Analysis of Total Quality Management (TQM) of vegetable and fruit products at PanenMart Makassar company

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Abstract. The purpose of this study is to analyze the application of Total Quality Management (TQM) of vegetable and fruit products in PanenMart Makassar, based on the principles of total quality management (TQM) consisting of customer satisfaction, leadership, increased sustainability, respect for all people and fact based management. Informants were selected purposively, with a total of 11 respondents consisting of: Chief Executive Officer (CEO), Chief Operation Officer (COO) and 9 employees involved in the procurement, sorting, grading, packaging and distribution processes. Data processing using a descriptive analysis method with a Likert Scale. The results of this study indicate that the application of Total Quality Management (TQM) applied by PanenMart Makassar company prioritizes customer satisfaction over other variables.

1. Introduction

The era of modernization is currently rolling in various sectors in human life, not least in the agricultural sector which causes competition between companies to become increasingly fierce and competitive that occurs not only at the local, regional and national levels, but also at the international level. Based on that, a company is demanded to be able to continue to grow so that it can face existing competition. A company that is able to survive is a company that has high competitiveness, not only that can fulfill four aspects of marketing, namely: product, price, place, and promotion, but also aspects of quality management.

The attention of the government towards horticultural commodities is currently increasing. This is because horticultural commodities are a promising source of economic growth, it can be seen that although the volume of horticultural commodities is relatively small, it has relatively high economic value and has a strategic role in meeting the basic needs of the community.

The impact of modernization in the agricultural sector now is that there are many companies engaged in the distribution of vegetables and fruits, one of which is the Makassar Panen Mart Company. The Panen Mart Makassar company is a social enterprise that develops technology solutions and information systems and helps companies display superior horticultural products that come directly from farmers, namely vegetable and fruit products. Through a mobile-based application, PanenMart Makassar Company seeks to provide online and offline food product trading solutions to achieve food price stability by shortening the distribution chain from farmers to end consumers to increase their access to markets.
The importance of the function of vegetables and fruits to meet the needs of fiber, vitamins, and minerals for the body, is inversely proportional when viewed from the development of Indonesian population consumption of vegetables and fruits that can be seen in Table 1.

| Year | Vegetables (Kg / Kap / Year) | Fruits (Kg / Kap / Year) |
|------|-----------------------------|--------------------------|
| 2013 | 56.9                        | 30.2                     |
| 2014 | 59.6                        | 33.9                     |
| 2015 | 60.0                        | 37.7                     |
| 2016 | 60.7                        | 31.5                     |
| 2017 | 51.9                        | 30.1                     |

Source: Food Security Agency, the Ministry of Agriculture in 2018.

The average consumption of vegetables and fruits by the Indonesian population in 2015 and 2016 increased due to the large domestic market needs. This is due to the community's tendency to reduce the consumption of high-fat foods, especially those derived from animal ingredients. The high demand for vegetables is also influenced by an increasing population, increasing nutritional awareness in line with increased education and community welfare. However, there was a decrease in the level of consumption of vegetables and fruits in 2017, this could be due to a decrease in the level of quality and quantity of vegetables and fruits, resulting in a decrease in the level of public consumption of vegetables and fruits.

The development of Indonesian population consumption of vegetables and fruits in Table 1 which declined in 2017, is in line with the number of transactions at PanenMart Makassar based on B2C (Business to Consumer) marketing channels, namely electronic product sales involving sales companies and end consumers.

![Figure 1. Transaction Data for the Last 6 Months at Makassar PanenMart Company](image-url)

The graph shows that the growth in transaction rates during the past six months peaked in November 2018 which was conducted online. But there was a decrease in the level of transactions from January to February 2019 from the sales target. The reduced level of transactions can be influenced by various factors, one of which is the application of quality management.

The Makassar PanenMart company is currently faced with quite fierce competition. The quality that must be fulfilled by the company is that it can be seen from the viewpoint of the consumer because after all the consumer is the final judge of a product. One way to survive in a competitive market is to produce high-quality products. To be able to produce quality products, the company
cannot rely solely on the production department. High-quality products are the responsibility of all parties involved in the company.

Total Quality Management (TQM) is an approach to increase effectiveness. The principle of TQM is a way to organize and mobilize an entire organization, every department, every activity, and every individual at every level to achieve quality. Weaknesses that are owned by companies engaged in agribusiness in implementing TQM cause the company is less responsive in identifying problems that arise related to quality management so that corrective actions are often not in accordance with the problems faced and priorities to be resolved.

2. Methodology
The results of this study are described as descriptively or qualitatively. Writing in the description or through descriptions that describe and explain the research subject. The approach in this study follows the steps of qualitative research work. According to Moleong that qualitative methods produce descriptive data, both in the form of words written and oral expressions of people and observed behavior.

Informants were chosen purposively, with a total of 11 respondents consisting of: Chief Executive Officer (CEO), Chief Operation Officer (COO) and 9 employees involved in the procurement, sorting, grading, packaging and distribution processes. The number of variables to be analyzed regarding the application of integrated quality management of vegetable and fruit products in the PanenMart Makassar company, based on the principles of integrated quality management (TQM) consisting of customer satisfaction variables (X1), leadership (X2), sustainability improvement (X3), respect for everyone (X4) and fact-based management (X5). Variable principles of Total Quality Management (TQM) or integrated Quality Management (TQM) in this study adopted a theory developed by Hensler and Brunell [1].

Measurement of the application of integrated quality management to the indicator variables in this study uses a Likert Scale with a value of 1 - 5. According to Sugiyono [2]. Likert scale is used to measure a person’s attitudes, responses, and opinions about social phenomena.

3. Results and Discussion
In this section, the results of the study are completely explained which consists of the description of the respondent's characteristics and the characteristics of the variables. Then based on these results a discussion was carried out on how to apply the company's quality management to vegetable and fruit products in the PanenMart Makassar company based on the variables defined in the study. The results of descriptive analyses that describe the characteristics of respondents based on gender, age, level of education, and years of service are completely presented in Table 2.

| No. | Commentary | Frequency (Person) | Percentage (%) |
|-----|------------|--------------------|----------------|
| I.  | Gender     |                    |                |
|     | - Man      | 7                  | 64             |
|     | - Woman    | 4                  | 36             |
|     | Total      | 11                 | 100            |
| II. | Age (years)|                    |                |
|     | - under 20 | 1                  | 9              |
|     | - 20-30    | 8                  | 73             |
|     | - 31-40    | 2                  | 18             |
|     | - 41-50    | -                  | -              |
|     | - above 50 | -                  | -              |
III. Level of education
- SMA / equal: 3 (27%)
- Diploma: -
- Bachelor degree: 7 (64%)
- Masters (S2): 1 (9%)

Total: 11 (100%)

IV. Work Period (years)
- below 1: 2 (18%)
- 1-2: 2 (18%)
- 2-3: 7 (64%)

Total: 11 (100%)

The results of the descriptive analysis in Table 2 show that the respondents of this study were predominantly male, as many as 7 people (64%) and the rest were women by 4 people (36%). In terms of age, respondents in this study were predominantly in the productive age category, namely 20-30 years (73%) and 31-40 years (18%), and the rest were under 20 years of age (9%).

The level of education of the dominant respondents was at the undergraduate level (S1), which was 7 people (64%), high school/equivalent as many as 3 people (27%) and the remaining Masters were 1 person (9%). According to tenure, the dominant respondent has a work period of 2 to 3 years, namely 7 people (64%), the rest are respondents who have tenure under 1 year (18%), and above 1 year (18%).

Based on the results of the analysis using a Likert Scale it can be seen that based on the average value (mean), the variable implementation of Total Quality Management (TQM) has been implemented well within the company, namely with a weighting score of ratings between 3, 4 and 5. Sequentially the average value average responses of respondents to the TQM variable are: customer satisfaction (54.4); leadership (53.8); respect for everyone (51.8); improvement of sustainability (51.6); and fact-based management (51.4). people (51.8) improvement of continuity (51.6); and management based on facts (51.4).

![Figure 2. Structural Model Effect of Variables on Total Quality Management (TQM)](image)

Note: *) The average value (average) of each variable is based on a Likert Scale calculation
Based on the results of calculations using a Likert Scale on the variable customer satisfaction ($X_1$) shows that the average value (mean) is 54.4 which is the highest score among the four other variables. Customer satisfaction in Total Quality Management (TQM), has a fairly broad concept of customer and quality. Quality no longer only means compliance with certain specifications, but the quality is determined by the customer. The customer itself includes internal and external customers. For PanenMart Makassar, the needs of customers are endeavored to be satisfied in all aspects, including price, security, and timeliness, which are always the top priority. Therefore all activities in the company's activities must be coordinated to satisfy customers.

The results of calculations using a Likert Scale on the leadership variable ($X_2$) show that the average value (mean) is 53.8 which is the second-highest score among the three other variables. A leader is required to be able to determine the unity of direction and goals of the organization. The leader must create and maintain or maintain an external environment where people can be fully involved in achieving the organization’s goals. Therefore the role of a leader for PanenMart Makassar is an important factor, where the leader in this company not only determines the goals of the organization but also plays a role in overseeing all company activities so that control over quality management can run optimally.

The results of calculations using a Likert Scale on the variable respect for each person ($X_4$) show that the average value (mean) is 51.8 which is the third-highest score among the two other variables. In the PenenMart Makassar company, each employee is seen as an individual who has unique talents and creativity. As such, employees are the most important organizational resource. Therefore, everyone in the company is treated well and given the opportunity to be involved and participate in decision-makers.

The results of calculations using a Likert Scale on the continuous improvement variable ($X_3$) show that the average value (mean) is 51.6 which is the fourth-highest score of the five principle variables in the application of integrated quality management. In order to develop and be able to face business competition, PanenMart Makassar companies always carry out a systematic process in carrying out continuous improvement. However, it is still necessary to apply the concept of the PDCAA cycle (plan, do, check, act, analyze), which consists of planning steps and taking corrective actions towards the results obtained and being responsive to environmental conditions in terms of business competition and consumer behavior in purchasing. Therefore, improvement should be the permanent goal of the organization.

The results of calculations using a Likert Scale on fact based management variables ($X_5$) show that the average value (mean) is 51.4 which is the lowest score of the five principle variables in the application of Total Quality Management (TQM). Advanced companies are fact-oriented companies, where each decision is always based on data, not just feelings. Management based on facts by PanenMart Makassar companies, in general, has gradually been well implemented by employees on the basis of their respective duties and responsibilities, but there needs to be supervision so that its application can run continuously so that company goals and decision-making can be achieved appropriately. By using factual data, management and teams in the organization can focus on improvement.

4. Conclusions and Suggestions
Based on the results of research and discussion that has been described, it can be concluded that in the application of integrated quality management of vegetable and fruit products in the PanenMart Makassar company consisting of variables: customer satisfaction ($X_1$), leadership ($X_2$), improvement of sustainability ($X_3$), respect for everyone ($X_4$), and fact-based management ($X_5$) are important factors in implementing TQM in companies. But the variable that is a very priority for PanenMart Makassar is customer satisfaction ($X_1$). Customers are the biggest asset for the company because, without customers, the company will not be able to grow. Customer satisfaction on the products produced will create customers who are loyal to the company, thus enabling the company to achieve success by achieving company goals.
Suggestions for improvement that can be described are that companies should make policies and programs effectively in increasing the supervision of Total Quality Management (TQM) where the application can be carried out according to priority scale based on capabilities owned by PanenMart Makassar company.

References
[1] Tjiptono F and Diana A 2003 Total Quality Management Edisi Ke-4. (Yogyakarta: Penerbit Andi)
[2] Munizu M Surachman Ubud S and Solimun 2012 The Effect of Total Quality Management Practices on Quality Culture, Competitiveness, and Corporate Performance (Studies at Manufacturing Industry in Makassar), Journal of Applied in Management, 10 510-519.