Implementing the Requirement of Quality Management System According to ISO 9001:2008 in Higher Education Institutions: A Case Study for Sirte University in Libya

Eltayeb Mohamed Elgobbi

Abstract—The rapid changes in the business environment and the pressures associated with the global competition have led several institutions to pay special attention to adopt the concepts of Total Quality Management (TQM) in order to achieve their competitive advantage. The concentration in investing in human capital, which is a supplier of the most prominent among the resources available to those institutions is not the only way to get a position in the global market. Therefore, since the last decade of the last century, several calls have been started by international and regional institutions to focus on higher education institutions within the interest of public education institutions in the community as the body directly responsible for building the human resources and consequently the society.

Sirte University which is one of the governmental institutions in Libya has been working tirelessly since 2008 to create the necessary requirements for the establishment of an appropriate system of TQM, trying through which to accomplish its mission, by achieving and satisfying the expectations of the beneficiary in line with the requirements of quality systems including the International Organization for Standardization (ISO) 9001:2008 in an effort to achieve its vision in global excellence. However, despite of the huge efforts that have been made in this context, the University is still far from the starting phase of the regional and international accreditation.

The purpose of this paper is to assess the extent of the practice of Quality Management System (QMS) in Sirte University compared to the requirement of the ISO 9001:2008. It has come out with a set of results indicating the extent of the policies and strategies of QMS at Sirte University in fulfilling the requirement of quality performance of this institution according to ISO 9001:2008. It has also identified the strength and weaknesses in applying this requirement. Furthermore, this study has made some proposals in which shortcomings in performance can be avoided.

Keywords—TQM, ISO 9001:2008, Quality in Higher Education.

I. INTRODUCTION

QUALITY has always been a matter in business dealings between various and different groupings and parties. During the last two decades significant attention has been emphasized on the subject of quality and much literature has been written outlining how institutions should set about their improvement (Dale et al, 2001). "The quality movement can be seen as a term which could be seen as referring to a set of ideas and principles incorporating those listed above which are adopted in organizations under a variety of names including: total quality management (TQM), Six Sigma, ISO 9000, business excellence and many other more specific tools and techniques such as lean manufacturing, quality function deployment and Statistical Process Control (SPC). It might be considered as encompassing broader organizational cultures, strategies and structures involving leadership, continuous improvement and employee involvement to very specific operational tools such as seven tools, SPC, 5S and so on" (Brown, 2013, p. 585). Quality has been defined by several authors. For instance, (Ovretveit, 2000, p. 75) defines it as "exceeding customer expectations". In addition, the American Society for Quality Control defines quality as "the total features and characteristics of a product or service made or performed according to specifications to satisfy customers at the time of purchase and during use" (Talha, 2004, p. 16).

There are general principles of quality. The most common principles include: continuous improvement, teamwork, empowerment, use of data and facts for decision making, problem solving, and customer satisfaction (Evans, 2005). The core principle is the total orientation of all actions and activities of institution to fulfilling and satisfying customers and making value to various and different stakeholders, customers, human resources, shareholders, suppliers, and society (Martins and Toledo, 2000). "In today's competitive business world it is very important to adopt total quality management principles not only for making profits but also for survival" (Yapa, 2012, p. 505). TQM currently provides the logical, coherent structure and scientific tools for the enhancement and improvement of quality (Reed et al., 2000). In addition, (Garvin, 1987) mentions the following eight dimensions for quality and he applies them in the higher education. These are:

Eltayeb Mohamed Elgobbi is with the Department of Management, Sirte University, Libya (e-mail: e.elgobbi@gmail.com).

1. Performance: Primary knowledge/skills required for graduates.
2. Features: Secondary/supplementary knowledge and skills.
3. Reliability: The extent to which knowledge/skills learned are correct, accurate and up-to-date.
4. Conformance: The degree to which an institution/programme/course meets established standards, plans and promises.
5. Durability: Depth of learning.
6. Serviceability: How well an institution handles customers' complaints.
7. Aesthetics.
8. Perceived quality.

Total Quality Management (TQM)

TQM is a set of management applications and practices, concentrating on customer satisfaction and continuous organizational development. Therefore, it has been widely adopted by enormous number of organizations and institutions (Yusof and Aspinwall, 2000; Bhat and Rajashekhar, 2009). TQM involves managing for the future and putting forward intensive efforts to put together people, organizational processes, and other organizational resources successfully and effectively (Sumarjan et al., 2012). It requires to get to the core rapidly and becomes a method of life in many organizations (Oakland, 1989). TQM is an ever-evolving practice of managing business in a bid to improve methods and processes which cannot be imitated by other competitors (Dale, 2003). The focus of the TQM values is based on continuing relationships with staff, suppliers and customers (Pun, 2001). A successful TQM implementation is associated with financial and performance success (Mosadeghrad, 2014).

TQM has been defined by many writers. For example, Dale (1999, p. 9) defines TQM as "the mutual co-operation of everyone in an organization and associated business processes to produce products and services, which meet and, hopefully, exceed the needs and expectations of customers. TQM is both a philosophy and a set of management guiding principles for managing an organization". In addition, The American Federal Office of Management (cited in Morgan & Murgatroyd, 1997, p. 7) defines TQM as "a total organizational approach for meeting customer needs and expectations that involves all managers and employees in using quantitative methods to improve continuously the organization's processes, products, and services". The most widely used definitions, such as the American Society for Quality (ASQ) and the more recent ISO 9000 definitions, are based on customer satisfaction, which may be accomplished not only via conformance to requirements but also some inherent characteristics of the product or service, and the methods they are presented and delivered to customers (Lillrank, 2003).

TQM allows institutions to achieve a high degree of differentiation and to diminish as well as reduce costs (Quazi and Padibjo, 1998; James, 1996). The central part of the TQM philosophy is "absolute customer focus" (Khan, 2003, p. 375). TQM basically refers to the wide set of management and control processes designed to concentrate on an entire institution and all of its human resources on providing products or services that do the greatest possible job of fulfilling and satisfying the customer (Talha, 2004). It has been clearly stated that "the job of improving and ensuring quality is no longer solely the responsibility of certain people or for departments of the organization. It is the responsibility of everyone. The people in the organization are required to make quality a culture in their daily lives. Furthermore, it is also important to understand that TQM is a long-term perpetual improvement process requiring significant resources, both financial and human. It is a dynamic process – not a static one. It is a continuous effort with no deadlines or target dates. The process can never be considered complete since there is no goal or destination; hence, TQM becomes a way of life" (Mehra et al., 2001, p. 856). Obviously, a total quality future necessitates an educated people, able to contribute and participate fully to a clearly stated direction. The personal development of both leaders and team members is fundamental and very important (Choppin, 1995).

International Organization for Standardization (ISO) 9001

The beginning of 1990s was a period when several organizations and institutions were starting to adopt and use systems of accreditation for their suppliers and this applied also to governments and even the international organizations. Therefore, many organizations and institutions required certification of ISO 9000 in order to enter certain markets and get tender for government (Brown, 2013). The ISO 9001 is an international standard belonging to the ISO 9000 series that determines a set of minimum requirements for applying and implementing QMS (Goetsch and Davis, 2002). It has been found that ISO 9001 certification is needed because of a combination of internal and external motives (Beattie and Sohal, 1999; Tsiotras and Gotzamani, 1996; Kim et al., 2011; Yahya and Goh, 2001; Blessner et al., 2012). Several institutions have required ISO 9001 certification because they believe that it would help them to continue or advance the quality systems of their products/services, or also to develop their internal performance and activities (Zaramdini, 2007; Fotopoulos et al., 2010). The main purpose of the ISO 9001 was to identify a set of requirements and practices that could be applied to organizations and institutions, regardless of the products or services they produce. The implementations and applications of these practices, and conformance to the requirements, should allow an organization to distribute products and services that consistently meet the quality requirements of customers. An institution or organization can gain formal objective confirmation of conformance to one of the ISO 9001 standards through third party certification. Some organizations have pursued ISO 9001 certification mainly as they believe that failure to accomplish it would harmfully influence their success in getting business contracts (Blessner et al., 2012; Jones et al., 1997; Sampaio et al., 2009). The ISO 9001 standard predicts and calls for process management in some items. It is therefore a normal practice to discover institutions with documents containing process map, flow diagrams and other process descriptions that show and guide individuals to perform their duties and tasks (Tague, 2004).

The ISO 9001 addresses various aspects of quality management and includes some of ISO's best known standards. The standards offer directions, guidance and tools for institutions and organizations who desire to guarantee that their products and services consistently meet customer's requirements, and that quality is consistently enhanced and improved (ISO, 2013). To maintain ISO 9001 more efficiently and effectively, data on process and system performance and feedback from customers must be investigated and discussed in the management review meeting in order to notice possible continual improvement chances and corrective and preventive actions (Ab Wahid, 2012).

ISO 9001:2008

ISO 9001:2008 sets out the criteria for QMS. It can be used by any institution, company or organization, large or small, regardless of its field of activity. In reality, ISO 9001:2008 is implemented by over one million firms, institutions and organizations in over 170 countries. The standard of ISO 9001:2008 is based on a number of quality management principles including a strong customer focus, the motivation and implication of top management, the process approach and continual improvement. Using ISO 9001:2008 assists to guarantee that customers obtain consistent, excellent quality products and services, which in turn achieve several business benefits (ISO, 2013).

QMS and ISO in Higher Education

The adoption of ISO 9001 is becoming a well-liked selection for educational institutions across all stages and levels of education in many countries in the world, despite of the fact that there are various substitute frameworks to help institutions in applying and implementing TQM (Moreland and Clark, 1998; Singh and Sareen, 2006). Designing and implementing of quality assurance system is a real responsibility of each Higher Education Institution (HEI) (Hernandez, 2010). "HEIs have an obligation to plan and implement their quality assurance systems, but the autonomous institutions typically have no specifications as regards the structure and contents of the system. That allows HEIs to develop the systems and procedures that are consistent with their own strategic and operational objectives and requirements. The autonomy allows the use of external support to audit the quality assurance systems and to select the internal procedures of quality assurance" (Kettunen, 2012, p. 525). The quality of certain activity in a university setting is determined by the quality of management. Continuous improvement of quality management contributes to improved and enhanced quality of services in general (Lagrosen and Lagrosen, 2005).

Quality assurance in Higher Education has been an issue of much debate in these days. Quality has long been essential in education all over the world. There is a general agreement that quality and assurance of quality are vital for the continuation and improvement of higher education (Kistan, 1999). "Quality assurance mechanisms must be explicit rather than implicit ... institutions should be able to demonstrate their commitment to maintaining and raising the quality of their work in a manner consistent with their recognized objectives" (Loder, 1990, p. 5). Burke (2005) illustrates four basic techniques related to quality assurance and he applies them in higher education institutions. These are:

1. Accreditation: A concentration on institutional development and improvement via self-study and peer review.
2. Audit: An investigation of an institution's quality assurance and improvement processes rather than the conveying quality of the education itself.
3. Assessment: Evaluation of the influence of an institution on its students, centered on learning results.
4. External examination: A focus on experts, reviewing confirmation of performance of individual students, of study/degree programs, or of entire institutions.

II. RESEARCH METHODOLOGY

The descriptive approach will be followed to conduct this study, and the case study approach will be adopted. The case study approach helps in the overall analysis and depth of the problem researched in Sirte University, and it gets vast amount of data for all events associated with the situation, and allows the researcher to summarize, analyze and select directly what is suitable for the study. The case study method is characterized by many advantages as it requires the use of more than one scientific method of research to gain access to the most accurate results.

Research objectives

This research seeks to achieve the following objectives :

1. To study the current quality system in Sirte University for the application of QMS requirement according to the specification of ISO 9001:2008, by identifying the gap between the current reality of the quality and what is required to be achieved.
2. To attempt drafting some proposals to address some of the weaknesses that prevent the application of the requirement of QMS according to ISO 9001:2008 in order to accomplish the total application of this requirement.
3. To identify and document the frameworks of intellectual and philosophical approaches and concepts related to quality, total quality management , and ISO as methods of management aimed at improvement and continuous development of quality and productivity, and performance of the University as a whole.
4. To introduce various concepts and contributions made by the early pioneers of these approaches.
5. To suggest appropriate recommendations and solutions that can help various administrations, departments and sections of Sirte University to improve and enhance the level of service quality, and to continue the process of continuous improvement of these services.

Research Problem

Quality is considered as key indicator of the effectiveness of the higher education institutions, and the function of their competitive advantages. However, the attention and interest to

quality does not only depend on the quality of the final service provided, but also on the quality of the entire institution. This is what has been indicated in the international standards of ISO 9001:2008 in order to ensure that the requirements of the beneficiary are met. The main problem here is in the application of the requirements of the required specifications that are appropriate to the nature of the institution's activities in order to get the ISO 9001:2008. This research strives to find answers to the following questions:

1. What are the main concepts of a TQM?
2. How are the quality concepts perceived in higher education institutions?
2. What is the role of the management of Sirte University in implementing the QMS requirement in the University?
4. How is the requirement of QMS assessed in Sirte University according to the international standards (ISO 9001:2008)?

Research Hypothesis

Sirte University has passed several years of experience in the field of quality, where it has achieved many positive steps. However, this experience did not go up to the level of international accreditation because there are many difficulties and shortcomings, which require more investigations. The main hypothesis of this research has been formulated as follows: "The current quality system applied in Sirte University regarding the requirement of QMS does not upgrade or comply with the international standard of ISO 9001:2008."

The Evaluation of the current quality system in Sirte University

The purpose of this section is to view and analyze the data collected from the actual performance of Sirte University. The reason for this is to know the current application of the quality system compared with the requirements of the International Standards ISO 9001:2008. To achieve this, several steps have been adopted in order to implement the mechanism of actions.

These steps are:

1. In order to evaluate the quality system of Sirte University, checklists have been adopted. These checklists were adopted from previous studies, such as (Cianfrani and West, 2003) (Schlickman, 2003), (Kanholm, 2002). The prepared checklists for this study include 8 questions, spread over 2 items, consisting of the essential requirement related to QMS according to the specification of ISO 9001 version 2008. These checklists have been distributed to the responsible managers in the office of quality assurance and performance evaluation in Sirte university.
2. Triple Likert Scale is used for the measurement, where a weight has been allocated to each item of the scale, as it can be seen from the following:

Items of the Triple scale and weights

Items of the scale	Weight
Applied totally	2
Applied partially	1
Not Applied	0

3. To indicate the amount of the gap occurring between the current quality system and ISO 9001:2008 requirement of QMS, the quantitative analysis of the answers from the checklists will be analyzed according to the following equations:

Weighted Arithmetic Mean (weighted average) is used in order to know the real rate after rounding. This helps to implement the requirement of the specification in Sirte University. The following equation has been used:

Weighted Arithmetic Mean =

$$\overline{X} = \frac{\sum x_i . f_i}{\sum f_i}$$

Whereas, x_i = weight

f_i = frequency

After the completion of the process of comparison of scale items, the level of QMS requirement and the number of stages required to reach the exact conformance was determined (application entirely) with the specification of ISO 9001:2008. Then the percentage of the application of QMS according to ISO 9001:2008 was determined. This percentage reflects the amount of conformance and differences with the requirement of the specification, by applying the following equation:
The percentage for the implementation of QMS requirement =

$$\frac{\sum x_i . f_i}{\sum x_i . w}$$

Whereas, W = Total Weight

4. Based on the results of checklists, interviews, cohabitation field, overall observation, documents and field survey of the performance of various activities of the departments in Sirte University, the written expression is used as a mean of analysis for the actual performance of the University in terms of quality systems through the diagnosis of the strengths and weaknesses of each item of the QMS according to the ISO specification 9001:2000. It should strengthen and enhance the existing strength points, and deal with the weaknesses and convert them to be strength points and thereby achieving the total conformance with the requirements of international standard of ISO 9001:2008, which consequently lead to the achievement of

Quality Management System	The Application in the University		
	Fully applied	Partially applied	Not Applicable
4.1 General Requirements:			
1. Have you identified the specific requirements of ISO 9001 : 2008 , which can be applied to the University ?			●
4.2 Documentation Requirements:			
4.2.1 General:			
2. Have you identified the activities that need to be documented?		●	
3. Does the University have its own Directory and guide of quality ?		●	
4. Are there detailed procedures regarding activities affecting quality?		●	
4.2.3 Document Control:			
5. Has the University got adequate procedures to control the documents and data related to quality ?		●	
4.2.4 Adjustment of quality records:			
6. Do the documents have a coding system ?	●		
7. Has the University named the person responsible for the authorization of documents?	●		
8. Is there a procedure to obtain in advance the authentication of documents by the beneficiary when necessary ?	●		
Weight	**2**	**1**	**0**
Frequency	**3**	**4**	**1**
Weights × Frequency	**6**	**4**	**0**
Weighted average	**1.25**		
Percentage	**62.5%**		

objectives of the research in preparing Sirte University to obtain ISO certification.

Testing QMS in Sirte University according to ISO 9001:2008

There are five basic requirements which together constitute the requirements of international standard of ISO 9001:2000. These requirements by sequencing are: the Quality Management System (QMS); Management Responsibility; Resource Management; Product Realization; and Measurement, Analysis and Improvement. This research will test only the requirement of QMS used in Sirte University, in

order to evaluate this requirement and bringing it to achieve the required specification requirements of ISO 9001:2008

The requirement of QMS ranks first within the requirements of ISO 9001:2008, due to its importance in the application of the quality system in the University. A checklist related to QMS was prepared with the purpose of verifying the amount of conformance and difference with the specification of ISO. It includes 8 Questions which help to find out the answers with regard to the extent of the application of this requirement according to the required specification ISO 9001:2008.

Based on the checklist of the requirement of QMS, the University obtained a rate of (1.25) degrees out (2) degree of the scale, and this refers to the partial application of the items related to the requirement of QMS in the requirements of ISO 9001 version 2008, and obtained 62.5% of the total items.

The main reasons for the conformance and differences of the quality system in the University within the items of QMS requirement in the specification are attributed to a set of strength and weakness points that are described as follows:

1. The strength points of QMS requirement according to ISO 9001:2008
We can identify the most important strength of the application of requirement of a QMS in Sirte University quality system according to the ISO 9001:2008 to the following:

1. The presence of a good coding system for quality control records in the University.
2. The person responsible for the adoption of administrative records and documentation of quality control is identified.
3. Obtaining the prior consent of the beneficiary on the quality control and documentation.

2. The weakness points of QMS requirement according to ISO 9001:2008

The weaknesses of the application of the QMS in Sirte University's quality system according to the international standard ISO 9001:2008 are:
1. Not determining or specifying any special requirement of the requirements of ISO 9001:2008 to be applied in the University, with a view to their application in the University.
2. Failure to identify the activities that need to be fully and comprehensively documented regarding the activities aimed at quality assurance in the University and giving no detail about the necessary procedures to perform each activity.
3. The University lacks the Directory and a complete guide to quality that lead to the absence of clarity in the procedures necessary to achieve quality.

3. Addressing the weaknesses according to ISO 9001:2008

To address the weakness points contained the requirement of QMS according to ISO 9001:2008, it is required that the University should establish and document the QMS in accordance with the requirements of international standards of ISO 9001:2008, and must maintain this system and carry out

the process of continuous improvement permanently. In addition, in order for the University to succeed in the application of this requirement, it must also identify all the processes related to this system that contain these operations on all external sources to achieve the QMS, as well as determine the stages which overlap between all these processes.

Sirte University must also be sure to specify norms and standards necessary for the process of calibration and measurement, as well as to identify the most important methods written and required, in order to make sure that every operation of these processes has a tremendous impact on the QMS with the need to provide resources and information necessary to support operation and control of these processes. The University must also take the corrective actions necessary to achieve the planned results and continual improvement of these processes with the need to measure, monitor and analyze these processes effectively.

With respect to the documentation requirements, the University must provide documents according to ISO 9001:2008, especially the QMS documents which include a set of fundamentals that are supportive to these documents, such as determining the quality policy and objectives, and identify documented procedures required for this specification, providing a comprehensive guide to quality, as well as the provision of University documents in order to ensure the effectiveness of the process of planning, operation and control of the operations of the University in general.

The process of monitoring the documentation is a very important process in accordance with ISO 9001:2008, where the University must monitor and document the QMS continuously, and must for the University also to edit or create a documented procedure for the adoption of the documents that match the pre-release, review and update the documents when necessary for the re-accreditation, and make sure to identify changes and cases of communicable versions of documents. It also must pay attention to monitor the records of quality, where it must create these recordings and maintain them as they are required for the QMS to provide evidence of conformity to requirements and effective operation of the QMS. These recordings should be legal, legible and specific, and can be referenced when necessary.

In order to implement the requirement of QMS effectively in accordance with the specification ISO 9001:2008, the University must create a Directory or guide of quality, and maintain this guide so that it contains a number of foundations that are the essence of the process of follow-up and application of the system, such as determining the QMS, including all the details of the relationship, and the establishment of fixed and documented procedures for QMS that can be referenced when needed, as well as working on description of the work and determining the interrelationships between all the operations of the QMS.

III. CONCLUSION

This study has evaluated the requirement of QMS in Sirte University according to the requirements of international standards (ISO 9001:2008). It has been found that Sirte University is applying this requirement partially, where it obtained a rate of (1.25) out of (2) degree (the overall scale), and that the University is applying what is correspondent to (62%) of the total items to be applied in accordance with the international Standards of ISO 0991:2008   .

The most important weakness points that did not allow the University to reach the total application of this requirement are the failure of the University to select and identify the specific requirement of the requirements of ISO 9001:2008 in general in order to be applied in the University. In other words, Sirte University did not adopt this standard to be applied now. Another important element which can be considered as weakness is that the University lacks the absence of a complete Directory or guide to quality.

On the other hand, the application of QMS requirement can not be considered as a drawback because the University applies a series of elements that are considered to be strength points according to the specification of international standards ISO 9001:2008. The University has a good coding system for the records of quality control. This is considered as a necessary key factor and necessary for the application of this specification. Furthermore, as the University seriously seeks to get prior approval from beneficiaries and quality control documents, this also enhances the strength of the University in the application of this requirement in order to achieve the total application for the QMS requirement.

REFERENCES

[1] Ab Wahid, R. (2012) "Beyond certification: a proposed framework for ISO 9000 maintenance in service", *The TQM Journal* , Vol. 24 No. 6, pp. 556-568.
http://dx.doi.org/10.1108/17542731211270115

[2] Beattie, K.R. and Sohal, A.S. (1999), "Implementing ISO 9000: a study of its benefits among Australian organizations", *Total Quality Management Journal*, Vol. 10, pp. 95-106.
http://dx.doi.org/10.1080/0954412998090

[3] Bhat, 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. 261-72.
http://dx.doi.org/10.1108/17542730910953031

[4] Blessner, P., Mazzuchi, T. A., Sarkani, S. (2013) "ISO 9000 impact on product quality in a defense procurement environment", *The TQM Journal*, Vol. 25 No. 3, pp. 295-308.
http://dx.doi.org/10.1108/17542731311307465

[5] Brown, A. (2013) "Quality: where have we come from and what can we expect? " *The TQM Journal*, Vol. 25 No. 6, pp. 585-596.
http://dx.doi.org/10.1108/TQM-04-2013-0045

[6] Burke, J. C. (2005) *Achieving accountability in higher education: Balancing public, academic, and market demands*, CA: Jossey-Bass, San Francisco.

[7] Choppin, J. (1995) "Total quality management – what isn't it?", *Managing Service Quality*, Vol. 5 No 1, pp. 47–49
http://dx.doi.org/10.1108/09604529510081802

[8] Dale, B. G. (1999). TQM: An overview. In B. G. Dale (Eds.), Managing quality (3rd ed., pp. 3-33), Blackwell-Business, Oxford, UK.

[9] Dale, B.G. (2003), "TQM: an overview", in Dale, B.G. (Ed.), Managing Quality, 4th ed., Blackwell Publishing, Oxford, pp. 3-33.

[10] Dale, B.G., van der Wiele, A. and Williams, A.R.T. (2001) "Quality - why do organisations still continue to get it wrong? ", *Managing Service Quality*, Vol. 11 No 4,. pp. 241-248
http://dx.doi.org/10.1108/09604520110397959

[11] Evans, J.R. (2005) *Total Quality: Management, Organization and Strategy*, 4th ed., Thomson South-Western, Mason, OH.

[12] Fotopoulos, C.V., Psomas, E.L. and Vouzas, F.K. (2010), "ISO 9001: 2000 implementation in the Greek food sector", The TQM Journal, Vol. 22, pp. 129-42.
http://dx.doi.org/10.1108/17542731011024255

[13] Garvin, D.A. (1987) "Competing on the eight dimensions of quality", *Harvard Business Review*, Vol. 65 No. 6, pp. 101-9.

[14] Goetsch, D. and Davis, S. (2002) *Understanding and Implementing ISO 9000:2000, Pearson Education*, Upper Saddle River, NJ.

[15] Hernandez, H. (2010), "Quality audit as a driver for compliance to ISO 9001:2008 standards", *The TQM Journal*, Vol. 22 No. 4, pp. 454-66.
http://dx.doi.org/10.1108/17542731011053361

[16] International Organisation for Standardization (ISO) (2013), ISO 9001:2008 (2013) Quality Management Systems – Requirements, International Organization for Standardization, Geneva.

[17] James, P. (1996) *Total Quality Management: An Introductory Text*, Prentice Hall, Englewood Cliffs, NJ.

[18] Jones, R., Arndt, G. and Kustin, R. (1997) "ISO 9000 among Australian companies: impact of time and reasons for seeking certification on perceptions of benefits received", *International Journal of Quality & Reliability Management*, Vol. 14, pp. 650-60.
http://dx.doi.org/10.1108/02656719710173258

[19] Kettunen, J. (2012) "External and internal quality audits in higher education", *The TQM Journal*, Vol. 24 No. 6, pp. 518-528
http://dx.doi.org/10.1108/17542731211270089

[20] Khan, J. H. (2003) "Impact of total quality management on productivity", *The TQM Magazine,* Vol. 15 No 6, pp. 374-380.
http://dx.doi.org/10.1108/09544780310502705

[21] Kim, D.-Y., Kumar, V. and Kumar, U. (2011) *A Performance Realization Framework for Implementing ISO 9000*, College of Business, Ottawa, ON, Carleton University.

[22] Kistan, C. (1999) "Quality assurance in South Africa", *Quality Assurance in Education*, Vol. 7 No 3, pp. 125-133
http://dx.doi.org/10.1108/09684889910281557

[23] Lagrosen, Y. and Lagrosen, S. (2005), "The effects of quality management – a survey of Swedish quality professionals", *International Journal of Operations and Production Management*, Vol. 25 No. 10, pp. 940-952.
http://dx.doi.org/10.1108/01443570510619464

[24] Lillrank, p. (2003) "The quality of information", *International Journal of Quality & Reliability Management*, Vol. 20 No. 6, pp. 691-703.
http://dx.doi.org/10.1108/02656710310482131

[25] Loder, C.P.J. (Ed.) (1990) *Quality Assurance and Accountability in Higher Education*, Kogan Page, London.

[26] Martins, R. A, and Toledo, J. C. (2000) "Total Quality Management Programs: a framework proposal", *Work Study*, Vol. 49 No 4, pp. 145-151.
http://dx.doi.org/10.1108/00438020010330466

[27] Mehra, S., Hoffman, J.M. and Sirias, D. (2001), "TQM as a management strategy for the next millennia", *International Journal of Operations and Production Management*, Vol. 21 Nos 5/6, pp. 855-76.
http://dx.doi.org/10.1108/01443570110390534

[28] Moreland, N. and Clark, M. (1998), "Quality and ISO 9000 in educational organizations", *Total Quality Management Journal*, Vol. 9 Nos 2/3, pp. 311-20.

[29] Morgan, C., & Murgatroyd, S. (1997) *Total quality management in the public sector*, Open University Press Buckingham, UK.

[30] Mosadeghrad, A. M. (2014) "Why TQM programmes fail? A pathology approach", *The TQM Journal*, Vol. 26 No. 2, pp. 160-187
http://dx.doi.org/10.1108/TQM-12-2010-0041

[31] Oakland, J. (1989) *Total quality management*, Heinemann, Oxford, UK.

[32]Ovretveit, J., total Quality Management in European Healthcare, International Journal of health Care Quality assurance, 13/2. 2000. 74-79.
http://dx.doi.org/10.1108/09526860010319523

[33] Pun, K.F. (2001), "Cultural influences on total quality management adopti on in Chinese enterprises: an empirical study", *Total Quality Management Journal*, Vol. 12 No. 3, pp. 323-42.
http://dx.doi.org/10.1080/09544120120034483

[34] Quazi, H.A. and Padibjo, S.R. (1998) "A journey toward total quality management through ISO 9000 certification – a study on small and medium-sized enterprises in Singapore", *International Journal of Quality & Reliability Management*, Vol. 15 No. 5, pp. 489-508.

http://dx.doi.org/10.1108/02656719810196225

[35] Reed, R., Lemak, J.D. and Mero, N.P. (2000), "Total quality management and sustainable competitive advantage", *Journal of Quality Management*, Vol. 5, pp. 5-26.
http://dx.doi.org/10.1016/S1084-8568(00)00010-9

[35] Sampaio, P., Saraiva, P. and Rodrigues, A.G. (2009), "ISO 9001 certification research: questions, answers and approaches", *International Journal of Quality & Reliability Management*, Vol. 26, pp. 38-58.
http://dx.doi.org/10.1108/02656710910924161

[36] Singh, P. and Sareen, K. (2006), "Effectiveness of ISO 9000 standards in Indian educational institutions: a survey", *International Journal of Services Technology and Management*, Vol. 7 No. 4, pp. 403-15.
http://dx.doi.org/10.1504/IJSTM.2006.011005

[37] Sumarjan, N., Arendt, S., and Shelley, M. (2013) "Incongruent quality management perceptions between Malaysian hotel managers and employees", *The TQM Journal* Vol. 25 No. 2, pp. 124-140
http://dx.doi.org/10.1108/17542731311299573

[38] Tague, N.R. (2004) The Quality Toolbox, ASQ Quality Press, Milwaukee, WI.

[39] Talha, M. (2004) "Total Quality management (TQM) an overview", *The Bottom Line: Management Library Finances*, Vol. 17 No 1, pp. 15-19.
http://dx.doi.org/10.1108/08880450410519656

[40] Tsiotras, G. and Gotzamani, K. (1996), "ISO 9000 as an entry key to TQM: the case of Greek industry", *International Journal of Quality & Reliability Management*, Vol. 13, pp. 64-76.
http://dx.doi.org/10.1108/02656719610114407

[41] Yahya, S. and Goh, W.K. (2001), "The implementation of an ISO 9000 quality system", *International Journal of Quality & Reliability Management*, Vol. 18, pp. 941-66.
http://dx.doi.org/10.1108/02656710110407127

[42] Yapa, S., Total quality management in Sri Lankan service organizations, The TQM Journal Vol. 24 No. 6, 2012, pp. 505-517
http://dx.doi.org/10.1108/17542731211270070

[43] Yusof, S.M. and Aspinwall, E. (2000), "Total quality management implementation frameworks: comparison and review", *Total Quality Management Journal*, Vol. 11 No. 3, pp. 281-94.
http://dx.doi.org/10.1080/0954412006801

[44] Zaramdini, W. (2007) "An empirical study of the motives and benefits of ISO 9000 certification: the UAE experience", *International Journal of Quality & Reliability Management*, Vol. 24, pp. 472-91.
http://dx.doi.org/10.1108/02656710710748358