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In Search of End Product Quality in Developing Countries (Implementation of Total Quality Management in Pt Semen Tonasa, Indonesia)

Muhammad Yunus Amar¹ and Arnis Budi Susanto²

¹ Associate of Professor of Management at Department of Management, Faculty of Economic and Business, Hasanuddin University
Email: myunmar@unhas.ac.id

² Lecturer in Management Department, Faculty of Economic, University of Jember, E-mail: arnis.fe@unej.ac.id

Abstract: This study aims to analyze the effect of the implementation of Total Quality Management (TQM). Literature on quality management practices in developing countries reveal developing economies often have unique characteristics such as lack of democracy, instability, corruption, unskilled labor force and others. While not all developing countries suffer from these ills more are less this is valid. In developing our understanding, we presents results from studies focused on Indonesia by using the entire population of employees at PT. Semen Tonasa in Pangkep Regency, South Sulawesi Provinces. Sampling using random sampling techniques through the collection of data with the questionnaire enclosed. Data were analyzed through path analysis. The results showed that the implementation of Total Quality Management which consists of customer focus, continuous improvement, management commitment, training, and employee empowerment have a significant effects imultaneously and partially on the quality of the final product of PT. Semen Tonasa. Recommended for further research on the influence of TQM practices on the end product sales activities.

Keyword: development country, total quality management, end-product quality

1. RESEARCH BACKGROUND

Total Quality Management (TQM) is an approach for improving quality that involves all areas of the organization, including sales, engineering, manufacturing, and purchasing, with a focus on employee participation and customer satisfaction. TQM can involve a wide variety of quality control and improvement tools. TQM pioneers, such as Crosby (1979), Deming (1986, 2000), and Juran (1986) emphasized a combination of managerial principles and statistical tools. This term has been largely supplanted by lean sigma and lean programs and few practitioners or academics use this term today.

TQM is a new paradigm of doing business that seeks to maximize the competitiveness of the organization through a focus on consumer satisfaction, involvement of all employees, and continuous improvement of the quality of products, services, people, process and organizational environment (Agus, 2000). TQM is a major factor in the business revolution that has proven itself to be one of the 20th century's most powerful creators of sales and revenue growth, genuinely good new jobs, and soundly based and sustainable business expansion (Douglas and Judge, 2001; Prager, 2003).

The implementation of TQM empirically recognized also very significant in creating enterprise excellence all over the world. Several previous studies have shown that the implementation of TQM is effectively a positive effect on employee motivation (Ahire and O'Shaughnessy, 1998); increase employee satisfaction and reduce the interest to change job (Dayton, N.A., 2001); reducing costs and improving performance business (Anderson *et al*, 2003); managerial performance (Anderson *et al*, 2003); and improving the quality of human resources (Nair, 2006; Prager, 2003).

The study of TQM implementation factors related to organizational culture in Indonesia today is still limited, therefore, be interesting to know whether the implementation of TQM has a significant influence on the quality of the product as part of organizational culture, if it is implemented in Indonesia, considering that there are differences in the characteristics of organizational culture in Indonesia and in other countries.

Organizations in Indonesia are facing stiff competition from other exporters from developing countries like Pakistan, China, Vietnam and India. Amar & Zain (2002) stated that the problem is the quality of Indonesian products, which are reputed to be inferior when compared with products from other countries. Quality issues were first recognized in 1983, the Indonesian government initiated efforts toward improving its national productivity. With this, quality concepts were introduced in a number of Indonesian companies with large foreign equities, notably Japanese-Indonesian joint ventures, and companies wholly owned by Japanese concerns.

Even though organizations are successful to some extent in implementing quality management concepts, there exist profound problems according to various studies conducted when viewed in overall sense. Barriers for the successful implementation of TQM in Indonesian manufacturing organizations are human resource management, attitude towards quality, organizational culture, interdepartmental relations, materials, machines, equipment, information, and method (Amar & Zain, 2002).

With regard to PT. Semen Tonasa. TQM have been implemented since the beginning of the production process, namely the determination of suppliers, strict selection of raw materials, and process monitoring at every stage of production till the end of the production process. The company prioritizes customer satisfaction by producing high quality cement at an affordable price. Quality control in PT. Semen Tonasa been running pretty well. This is demonstrated by the increasing production and the decline of unstandardized product.

In Table 1 (Appendix 1) shows that the decrease in the number of unstandardized product indicates an increase in the amount of end-product that have better quality. And as there is a decline the number of unstandardized end-product, an issue emerge whether this is caused by a TQM practices or any other factor. Based on research background, the formulation of the problem is as follows:

To what extent does customer focus, continuous improvement, management commitment, training, and employee empowerment influence the implementation of TQM simultaneously and partially on the quality of the end-product at PT. Semen Tonasa Pangkep?

2. THEORETICAL FRAMEWORK

2.1. The concept of Quality and TQM Implementation

Previous research on quality management practices in developing countries such as Indonesia (Amar & Zain, 2002), Egypt (Al-Zamany *et al*, 2002b, Magd and Curry, 2003; Salaheldin, 2003), and Yemen (Al-Zamany *et al*, 2002a) have provided information regarding prevailing situation in organizations of developing countries in their journey towards excellence. Developing economies often have unique characteristics, notably lack of democracy, instability, corruption, unskilled labour force and others. While not all developing countries suffer from these ills more are less this is valid.

TQM is a design that can improve quality and reduce unnecessary costs, integrating all functions of the organization with the involvement of managers and employees, focused on customer needs and achieving organizational goals (Douglas and Judge, 2001; Rahman and Tannock, 2005; Sun, 2000). This suggests that with the implementation of TQM, the company can reduce the its unstandards products and improve product quality.

Agus (2000) explain the importance of focusing on the consumer to be able to improve product quality. Companies that pay attention and fulfill what is desired by consumers will be able to compete and always know what the weaknesses of the product. Goetsch and Davis (in Tjiptono and Diana, 2001 : 350) describes the implementation of TQM is more detailed and systematic in three phases, namely the preparation phase, the planning phase and implementation phase. Each phase consists of several steps with time according to the needs of the organization.

First stage in the implementation of TQM is to assess the state of existing organizations. If the organization has proven effective sensitivity to the environment and able to succeed the previous changes, it will be easy to implement TQM. Conversely, if the fact that there is not support the necessary initial conditions, delayed implementation of TQM and organization should be corrected before beginning TQM (Heizer & Render, 2004).

Based on the principles and the right preconditions, the next stage of implementation is the use of leadership (visionary leadership) to achieve the vision of the future of the organization and how to include the appropriate TQM program, designing a comprehensive process of change in the implementation of TQM and its relation to the new system.

Consistent with a systems perspective, budget and resource allocation system needs to be directed in accordance with the culture of TQM. TQM is essentially a human resource management systems, the work may be redesigned as the implementation of an independent working group, performance appraisal and compensation system may be converted into rewards based on group performance, and training for managers, supervisors, and employees are needed. Finally, attention is needed on the full range of activities using feedback from consumers.

2.2. The Role of Management in TQM implementation

There are some problems typical to developing countries which management should solve while implementing TQM, as stated by Barnett (1991): ‘efforts towards improved efficiency often leads to loss of jobs and workers are unlikely to support quality initiatives when, in the long run, they will be victimized

by their efforts'. This is in accordance to Lakhe & Mohanty (1994) findings that most organizations in the developing world are having the following problems (1) Lack of employee involvement and participation in quality improvement efforts, (2) Lack of management commitment and motivation, (3) Perception that quality is an optional extra and not a necessity for development, (4) Traditional belief that "quality costs money", (5) Lack of communication and trust between suppliers, dealers, management, and trade unions, (6) Unorganised and indifferent customers, lack of political support, (7) Lack of established quality standards and inadequate test facilities, (8) Obsolete technologies, (9) Low level of education, (10) Negligible capital investment in technologies, research and development and employees' education, (11) Disrespect to the people as far as quality of life is concerned, (12) Undesirable social tensions such as terrorism, violence, and religious fundamentalism. Lakhe and Moharty (1994) findings also have been reinforced by Gosen *et al* (2005) research, which categorised these factors as internal (organisational) and external (international) variables to understand how they affecting quality in developing countries.

TQM is a cultural transformation that is driven by a management role. This is because TQM is a new managerial paradigm. Managerial paradigm itself implies a way of thinking and acting in running a business. The management had to change himself first, and both aspects of values, beliefs, assumptions, and the way they do business. The role of the responsibility, behavior, performance or achievements to be expected from someone who has a special position (Taylor, W.A. and Wright, G.H. (2003). Thus the role of top management is the responsibility, behavior, or work performance is expected. In addition to the expected conduct of leadership, he was able to motivate and direct the employees to achieve organizational goals. Top management is also responsible in overcoming any resistance to change in the direction of new management.

TQM implementation can change the culture of an organization's orientation toward the quality of the product. (Al-Zamany et.al, 2002; Kersten *et al*, 2002;). Therefore, product quality is the most important things to be considered as an indicator of successful implementation of TQM. Based on the study of theoretical study and the results of relevant previous research, it is known that the implementation of TQM affect the quality of the end-product.

Framework in this research is then to study of the influence of Implementation of TQM, which consists of customer focus, continuous improvement, management commitment, training and empowering employees either simultaneously or partially on the quality of the final product. With regard to focus on consumers, we conceptualized the concept as an attitude which the company or organization needs to fulfill in order to exceed consumer expectations and develop communication with consumers to improve the quality of the end-product. This study will look at how direct and indirect effects on consumer focus influence end-product quality.

Continuous improvement itself is an attitude or a policy pursued by the company or organization by setting continuous improvement targets, and investigating the potential and proactive continuous improvement of the organization in order to improve the quality of the final product. This study will look at how direct and indirect influence of the continuous improvement on the quality of the final product.

Furthermore, management commitment is the ability of management to implement and guide the organization's long term vision, create and maintain an internal environment for employees involved in achieving the goals of the organization, participate, and recognize and appreciate the achievements of

employees in order to improve the quality of end product quality. This study will measure the influence of direct and indirect management commitment to end-product quality.

Training is the fifth factors that we regarded to influence the end-product quality. Training in this research is defined as the ability of organizations to recognize, perform quality-based training and development that leads to multiskill and is one part of the implementation of TQM to improve the quality of end-product. This study will measure the influence of direct and indirect training on end product quality.

Employee empowerment is a process to involve employees at all organizational levels in problem solving and decision making, as well as the existence of employee recognition which also become factors in the implementation of TQM to improve the quality of end product. This study will measure the influence of direct and indirect of employee empowerment on the quality of end-product. See Figure 1 as The Research Model (in Appendix 2).

3. RESEARCH METHODS AND SAMPLE

This research nature is explanatory with a quantitative approach. Research is conducted at PT. Semen Tonasa at the Pangkep regency that has implemented TQM. The study population include all employees of PT. Semen Tonasa, amounting to 2.311 people. However, after data collection phase through a closed questionnaire, we only acquired 175 people by using Random Sampling technique. Data were analyzed using path analysis and the path equation is

$Y = PYX1 + PYX 2 + PYX3 + PYX 4 + PYX 5 + e$, in which:

Y = The quality of the end-product

P = intercept

X1 = A focus on consumer

X2 = Continuous improvement

X3 = management commitment

X4 = Training

X5 = Empowerment of employees

ε = error (error)

4. RESULTS AND DISCUSSION

The path-analysis model for this study can be seen in Figure 2 below (in Appendix 3).

The results of calculations with path analysis shows the magnitude of effect (direct and indirect) on the implementation of TQM which consists of customer focus, management commitment, continuous improvement, training, and empowerment of employees on the quality of the end-product that is equal to 82.5%. It means that 82.5% of the end-product quality improvement was attributed to the factors within this model and the remaining 17.5% are influenced by other variables.

Effect of Focus on Customer to End-Product Quality

Focus on consumer factors significantly influence on the quality of the end-product. It can be seen from the results of path coefficient value of 0.148 with a significance value of 0.000. These results prove that

customer focus is one of the Implementation of TQM which have significant influence on the end-product quality improvement. These findings is in line with previous research (Agus, 2000), who stated that quality management is done through the use of three management process, namely: quality planning, product development activities, and processes necessary to meet customer requirements.

Effect of Continuous Improvement on End-Product Quality

Continuous improvement factors significantly influence the quality of the end-product. It can be seen from the path coefficient of 0.119 with a significance value of 0.002.

The research was in line with what have been suggested by the quality expert, W. Edward Deming. Deming developed the five concepts of effective TQM program, and they are continuous improvement, employee empowerment, performance comparison (benchmarking), the provision requirement on time, and knowledge of TQM tools (Anderson *et al*, 1994; Samson and Terziovski, 1999)

Effect of Management Commitment to End-Product Quality

Management commitment variables have an influence on the quality of the final product It can be seen from the results of path coefficient value of 0.578 with a significance value of 0.000. The result was in line with Taylor and Wright (2003), which found that the key principles of TQM is management commitment, employee empowerment, decision making based on facts, continuous improvement, and customer focus.

Effect of Training on End-Product Quality

Training variables have a significant influence on the quality of the final product . It can be seen from the results of path coefficient value of 0.127 with a significance value of 0.002.

The research was in line with Wilkinson *et al* (2002), who found that TQM has essentially two sides of the quality. Hard side of quality improvement efforts include all production processes ranging from product design to use of control tools (QFD, JIT, and SPC), and other organizational change (organizational structure, organizational culture). While the soft side of quality focused on efforts to create employee awareness on the importance of customer satisfaction and foster employee commitment to constantly improving quality. These efforts can be done through education and training, an approach that supports the wage system, and structural work. These efforts include human resource management activities.

5. CONCLUSIONS, RECOMMENDATIONS, AND FURTHER EXPLORATIONS

Based on the results of research and discussion, it can be concluded as follows that variable TQM implementation that consists of customer focus, continuous improvement, management commitment, training, and employee empowerment simultaneously and partially have significant effect on end-product quality of PT. Semen Tonasa. The magnitude of effect of implementation of TQM is 82.5%. This shows that the decrease in unstandardized products is largely due to the implementation of TQM. Furthermore, we also conclude that focus to consumers through variable continuous improvement, management commitment, training, and employee empowerment have a significant effect indirectly on the end-product quality.

Several recommendations could also be suggested in line with previous conclusion and they are: (1) In order to improve the end-product quality, the management at PT Semen Tonasa must try to implement TQM by giving an emphasis on customer focus, continuous improvement, management commitment, training, and employee empowerment, and (2) PT Semen Tonasa must try to increase their focus on continuous improvement by increasing the number of training an employee had in the field of quality.

Overall the result of this paper negates what have been found in previous TQM research that indicates organizations in developing countries have not been taking professional quality management seriously (Amar & Zain, 2002; Al-Zamany *et al*, 2002a; Al-Zamany *et al*, 2002b; Magd and Curry, 2003; Salaheldin, 2003). While it is true that issues relating to market forces, governmental responses to business environment, technology, and management, hamper quality performance in these countries. Difficulties in these areas can be removed only with professional planning, and implementation, both at the company and at the country levels. TQM and ISO programs which focuses on developing organizations for providing and aiding to satisfy mainly customers and stake holders are essential instruments for which organizations have to look for achieving success more keenly. ISO 9000 is a good framework for quality assurance, only if it is implemented effectively and efficiently which was not the case present in developing countries. The role of government is very important in disseminating quality management practices. Government should take steps supported by other groups to support development and utilize new organizational techniques.

Until recently, only advantage companies in developing countries having are “*ability to provide goods of low quality and low price,*” this was possible due to the availability of low skilled, low-paid and almost an abundance of labor. However, according to Feigenbaum (1990), in this increasingly competitive world, quality is no longer an optional extra it is an essential strategy: without quality, an organization cannot survive. The making of quality products and services demands total commitment from the entire organization; it requires TQM. TQM therefore is a solution for improving the quality of products in developing economies so that they are accepted in a global market (Lakhe & Mohanty, 1994). Therefore, situation will change for positive if thinking changes from quantity to quality, adopt modern management concepts such as TQM, use tools and techniques, and get ISO certified.

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Appendix 1

Table 1
Number of Production and the Under Standars Product (PT Semen Tonasa, 2015)

Year	Production (Ton)	Unstandardized Product (Ton)
2012	5.838.342	987.85
2013	6.127.749	725.15
2014	6.172.828	395.83

Appendix 2

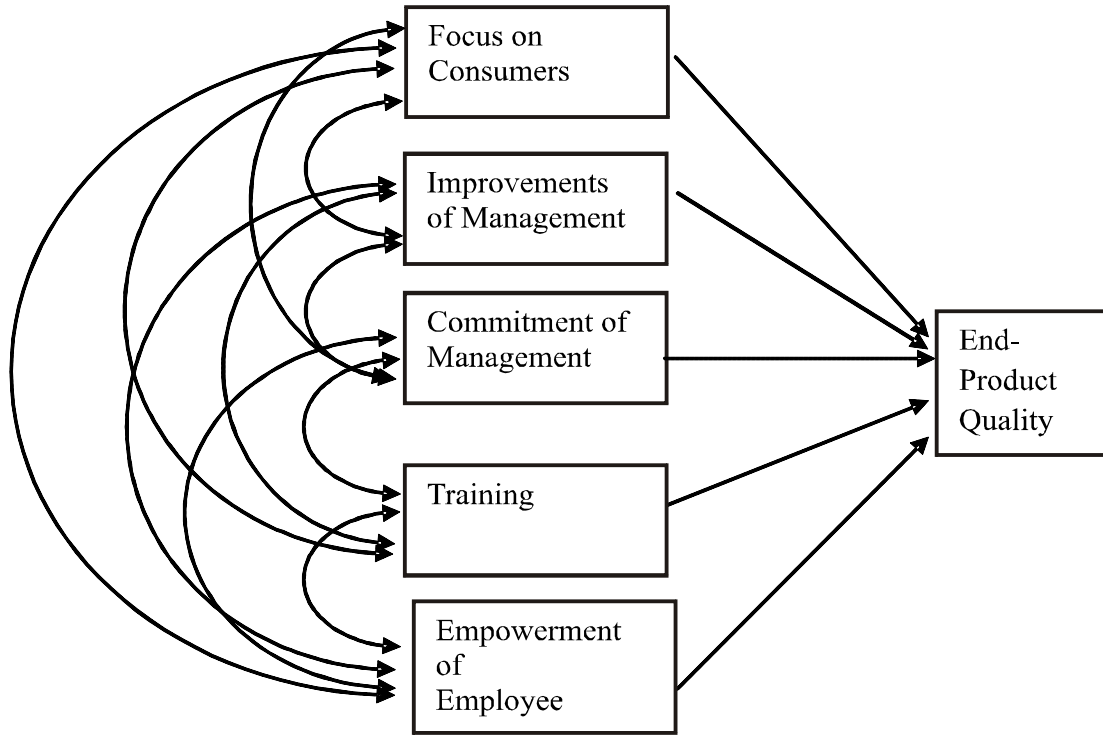


Figure 1: The Research Model

Appendix 3

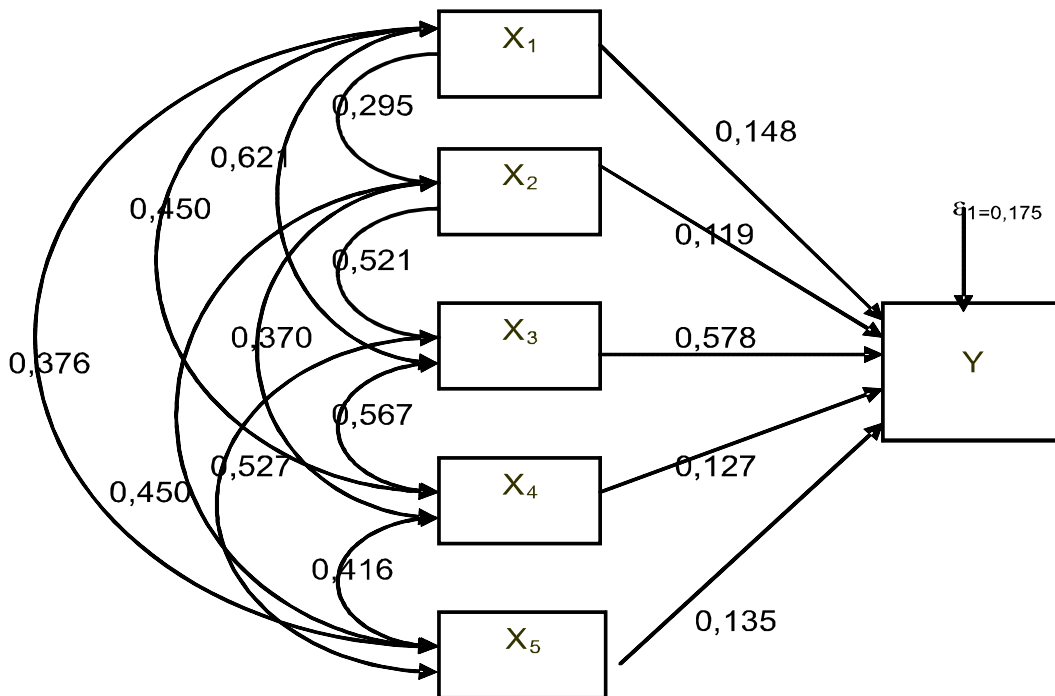


Figure 2: Diagram of the path analysis