed to analyse how TQM was associated with significant factors, such as information and communication technologies, environmental management, information systems, and training factors in the hotel industry. Further, verified whether more TQM-committed hotels achieve higher performance. A cluster analysis was carried out to identify the different TQM commitment levels. Regression analysis tested the TQM-performance connection. The findings suggested that managerial factors were significantly developed into hotels with a TQM pledge, which also had higher performances. TQM does not look to tempt all the performance variables measured. Higher performance levels were achieved in hotels showing a firmer commitment to TQM and further built up more innovative management systems. The link between social control factors and TQM, in conjunction with the link between performance and TQM were noticed.

Messaoud, 2014 attempted to **distinguish the extents of empowerment effect on the implementation of total quality management in the Algerian Al Baraka Bank of the pond**. The study was done on the leaders within the higher and middle levels within the bank solely. Critical factors of TQM were Top management, Strategic Planning, Customer Focus, Effective communication, Evaluation, Training, involve employees, motivation as independent variable and Self-determination, Ability and Impact as dependent variable are studied in their research. The relationship between the dimensions of empowerment and the adoption of total quality management was seen along with the variation in the impact of each dimension. Lastly, the perspective of administrative leaders raised up to the overall dimensions of empowerment and their relationship to the adoption of total quality management.

**An investigation of the performance indices in the food processing** units were studied by Chipandambira, Mugwindiri, & Chikuku, 2012. The results of the eighteen TQM success factors as study undertaken in the Zimbabwe food manufacturing units and processing industry in 2011 were used. The paper conjointly showed a pyramid of the TQM performance factors of the survey industry and therefore the relationship of the success factors were highlighted. Key performance indicator like employee involvement and empowerment, health and safety, training, employee satisfaction, planning and motivation were studied. Process management conjointly includes production and quality control, quality assurance, environmental, inventory management, maintenance and safety management. The result showed quality assurance, benchmarking, customer focus and process quality control were highly in position. In addition, conceptions which mainly focus on the employee were put separately as highlighted by the hierarchy. The findings showed that human resource planning, employee satisfaction, involvement and empowerment were truncated in ranking.

Yiu, Grant, & Edgar, 2007 discussed **the factors affecting the adoption of Internet Banking in Hong Kong**. This paper explored the adoption of Internet Banking by retail customers from three perspectives: (i) the current implementation rate of Internet Banking; (ii) the inspirations of perceived usefulness, risk, ease of use and personal innovativeness in information technology and (iii) the possible impacts on the strategic action of

banking organisations working in the Hong Kong market. It was found that certain elements had a positive relationship with the adoption of Internet Banking and as such policy in the banking services sector can be refined to better meet the difficulties and profile of the Hong Kong market.

**Investigating the critical success factors (CSF) of corporate social responsibility implementation from the Iranian banking sector** was studied by Kahreh, Mirmehdi, & Eram, 2013. The main purpose of the author was to identify the critical success factors of corporate social responsibility (CSR). The author read from his literature study that if the CSF of CSR were implemented, policy and decision makers can switch the commercial enterprise at a higher degree of efficiency and effectiveness, which would achieve sustainable development in a turbulent business background. To achieve that purpose and to identify the CSFs of CSR implementation the author gathered evidence from the banking sector of Iran. All the identified CSFs were categorized in the different areas which include human resources, marketing, environmental, financial and strategic. The results of the study showed decision makers in the field will be more accustomed with CSR and could make higher resolutions for the chief departments of the organization.

A. Agus & Z. Hassan, 2008 investigated **the effect of total quality management (TQM) practices on productivity and profitability in Malaysian electronics and electrical industry**. The author had surveyed 110 companies and statistical tools such as correlation, multiple regression and path analyses were used. The study confirmed the significant impact of TQM variables in enhancing productivity and profitability. The result also provided evidence that improving internal practices would positively impact the most important performance measures. Further, the result indicated that electronics and electrical companies should put emphasis on attention to total quality management aspects of the manufacturing process and a greater degree of management support for quality programs such as quality measurement, benchmarking and employee focus. The TQM variables, specifically quality measurement, benchmarking and employee focus had a significant direct effect on productivity, Benchmarking and supplier relation had positive and significant direct effect on profitability. Productivity had a significant and direct effect on profitability which also agreed that Productivity mediates the linkage between TQM and profitability. In addition, training and education were also important in undertaking the change itself. Preparing an institute for a change and institutionalizing it as a long-lasting portion of the organization.

Bayazit, 2003 studied **total quality management (TQM) practices in Turkish manufacturing organizations**. TQM refers to a quality emphasis that incorporates the entire business, from supplier to customer. The author analyzed the TQM practices in the Turkish manufacturing industry, based on a survey conducted among 100 large companies. The key finding from the investigation were that an increasing number of companies in Turkey were willing to implement TQM to produce competitive advantage. The important factors for a successful implementation process were employee involvement, top management support and customer focus, teamwork, quality education and training and commitment.

**An instrument for measuring total quality management implementation in manufacturing-based business units in India** were carried out by Joseph, Rajendran, & Kamalanabhan, 1999. Total Quality Management (TQM) is an integrative management philosophy calculated at continuously improving the quality of products and techniques to achieve customer satisfaction. This study offered a set of critical factors as quality policy, quality information systems, human resources management, operating procedures, product design, organizational commitment, supplier integration, technology utilization, and role of quality department and training with a total of 106 operating system elements of quality management as a comprehensive measure of TQM operation. The findings of the study would be useful for both practitioners and researchers. The managers could use that model to evaluate the extent of TQM practice within their organization, identify those areas of TQM where improvements could be made, further, it could recognize those areas of TQM where excellence currently exists and lastly, compare with other divisions or business units.

Forker, Mendez, & Hershauer, 1997 studied that **empirical studies of quality management had led to mixed findings regarding a significant positive relationship with performance**. The author had used both nonlinear (DEA) and linear (regression) statistical tools for analyses to demonstrate TQM practices that were related to good performance. The eight elements were Training, Management leadership, quality policy, design of Product or service, Supplier quality management, Quality data and reporting, Process Management, Employee relations, and Role of the quality department. To achieve the final goal of consumer satisfaction, they believed that those practices must be implemented all the way through the supply chain. TQM in upstream (supplier) operations was significantly necessary for reassuring downstream quality results.

They established that relationship using objective (not self-reported) quality performance information. Manufacturers should be encouraged to continue promoting TQM practices throughout the supply chain as certain practices do lead to better performance.

An attempt was made by Kumar, Mantha, & Arun, 2009 to **identify scrap reduction by using total quality management tools**. To identify the desire workability authors studied a case that was administered in one among the leading Indian industries manufacturing pre-stressed concrete steel strands (PC wire). It had major applications in bridges and construction industry. Throughout their study the author ascertained ton of scrap. Hence the author concentrated on the study of scrap as their exploration. Reasons for scrap was found out using total quality management tools such as cause & effect diagram, brainstorming and Pareto analysis. The result showed that the majority of the scrap was left over non-conformity, rings, chheda and weld/wire damaged. The focus by author was to production and service activities of corporations. In the second section, they presented an outline of TQM information requirements with the help of data flow diagramming and recommended changes that occur in system usage within the three main organizational functions: planning organizational activities, making products and the selling of products. The contribution in presenting proof, though subjective, from organizations at the front position of TQM practice, that TQM was **associate degree** information-intensive management scheme, then rising a model for the facts needs in TQM.

**Application of total quality management in education** has been studied by Farooq, Akhtar, Ullah, & Memon, 2007. The authors analysed the thoughts of the modern management standard Total Quality Management (TQM) which are used in the arena of education. The elementary theme of TQM was participatory methodology to address the question(s) of quality in business as well as in the field of education. The summarised work of W. Edward Deming's fourteen principles for quality assurance, fourteen points of Philip Crosby for quality management & the indication of zero defect, and J. Juran's three components quality improvement, quality control and quality planning were conversed. TQM philosophy encouraged the students, teachers and the employees for extraordinary performance. TQM philosophy could help a school or college in providing improved facilities to its primary customers, students and employers. The continuous improvement focus of TQM was a necessary way of rewarding the answerability requirements shared to educational reform. Functioning a no-fear TQM structure with a focus on continuous growth and improvement deals more enthusiasm and challenge to students and teachers than a better learning atmosphere could be provided.

**Using quality management procedures in education for managing the learner-centered educational environment research** were carried out by Stukalina, 2010. From the previous studies the author was in the opinion that the importance of quality management in education is increasing day by day. The main issue in managing for quality was in the field of education. An effective and motivating educational environment was one of the key tasks for education managers. Right management of the educational environment presumes giving a special attention to students' needs and requirements so as to better educational practice and raise educational quality. The impact of effective educational environment motivates students for further works. In that setting, the author regarded student motivation as an indispensable element for the educational environment quality improvement. Almost all quality management processes were counted that can be used by education managers so as to have qualitative changes in the educational surroundings. To better the calibre of the educational environment, several management tools were used and regular educational environment evaluation was one among them. It includes collecting student feedback, which is a valuable source of systematic input in the operation of the environmental quality enhancement.

**Implementation of ( TQM ) in the faculty of planning & management at Al-Balqa applied university** had been researched by Salameh, Alzyadat, & Alnsour, 2011. The author defined TQM as a philosophical scheme of governing bodies, improved organizational performance and administrative systems. Complete the objective was to climax the final rules and necessities of TQM and to draw attention to however that attack may possibly be used to higher the the calibre of the academic institution. The exploration mainly included the implementation of TQM as a current methodology which was however confined in the Arab lands, mostly at higher education institutions. Teamwork, continuous improvement, integrated coordination, creativity and innovation were the elements of TQM philosophy. They had observed that the competent administrative leadership was the backbone for implementing TQM methodology. The findings also concluded that there was no concentration on continuous improvement, Teamwork and coordination, which lead to creativity and innovation. The results appeared from the investigation directed that there was a weakness in training for administrative leadership in the universities and colleges which was necessary to the success of implementing that recent management approach. Learning, development and training played an essential role in growing technical and information skills to all participants of the University institution. The Malcolm Baldrige approach used in that study formed an excellent model of TQM.



Grygoryev & Karapetrovic, 2005 aimed to introduce **an integrated system for measuring, modelling, and managing teaching and learning performance in a university classroom environment**. They had focused on four management tools, namely a statistical process control, performance measurement framework, system dynamics and structural equation modelling to support professors' address important teaching and learning performance management issues. Concentrating measurement efforts on teaching and learning processes, rather than focusing on outputs, such as the number of students passing a course, or outcomes were their findings. They mentioned that average test scores, agrees for early recognition of problems in the classroom setting. Based on the findings the proposed system could be practically implemented by individual professors for checking the learning performance of their students as well as their own teaching performance. Changes to the course structure, frequency of homework and assignments given or the size of in-class exams, would affect student attitude and performance toward the subject of the course may also be analysed by the Professors.

**A total quality management methodology for universities** were studied in detailed by Flores-molina, 2011. The author was encouraged by the demand for an effective, systemic quality upgrading procedure at universities as no procedure was planned for a total quality management (TQM) program in a university. The research emphasized on the need of cultivating the quality of universities. The author has used on various situation TQM models and standards provided by Baldrige, ISO 9000 , Six Sigma and educational accreditation standards found in ABET and SACS. The recommended methodology would help the user to change a TQM plan in five progressive phases as assessment, commencement, analysis, approval and preparation. To constantly meet the accreditation bodies' and stakeholders' expectation for continuous improvement the need for a TQM Methodology would give significant to the universities. Further, their improvement would have a direct impact on the quality of the society.

Chowdhury 2014 defined **the necessity of total quality management (TQM) and quality assurance (QA)** study into the undergraduate chemistry, science, engineering curriculum based on the consideration of current declining trend of business, education in science and technological suggestions with science, and for students to distinguish science knowledge as beneficial, interesting and to be appropriate. He argued the validation of TQM and QA study in the undergraduate course, and explains the essential causes for not being available in higher education. Further, he talked over associated subjects and problems related to TQM and QA required to consider for implementation and, in context of the outlined course. It was found that TQM and QA provided the opportunity to learn applied science and associated business consequences, boost student motivation and schedules, increases decision-making and problem- solving talents. Students became innovative, developed thinking aptitude in a structured and logical way to express views, and clearly their knowledge-building hard work became evident. With the implication of TQM and QA it was observed that students easily provide lodgings into the workforce; and enrich employability. Students achieved higher responsiveness of the social associations of science studies, better ready to become future educated citizens, and take responsibility.

Gambhir, Wadhwa, & Grover, 2012 had made an endeavour to **find the critical factors for technical institution evaluation from literature survey**. A Pareto analysis had also been executed to find the strength of these critical factors in assessing. The stakeholders would not only benefited by taking right decisions, but would also help the management of institutions in benchmarking for identifying the most important critical areas to improve the existing system. They emphasized that Technical institution evaluation was important for stakeholders, management as well as for a strong economy of India. The results of the Pareto analysis showed that top management was the most targeted factor in literature, as the vision and policies of the top management were correct and in the best interest of stakeholders and the institution which was in the benefit of everyone. Faculty was the second important factor which were the pillar of any good technical institution. A good infrastructure would certainly produce more prospects to provide the class education which was the last critical factor.

**A new perspective for quality improvement in teaching and learning processes** was done by Yeap 2008. The Author adopted and used the principles from one of the Quality Management methods, Total Quality Management as the teaching methodology and improved agenda in managing, inspecting and increasing the quality of teaching and learning practices in higher education were focused. Using these Quality Management attributes into the educational equation would create value for educational institutions, employers, and students. He developed models to adopt a view that quality teaching that actively involves interactions and participations with the students that could make a significant difference to cause students to learn. He emphasized that any continuous improvement effort be operative, quality and trustworthy feedback evidence was essential and important in the evaluation procedure of teaching and learning with the output should be clearly defined and measured.

**To determine the relation between Higher education and total quality management** an attempt was made by Koch and Fisher 1998. Authors strongly beliefs that the use of total quality management (TQM) in higher education would definitely unite university grounds, rise employee satisfaction and improve closely any method that it touches. Unfortunately, the empirical proof in favour of TQM in universities was mostly unreliable and surprisingly scant. The evidence that TQM could be of assistance in improving administrative service areas (registration, mail service, maintenance, billing, etc.), and that it has been used to enhance certain quasi-academic areas such as library services. But significant problems which were faced by higher education was to relate to the nature of the core curriculum, time taken by faculty, reduce cost, distance learning and the usage of technology, relationships with business, governance and leadership activities. TQM had slight to say about these things and even builds refined roadblocks to change in these areas because of its strong importance upon meetings, consensus and process over product. Thus, while TQM appeared to have been quite helpful to some business firms, it was only slightly valuable in the rapidly changing, certainly revolutionary, environment that universities live in today.

Tasar and Celik 2011 conducted their research in **examination of implementation level of the total quality management principles by the principals and teachers functioning at elementary schools**. The authors conducted their study for the purpose of inspecting the implementation levels of the Total Quality Management principles by the principals and teachers functioning at the elementary schools. He executed with 30 school principals and 300 teachers functioning of the public elementary schools in Adiyaman province. He concentrated on the study of the stratum that the school employees pay regard to the leaders of the top management, participate in the decisions, customer orientation, continuous growth, and communication level and motivation principles. It was further researched that whether the level of implementation of such ideologies by the principals and the teachers differ depending on their gender, marital status, age, education grade and tenure of service. It was discovered that the principals and the teachers functioning of the elementary schools implemented the Total Quality Management principles at their occupational studies and found that the teachers had higher implementation levels than the principals as regards such principles. Also, no significant difference was generated between the parties when the level of implementation for the total quality management principles are studied in terms of age, marital status and sex variables. The seniority had no significant difference amongst the teachers. Further, there was no significant difference in application of the continuous development principle among the principals.

## II. FINDINGS

Look, I have just proven my topic statement by presenting a huge collection of literature on TQM and its applicability in the service sector, education industry, Banking, ITC and manufacturing sector. Based on the review of important literature and the inferences from the existing literature survey determines that TQM has positive impact on service organisation performance and has been adopted as an useful methodology in number of service industries, such as hospitality, electronic, banking, education, ICT and manufacturing industry. Further, the conclusion of this research suggests that TQM is accountable for development and growth of country's economy. The more rigorously TQM is being implemented in business, the better business performance is perceived. The TQM literature suggested that for implementing TQM effectively in an organisations, company must have patience, as TQM is a continuing process and requires major changes in the mind-set of the employee as well as in cultural aspects in an organisation. Further, the outcome of this study suggest that TQM is associated with more customer satisfaction, top management commitment, customer focus, team work as most important factor for service organization. Besides, in increasing such a background on TQM, the present study can help in identifying the key practices for effective TQM implementation in service sector for better performance.

- The most target factor is top management involvement for the better interest of the stakeholders. The vision and policies of the top management should be implemented correctly.
- Trustworthy feedback, evaluation procedure of teaching and learning, focus on continuous improvement should be made operative to gain high quality in all areas.
- The view of administrative leaders raised up to the overall dimensions of empowerment and their association with the implementation of total quality management.
- Administrative leadership was the backbone for implementing TQM methodology.
- Human resource planning, employee satisfaction, involvement and empowerment were also supportive factor for achieving better performances.
- Training and education are also important in undertaking the change itself, preparing an institute for a change and institutionalizing it as a long-lasting portion of the organization.
- To avoid defects employees should be trained and encouraged.

- Quality professionals should train employees and other managers with TQM techniques to improve quality. For improving the production rate, the methods for prevention in reduction of defect or failure should be made clear to the employee and should be focus to implement it.
- Manufacturers should be encouraged to use TQM practices throughout the supply chain as certain practices do lead to better performance.
- Reduction in scrap and defective products proceeds directly in saving cost and growth in productivity index.
- Learning, development and training played an essential role in growing technical and information skills to all participants of the school, higher education, colleges and University institution.
- The use of total quality management (TQM) in educational industry will definitely unite educational grounds, rise employee satisfaction.
- A good infrastructure will certainly produce more prospects to provide the class education.
- Schools, colleges, universities, principals and educators must have concentration on the educational necessities of the learners and focus on methods to bring about quality education for the betterment of the future world.
- The influence of a TQM on teaching and learning strategies can increase learning and its importance on the quality of product, orientation to students, encouragement of teamwork, and a continuing desire to improve.

### III. CONCLUSION

Though, there are additional total quality management critical success factors, researchers have agreed out in various industries, but it is apparent that they are demanding to improve the findings of the previous studies. This study exposes that TQM will leave an outstanding impression on the institutions aim's and creates value in enhancing the economic significance. It is seen that there are absences of adoption of this TQM approach in several organizations compared to the implementation of TQM to bring changes in organization. In conclusion, the proposed conceptual model represents the critical success factors of TQM and its implementation on service sector, banking, manufacturing, education industry and ITC and its effect on its performances in business.

### IV. BIBLIOGRAPHY

- [1] W. Youssef, M. Prof, A. Alhakim, and A. Manhaway, "Testing the Validity of the Theoretical Model for TQM CSFs in hospitality Industry and their impact on Customer Loyalty , Results ;," *Int. J. Sci. Eng. Res.*, vol. 4, no. 4, pp. 1622–1639, 2013.
- [2] R. H. Schaffer and H. A. Thomson, "Successful change programs begin with results.," *Harv. Bus. Rev.*, vol. 70, pp. 80–89, 1992.
- [3] J. V. Saraph, P. G. Benson, and R. G. Schroeder, "An Instrument for Measuring the Critical Factors of Quality Management," *Decis. Sci.*, vol. 20, pp. 810–829, 1989.
- [4] R. W. Y. Yee, A. C. L. Yeung, and T. C. E. Cheng, "The impact of employee satisfaction on quality and profitability in high-contact service industries," *J. Oper. Manag.*, vol. 26, no. 5, pp. 651–668, 2008.
- [5] A. S. Sohal and M. Terziovski, "TQM in Australian manufacturing: factors critical to success," *International Journal of Quality & Reliability Management*, vol. 17, pp. 158–168, 2000.
- [6] E. Claver-Cortés, J. Pereira-Moliner, J. J. Tarí, and J. F. Molina-Azorín, "TQM, managerial factors and performance in the Spanish hotel industry," *Industrial Management & Data Systems*, vol. 108, pp. 228–244, 2008.
- [7] M. Messaoud, "relationship between empowerment and the adoption of total quality management: From the point of view of top and middle leaders in Al Baraka Bank of Algeria," *iosrjournals.org*, vol. 16, no. 1, pp. 23–27, 2014.
- [8] N. Chipandambira, K. Mugwindiri, and T. Chikuku, "Total Q Uality M Anagement : A N Investigation Of The Performance Indices In The Food Processing In-," *Int. J. Adv. Technol. Eng. Res.*, vol. 2, no. 6, pp. 1–4, 2012.
- [9] C. S. Yiu, K. Grant, and D. Edgar, "Factors affecting the adoption of internet banking in Hong Kong: Implications for the banking sector," *Int. J. Inf. Manage.*, vol. 27, pp. 336–351, 2007.
- [10] M. S. Kahreh, S. M. Mirmehdi, and A. Eram, "Investigating the critical success factors of corporate social responsibility implementation: evidence from the Iranian banking sector," *Corp. Gov.*, vol. 13, pp. 184–197, 2013.
- [11] A. Agus and Z. Hassan, "Employee Focus On Productivity And Profitability : A Path Analysis," In *Pbfeam Conference*, 2008, pp. 2–4.
- [12] O. Bayazit, "Total quality management (TQM) practices in Turkish manufacturing organizations," *The TQM Magazine*, vol. 15, pp. 345–350, 2003.
- [13] I. N. Joseph, C. Rajendran, and T. J. Kamalanabhan, "An instrument for measuring total quality management implementation in manufacturing-based business units in India," *Int. J. ...*, vol. 33, no. 10, pp. 2201–2215, 1999.
- [14] L. B. Forker, D. Mendez, and J. C. Hershauer, "Total quality management in the supply chain: What is its impact on performance?," *Int. J. Prod. Res.*, vol. 35, no. 6, pp. 1681–1702, Jun. 1997.
- [15] S. Kumar, S. Mantha, and K. Arun, "Scrap reduction by using total quality management tools," *Int. J. Ind. Eng.*, vol. 16, no. 4, pp. 364–369, 2009.
- [16] M. S. Farooq, M. S. Akhtar, S. Z. Ullah, and R. A. Memon, "Application Of Total Quality Management In Education," vol. III, pp. 1–11, 2007.
- [17] Y. Stukalina, "Using quality management procedures in education: Managing the learner- centered educational environment," *Technol. Econ. Dev. Econ.*, vol. 16, no. 1, pp. 75–93, Jan. 2010.
- [18] R. Salameh, M. Alzyadat, and J. Alnsour, "Implementation of (TQM) in the Faculty of Planning & Management at Al-Balqa Applied University," *Int. J. ...*, vol. 6, no. 3, pp. 194–207, 2011.
- [19] K. Grygoryev and S. Karapetrovic, "An integrated system for educational performance measurement, modeling and management at the classroom level," *TQM Mag.*, vol. 17, no. 2, pp. 121–136, 2005.
- [20] J. C. Flores-molina, "A Total Quality Management Methodology For Universities," Florida International University, 2011.
- [21] M. a. Chowdhury, "The necessity to incorporate TQM and QA study into the undergraduate chemistry/science/engineering curriculum," *TQM J.*, vol. 26, no. 1, pp. 2–13, 2012.

- [22] V. Gambhir, N. C. Wadhwa, and S. Grover, "Pareto analysis of critical factors affecting technical institution evaluation," *Manag. Sci. Lett.*, vol. 2, no. 5, pp. 1701–1706, Jul. 2012.
- [23] B. Yeap, "A New Perspective for Quality Improvement in Teaching and Learning Processes," *EDU-COM Int. Conf.*, no. November, pp. 19–21, 2008.
- [24] J. V. Koch and J. L. Fisher, "Higher education and total quality management," *Total Qual. Manag.*, vol. 9, no. 8, pp. 659–668, Dec. 1998.
- [25] H. H. Tasar and M. Celik, "Examination of Implementation Level of the Total Quality Management Principles by the Principals and Teachers Functioning at Elementary Schools: The Case of Adiyaman Province," *Asian Soc. Sci.*, vol. 7, no. 9, pp. 33–42, Aug. 2011.