



Perceived Distribution Quality Awareness, Organizational Culture, TQM on Quality Output

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Abstract

Purpose: For the last few decades, TQM has become a hot topic in the inner-disciplinary field in the production management line. Still, unfortunately, the study of TQM and Quality Output management is partially only attached to the tangible side in the production management line. Whereas theoretically, the implications of TQM require incremental improvement in all management lines (e.g., HRM, Marketing, Operations, and Distribution Management). Therefore, starting from the main problem, this study aims to analyze the effect of total quality management, Organizational Culture, Perceived Distribution of Quality Awareness, and quality output through a more in-depth analysis. **Research design, data and methodology:** We conducted a survey of 170 respondents from managers, staff, and employees from 48 companies in Indonesia. We used a quantitative approach with the SEM method to answer this study's problem formulation and hypotheses. **Results:** The results of our research stated that based on the demonstration of statistical test results, all hypotheses were positive and significant, both direct and indirect relationship demonstrations. **Conclusions:** Universally, the findings in this study illustrate that the supporting factor for creating value-added in TQM and Quality output lies in the optimal and positive organizational culture and Perceived Distribution Quality Awareness factors in the organization.

Keywords : Perceived Distribution Quality Awareness, Organizational Culture, Total Quality Management, Quality Output

JEL Classification Code: M0, M20, L11, L7

1. Introduction

Globalization will provide benefits as well as challenges for manufacturing companies globally. One of the benefits of globalization in supporting the development of the manufacturing industry is to provide more significant market opportunities. However, globalization also presents quite a

challenge, especially in the competition to produce high-quality products. Globalization has become an unstoppable force in recent decades, with global trade continuing to expand through the ups and downs of the world economy. The future quality movement presents a different scenario. Market dynamics change continuously. The global market presents new, constantly evolving challenges, leading to a

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stressful competitive environment (Ireland & Webb, 2007; Moore & Manring, 2009).

Indonesia is not yet the most accessible country to set up a new company or play an active role in the business sector. This situation is reflected in the 2018 Doing Business index ranking report published by the World Bank. In the report, Indonesia is currently in position 72. One of the biggest problems in establishing a new company in Indonesia is obtaining all the necessary permits. The licensing process can take a long time and be expensive for new companies and companies currently operating. To develop business in Indonesia to be successful, it is essential to build a good network with industry and government. Entrepreneurs should be aware of the importance of these networks and seek to develop them. Indonesia is a promising country from a macroeconomic perspective. But Indonesia also has more risks than investing in developed countries. Political, social, and cultural dynamics cause this (Sorokin & Richard, 2017). Of course, the various problems that occur are among the many factors that cause the actualization of TQM and business activities in Indonesia to be so complicated.

Prior studies on TQM are primarily based on observations of the implementation of TQM and are supported based on the results of interviews with company executives (e.g., Amar & Zain, 2002). No previous researchers have offered concepts and tools that can be used to assess potential obstacles to implementing TQM. Ngai and Cheng (1999), and Bugdol (2020) have researched professional managers to identify potential challenges to implementing TQM. Georgiev and Georgiev (2017), Sahney, Banwet and Karunes (2008) stated the importance of quality as a dimension to realize the company's competitiveness. In addition, the quality can be used to achieve higher productivity and competitive advantage. Côte-Real, Ruivo and Oliveira (2020) and Othman, Khatib, Esmaeel, Mustafa and Sadq (2020), That quality is considered a competitive strategic tool and can increase the value of an organization. Then, Al-khalifa and Aspinwall (2000) revealed that increasing competition has forced many organizations to participate in the quality movement. Bader, Shugars and Bonito (2001) state that organizations must realize the importance of a quality system with growing competition. The average manufacturing company in Indonesia shows that product quality is still considered low. According to Gaspersz (2002), the average industry in Indonesia is still at the level of achieving six-sigma with a defect per million opportunities value. Over the last few decades, businesses have adopted quality management approaches such as TQM, Lean Six Sigma, efficiency-driven production management, and ISO 9001. Some of these studies focused on the relationship between Quality Management practices, the results of which explain the strong relationship between organizational performance (Prajogo & Sohal, 2006; Kaynak,

2003; Nair, 2006). Other studies examine Quality Management as the single factor supporting company performance (Barata & Cunha, 2017; López-Gamero, Yunez, Bandeira, Herrero, & Pinochet 2016; Pereira-Moliner, Pertusa-Ortega, Tari, López-Gamero, & Molina-Azorin, 2016; Sadikoglu & Zehir, 2010; Sadikoglu & Zehir, 2010). However, previous studies investigated the effect of Quality Management on organizational performance.

Furthermore, previous literature has revealed inconsistent results in the relationship between Quality Management practices and organizational performance. Quality Management practices affect organizational performance dynamically by different antecedent variables (Nair, 2006). For example, (Das, Handfield, Calantone, & Ghosh, 2000) and (Bouranta, Psomas, Suárez-Barraza, & Jaca, 2019); found that competition moderated the relationship between Quality Management practices and customer satisfaction and the relationship between high job involvement and organizational performance. Akgün, Ince, Imamoglu, Keskin, and Kocoglu (2014) suggested that firms' business innovation and organizational learning capabilities mediate the relationship between TQM and financial performance. Baird, Hu, and Reeve (2011) In his previous study, he emphasized that work culture in the organization is the most essential factor in improving and realizing TQM practices. Therefore, Baird, Hu, and Reeve (2011) suggested that the urgency of a conducive organizational culture is a crucial factor contributing to achieving the company's desired operational results. Quality management can establish a suitable environment that affects operational and business performance (Cadden, Marshall, & Cao, 2013; Baird, Hu, & Reeve, 2011; Zailani, Iranmanesh, Aziz, & Kanapathy, 2017; Kanapathy, Bin, Zailani, & Aghapour, 2017). These differences lead to the question of the impact of organizational culture on relationships between TQM and performance. This view is supported by Kanapathy, Bin, Zailani and Aghapour (2017), who suggested examining the role of organizational culture on the relationship between TQM and performance. In particular, there is a deep inherent need to investigate the associations between TQM, culture, and performance (Hilman, Ali, & Gorondutse, 2019; Ebrahimi & Sadeghi, 2013; Abusa & Gibson, 2013). However, a dearth of experimental studies examines the relationship between TQM, performance, and Perceived Distribution Quality Awareness implementation, particularly in developing countries (Imran, Hamid, Shabbir, Salman, & Jian, 2018; Talapatra & Uddin, 2019; Abusa & Gibson, 2013). Therefore, objectively, this study discusses the association between total quality management, Organizational Culture, Perceived Distribution of Quality Awareness, and quality output through a more in-depth analysis.

2. Literature Review

2.1. Quality Output

Quality has several meanings put forward by several experts. Aristotle gives two purposes to the word quality: showing how an object is distinguished from other things and perceiving excellent or not. On the other hand, quality is defined as a product's perceived superiority compared to alternative competitors from a market perspective (Anttila & Jussila, 2017; Lopes, Yunes, Freire, Herrero, & Pinochet, 2020). Quality is the ability to meet customer expectations and standards (Donnelly, Kerr, Rimmer, & Shiu, 2006). Quality is the totality of appearance and characteristics of a product or service related to its ability to meet needs (Waluya, Iqbal, & Indradewa, 2019). In the modern era, The Committee of International Organization for Standardization, ISO-9000, defines quality as the totality of features and characteristics of a product or service related to its ability to satisfy stated or implied needs (Delleman & Dul, 2007). Then the concept of quality was refined again in the form of certificate ISO-9001 to a level where an object's inherent characteristics meet the requirements (Anttila & Jussila, 2017). Ojasalo (2010) defines quality in general and in particular. The definition of quality generally describes the natural characteristics of a product, such as performance, reliability, ease of use, esthetics, and so on.

Concerning the marketing aspect, well-known researchers in Marketing, Heizer, and Render (2006) state that product quality is the ability of a product to carry out its functions, including durability, reliability, accuracy, and ease of operation repair, and other valuable attributes. In concession marketing, quality provides a benchmark for something expected to satisfy and exceed customer wants and needs. Therefore, quality control demands several fundamental aspects, including Compliance with requirements/demands; Suitability for use; Continuous improvement or refinement; Free from damage; Fulfillment of customer needs from the beginning and every time; Quality control means carrying out various stages correctly

from the start of production to the distribution process to make customers happy. In the study developed by Deming and Edward (1982), quality control is divided into 3 (three) categories: User-based quality, i.e., quality is seen as depending on the audience. User-based quality means having better product quality, better features, and other improvements in real-time. Second, manufacturing-based quality, where quality as a control center is carried out from the start by complying with applicable standard operating procedures. Activity, the product-based quality that views quality as a variable that is precise and can be calculated. The philosophical experts of the quality movement, especially Crosby, Deming, and Juran displayed in Table 1 below:

Deming and Edwards (1982) explain that fourteen principles of quality management must be carried out if you want to achieve a quality, namely: Setting consistent goals; The ability of a leader to bring about change; Build quality in products; Build long term relationships based on performance, not rewarding business based on price; Improving products, quality, and services on an ongoing basis; Start training; Emphasize fundamental aspects of leadership; Eliminate fear; Breaking down the boundaries between departments; Stop criticizing workers at length; Support, assist and improve for the organization; Breaking down barriers to feeling proud of each other's work; Establish a robust educational program and self-improvement; Putting everyone in the company working together as an effort to support the transformation process. Therefore, universally the study of output quality is based on definitions, theoretical studies of quality experts; we summarize some important notes about the basic principles of quality improvement, including 1). Quality development means building awareness to improve and improve quality continuously and adequately; 2) Build awareness about quality improvement, it is necessary to establish clear and enforceable organizational goals; 3) In addition to the leadership aspect, the role of all elements of the organization plays an essential role in realizing the goal of continuous quality improvement.

Table 1: Comparison of Definitions of Quality from TQM Pioneers

| Information | Crosby (1979) | Deming & Edwards (1982) | Juran (1986) |
|---|-------------------------------------|--|--|
| Definition of Quality | Suitability to needs | Predictable level of uniformity and reliability at low cost and in line with the market | Suitability for use (satisfying customer requirements) |
| Senior management level of responsibility | Responsible responsible for quality | Responsible responsible for 94% of quality problems | Workers cause less than 20% of quality-related problems. |
| Performance standards / motivation | Defect-free | Quality is multi-scale, using statistics to measure performance across areas; critical to zero-defect rate | Avoiding campaigns to do the perfect job |
| Structure | 14 steps for quality improvement | 14 points for management | Ten steps for quality improvement |

The concept of quality is limited to matters relating to the dimensions of performance (performance benchmarks) that are increasingly effective and efficient (Heizer & Render, 2006), or the features of a product through the addition of features, level of product reliability, conformance to specifications, durability, and the ability to provide superior service. However, the concept of quality must also represent conformity between aesthetics, ethics, and norms (Mappamiring & Putra, 2021). Understanding the distribution of output quality in the prospect of operational management put forward several relevant theories and contribute to overcoming the company's problems. These theories include quality mission theory and quality assurance theory. This theory becomes the basic theory to understand the importance of improving the output quality of a manufacturing company. The quality mission theory put forward by Ventegodt (2003) states that the quality mission determines a company's success to progress and develop and how well the distribution of management knowledge and the organization's internal readiness to realize an optimal quality control mission is. These missions include a quality leadership mission, a customer orientation mission, a supplier relationship mission, and a product design mission. Operational performance indicators include market share, new product launches, product/service quality, marketing effectiveness, and customer satisfaction (Hasrat & Rosyadah, 2021; Marpaung, Dwwi, Grace, Sudirman, & Sugiat, 2021; Simanjuntak & Putra, 2021).

2.2. Perceived Distribution Quality Awareness

In understanding the concept of awareness of distribution quality, excellent and optimal quality is needed. All members of the organization can carry that out. Awareness is a person's attitude who voluntarily obeys all regulations and knows his duties and responsibilities. By Chitcharoen, Kanthawongs, Wathanasuksiri, and Kanthawongs (2013) is 1) Awareness of feelings, thoughts, and surroundings. 2) Complete activity and involvement of the senses. 3) Individual and group ideas and feelings. Berti-Equille (2007) states that awareness is the process of internalizing the information obtained and becomes the values adopted to be realized every day. The definition of awareness has three components, e.g., Recall of personal knowledge; Recall of general information, and Memory of the collective wisdom of the individual concerned. Self-Knowledge is the understanding of a person's personally identifiable information. This knowledge is called self-awareness. Self-knowledge consists of self-awareness and other information about oneself. Second, World-knowledge, the ability to remember several facts from long-term memory. Third, activation of knowledge, someone is aware of the actions of others or can understand what other people

think. Emotional or affective components are associated with consciousness. According to Murray and Raffaele (1997); Brauner, Philipsen, Fels, Guhrmann, Ngo, Stiller, Schmitt and Ziefle (2016) stated that quality awareness is a way of thinking that includes all quality system elements. The concept of quality awareness emphasizes the dynamic interaction between people within the internal and external scope of the organization to realize organizational efficiency and aspects of sound and optimal communication. In his previous study, Khatoon, Zhengliang and Hussain (2020) stated that quality awareness includes, i.e., Good communication; Trust in the system, and Encouraging contributions from all parties.

2.3. Perceived Distribution Quality Awareness

Total Quality Management (TQM) is an operational management concept that focuses on the quality of production results and is based on the participation of all human resources and continuous improvement-oriented to long-term success through quality outputs that impact customer satisfaction and provide benefits to members; organization (human resources) and society. The widespread of TQM reflects the recent changes in the competitive environment that force organizations in many industries to formulate new strategic responses to increase internal efficiency and external effectiveness (Aquilani, Silvestri, Ruggieri & Gatti, 2017; Chong & Rundus, 2004). TQM has three main principles, customer orientation, total participation of all employees, and constant improvement (Bouranta, Psomas, Suárez-Barraza, & Jaca, 2019). Corredor and Goñi (2011) asserts that TQM is a unified management philosophy and set of practices emphasizing, among other things, continuous improvement, meeting customer needs, reducing rework, thinking long term, increasing employee engagement and teamwork, process redesign, benchmarking, competitive, team-based problem solving, continuously measuring results, and closer relationships with suppliers. The theory of global challenges put forward by Firman, Mustapa, Ilyas and Putra (2020) that the challenge of globalization for companies is quality. This means that to be a winner in competition in the era of globalization, companies must implement quality-based TQM. The company's implementation of TQM needs to require a guided control to determine customer-oriented quality. The theory of quality control group leaders (quality circle leader theory) from Corredor and Goñi (2011) states that to realize the implementation of competitive and high-performance TQM cannot be separated from quality leadership, customer involvement, supplier relations, and product design as a control group. Quality. This theory becomes a quality life cycle in a company. The theories above are in line with the views put forward by Bouranta,

Psomas, Suárez-Barraza, and Jaca (2019). He introduced Deming's theory that total and integrated quality management determines the success of competitiveness and improvement of company performance.

2.4. Hypothesis Development

In the quality management literature, attention to the importance of organizational culture is primarily driven by many companies' failure to achieve the expected benefits from their TQM implementation. This is due to the company's cultural factors that are not optimally implemented by the internal organizations (Prajogo & McDermott, 2005). Both TQM and Six Sigma require radical changes in organizations when carrying out their business processes. Employees' Attitudes and Behaviors are very Important To implement the necessary adjustments in implementing a quality management program. Organizational culture is recognized to have a limiting effect on the effectiveness of the implementation of quality management. Underlying Values and Beliefs Organizational culture can shape the philosophy and policies of managing a business, influencing quality management practices (Waldman, 1993). It has been widely agreed that to realize the value of implementing TQM practices, all internal organizations must have a culture that can support organizational goals effectively and efficiently fully (Sousa-Poza, Nystrom, & Wiebe, 2001).

The importance of organizational culture is also explicitly discussed in the Six Sigma literature. Culture is seen as a very effective tool to bring about the necessary changes for disseminating Six Sigma and distributing knowledge about quality within an organization. For example, Antony and Banuelas (2002) identify organizational culture as critical to implementing Six Sigma and reasonable corporate quality control. Breyfogle and Meadows (2001) suggests that organizations should assess their current culture and identify strengths, weaknesses, and factors that become opportunities for the company as an organization's efforts to push the organization towards Six Sigma implementation and reasonable quality control. Therefore, Managers must then create a strategic plan to increase the drivers and overcome the restraining forces. Previous studies have tried to identify cultural characteristics conducive to quality management implementation, e.g., (Buch & Rivers, 2001; Zeitz, Johannesson, & Ritchie, 1997). Most previous studies treated quality management as a unidimensional construct and usually focused on the cultural characteristics associated with people with high flexibility. However, the quality management literature has shown that quality management is a multi-dimensional construct that includes many practices. In particular, some practices are softer

infrastructure practices, such as stop management support and workforce management, which emphasize quality management of organizational culture and society and use various organizational development techniques to facilitate change. Given the significant differences between the multiple practices covered by TQM and Six Sigma, it is highly likely that the characteristics of cultures that support certain practices differ from the characteristics of cultures that support other methods. They need to recognize the multi-dimensional relationship between organizational culture and quality management has been identified by several researchers (Prajogo & McDermott, 2005). Prajogo and McDermott (2005) stated that TQM initiatives fail in many companies for two main reasons: partial deployment of TQM practices and failure to integrate TQM and cultural change. It is thus recommended to use the CVF model to highlight the comprehensive nature of the TQM Factors and ensure they are integrated into the TQM implementation for success. Prajogo and McDermott (2005) compared the unit research model that treated TQM as a single construct and the pluralist model that considered TQM multi-dimensional elements. The pluralist model better described the relationship between cultural types and TQM practices with different cultures. They were associated with other groups of TQM practices. This study builds on previous research by Prajogo and McDermott (2005) by extending practice with consideration to include Six Sigma Practices. Next, we develop and propose a set of hypotheses between individual message cultures TQM/Six Sigma Practices. The results will provide a detailed description of the culture-quality management relationship. Based on the description of the narrative literature background and prior research, the hypotheses proposed in this study are:

- H1:** An excellent organizational culture will encourage efforts to increase the company's quality output to be optimal. Therefore, organizational culture plays a significant role in quality output. Furthermore, organizational culture also urges measures to increase TQM by organizations to be significant so that the optimal organizational culture has a positive and significant impact on TQM.
- H2:** Perceived Distribution Quality Awareness will form a positive and significant direct relationship and influence organizational culture, quality output, and TQM.
- H3:** Total Quality Management (TQM) will have a positive and significant effect on quality output.
- H4:** Indirectly, Perceived Distribution Quality Awareness will encourage increased quality output if it is intervened by positive organizational culture and TQM.
- H5:** TQM and organizational culture further strengthen the indirect effect on the dependent variable

asymmetrically and symmetrically. Therefore, Organizational culture and TQM play an essential role in realizing optimal quality output.

3. Research Methods and Materials

3.1. Sample of the study

The Selection sample in this study came from 170 respondents who are internal members of the organization (i.e., managers, staff, employees, production workers, back-office staff) spread from 48 companies from various sectors such as the industrial sector, property sector, transportation sector, and industrial sector. In determining the sample, we adopted the results of research on TQM in Indonesia by Ramlawati and Putra (2018) which uses a sample of 129 managers in 43 companies in Indonesia. In addition, Sample Size Recommendations when using PLS-SEM by Hair, Sarstedt, Hopkins, and Kuppelwieser (2014) provides a minimum sample statement referring to the number of the arrow pointing at a construct. In our study, we demonstrated a 4-way arrow pointing at a construct. Therefore, in his research, Hair, Sarstedt, Hopkins, and Kuppelwieser (2014) gave a statement using a minimum sample of 137 with a sig value criterion of 0.05. Based on these two foundations, our study using a selection of 170 samples was declared eligible for testing using SEM-PLS. The criteria for the informants are based on the length of work of at least three years. The sampling method uses the quota sampling method. The demographic description of the respondents is illustrated explicitly in Table 2.

Table 2: Sample Criteria (N = 170)

| Measurement | N | % |
|--------------------------------------|-----|------|
| Gender | | |
| - Man | 138 | 81.2 |
| - Female | 32 | 18.8 |
| Age (years old) | | |
| - 30 – 35 | 79 | 46.4 |
| - 36 – 40 | 41 | 24.1 |
| - 41 – 45 | 34 | 20 |
| - > 45 | 16 | 9.4 |
| Status | | |
| - Manager Operational | 48 | 28.2 |
| - Manager Human Resource Development | 40 | 23.5 |
| - Production Staff | 27 | 15.8 |
| - Back office staff | 21 | 12.3 |
| - Employee | 34 | 20 |

| | | |
|------------------------|----|------|
| Length of Work (years) | | |
| - 3 – 5 | 28 | 16.6 |
| - 5 – 8 | 71 | 41.7 |
| - > 8 | 71 | 41.7 |
| Education Level | | |
| - Senior High School | 44 | 25.8 |
| - Bachelor | 93 | 54.7 |
| - Magister | 33 | 19.4 |

3.2. Measures for study variables

Measurement and data collection in this study used a questionnaire that was distributed to the respondents. The survey contains 52 questions; each question is grouped based on the variable; for example, the question regarding Perceived Distribution Quality Awareness consists of 10 question items. Variable Organizational Culture consists of 12 question items. Variable Total Quality Management consists of 18 question items. The quality output variable consists of 11 questions. Measuring the frequency distribution of respondents' answers, we measure it using a Likert scale with scale details as follows: 1 = strongly disagree, 2 = disagree; 3 = disagree; 4 = neutral; 5 = somewhat agree; 6 = agree; and 7 = strongly agree. The measurement of the distribution of respondents' answers is then calculated using Smart-PLS to determine the standard deviation value, the average value of the distribution of respondents' answers, loading factor > 0.60 (Fornell & Larcker, 1981; Hair, Sarstedt, Hopkins, and Kuppelwieser (2014); Inner-model testing with assessment criteria > 0.60 (i.e., Cronbach alpha, composite reliability, and AVE) (Chin, 1998). Demonstration of the measurement of item-variable data is shown in Table 3.

Furthermore, suppose the measurement data has been declared feasible as with the measurement criteria described above. In that case, the next step is to measure the goodness of fit model by assessing the data testing standards, i.e., Standardized Root Mean Square Residual and Normed Fit Index (SRMR < 0.80, NFI > 0.90) (Henseler, Hubona, & Ray (2016); Bentler & Bonett, 1980). d_{ULS} and d_G With the original value criteria (saturated model > estimated model). The results of the demonstration of the Goodness fit model are illustrated in table 4. Further, the subsequent testing stage tests the coefficient of determination and the F-test (R-Square and F-test), presented in Table 6. The last step of research testing is testing the hypothesis using the constant bootstrapping method with chi-square (n = 170), determining the T-statistic value and P-Value value with the measurement criteria sig < 0.05 as demonstrated in Table 7.

Table 3: Data Measurement

| Variable | Item | Std. Dev | Mean | Loading Factor | Cronbach Alpha | CR | AVE |
|--|--|----------|--------|----------------|----------------|-------|-------|
| Perceived Distribution Quality Awareness | • Attitude of responsibility | 1.238 | 5.500 | 0,845 | 0.936 | 0.946 | 0.635 |
| | • Self-awareness | 1.040 | 5.794 | 0,778 | | | |
| | • Alignment | 0,654 | 6.112 | 0,797 | | | |
| | • Attentive attitude. | 1.253 | 5.647 | 0,792 | | | |
| | • Increased contribution from everyone | 0,589 | 6.094 | 0,772 | | | |
| | • Good communication | 0,563 | 6.206 | 0,774 | | | |
| | • Organizational Readiness | 1.001 | 5.876 | 0,859 | | | |
| | • Supporting facilities | 0,661 | 5.988 | 0,798 | | | |
| | • Clear standard operating procedures | 1.123 | 5.718 | 0,773 | | | |
| Organizational Culture | • Based on customer needs | 1.017 | 5.865 | 0,778 | 0.940 | 0.949 | 0.654 |
| | • Participation, open discussion | 1.543 | 4.653 | 0,692 | | | |
| | • Empowerment of employees to act | 1.443 | 5.106 | 0,760 | | | |
| | • Assessing employee concerns and ideas | 1.538 | 4.559 | 0,821 | | | |
| | • Human relations, teamwork, cohesion | 1.577 | 4.888 | 0,764 | | | |
| | • Flexibility and decentralization | 1.184 | 5.512 | 0,802 | | | |
| | • Expansion, growth, and development | 1.242 | 5.529 | 0,766 | | | |
| | • Innovation and change | 1.036 | 5.741 | 0,876 | | | |
| | • Creative problem-solving processes | 0,689 | 5.776 | 0,846 | | | |
| | • Accomplishment and goal achievement | 0,660 | 5.882 | 0,865 | | | |
| | • Direction, objective setting, goal clarity | 0,686 | 5.847 | 0,873 | | | |
| | • Control, centralization | 1.059 | 5.947 | Delete | | | |
| • Stability, continuity, order | 1.390 | 5.494 | Delete | | | | |
| Total Quality Management | • Leadership | 1.129 | 5.918 | Delete | 0.947 | 0.953 | 0.611 |
| | • Organizational culture | 1.193 | 5.865 | Delete | | | |
| | • Top management support | 1.679 | 4.424 | 0,683 | | | |
| | • Continuous improvement | 1.567 | 4.224 | 0,708 | | | |
| | • Benchmarking | 1.564 | 4.247 | 0,833 | | | |
| | • Quality objectives and policy | 1.439 | 4.771 | 0,726 | | | |
| | • Employee empowerment | 1.381 | 5.382 | Delete | | | |
| | • Employee engagement | 1.265 | 5.665 | Delete | | | |
| | • Employee training | 1.620 | 4.535 | 0,791 | | | |
| | • Use of information technology | 1.429 | 5.006 | 0,701 | | | |
| | • Supplier quality | 1.656 | 4.518 | 0,764 | | | |
| | • Supplier relations | 1.513 | 4.994 | Delete | | | |
| | • Supplier performance appraisal | 1.233 | 5.535 | 0,742 | | | |
| | • Product and service design | 0,679 | 6.176 | 0,842 | | | |
| | • Process approach | 1.005 | 6.118 | 0,834 | | | |
| • Customer orientation | 1.125 | 5.900 | 0,784 | | | | |
| • Realistic TQM implementation schedule | 1.051 | 5.865 | 0,873 | | | | |
| • Inspection and checking of work | 1.145 | 5.841 | 0,848 | | | | |
| Quality Output | • Guarantees or non-defective products | 1.052 | 5.924 | 0,855 | 0.942 | 0.950 | 0.654 |
| | • Compliance with design specifications | 1.038 | 5.800 | 0,801 | | | |
| | • Reliability | 1.093 | 5.735 | 0,838 | | | |
| | • Durability | 1.051 | 5.700 | 0,860 | | | |
| | • Ease of use of the product | 1.086 | 5.259 | Delete | | | |
| | • Aesthetics | 1.072 | 5.418 | 0,761 | | | |
| | • Product Pricing Flexibility | 1.102 | 5.488 | 0,761 | | | |
| | • After-sales service | 1.163 | 4.965 | 0,779 | | | |
| | • Image product and Image organization | 1.159 | 4.947 | 0,776 | | | |
| | • Product safety | 1.125 | 5.006 | 0,784 | | | |
| • Service quality | 1.384 | 5.118 | 0,860 | | | | |

4. Results and Discussion

4.1. Statistical Analysis

In this section, we discuss the results we have obtained in the demonstration of statistical tests. For example, as shown in Table 3, the mean coefficient value in the frequency distribution for each question item is on a scale of 5~6. This indicates that the frequency distribution of respondents' answers is between the categories somewhat agree - agree with all statements on the questionnaire sheet. Then the outer-loading coefficient of all item variables shows a value > 0.60 , so it can be concluded that based on the outer-loading value. It is declared valid to be continued at the next statistical testing stage, as for some items that were deleted due to the measurement of the outer-loading value < 0.60 . based on the assumption of using the SEM method, these items were excluded from the test. Furthermore, the Cronbach Alpha, AVE, and Composite reliability values also show a valid value > 0.60 . Moreover, the measurement of the Model Fit coefficient is illustrated in Table 4. It also states that the Saturated Model and

Estimated Model values have been declared fit based on the Assessment criteria benchmarks. Table 5, which explains the measurement of Discriminant validity, shows that testing the validity of the variable crosswise against other variables also shows the coefficient value > 0.60 . Therefore, this illustrates that the validity test obtained a validity value with a very high category. Table 6 describes the measurement of the R-Square value, which means how closely the relationship between the independent variable and the dependent variable is, for example, on the organizational culture variable with the coefficient of determination R-Square = 0.935. this means that the close relationship of the independent variable to the organizational culture variable is 93.5%. Then the dependent variable on the quality output variable is 0.738 or 73.8%, and the TQM variable is 0.872 or 87.2%. The residual value from the measurement of the R-Square coefficient explains that the difference to 100% of the close relationship is influenced by other factors not examined in this study. Then the F-Square coefficient test also shows that all independent variables on the dependent variable are significant < 0.05 .

Table 4: Model Fit

| | Assessment criteria | Saturated Model | Estimated Model | Result |
|------------|-------------------------------------|-----------------|-----------------|--------|
| SOME | < 0.80 | 0,086 | 0,089 | Fit |
| d_ ULS | saturated model $>$ estimated model | 7,011 | 7,416 | Fit |
| d_ G | saturated model $>$ estimated model | 4,561 | 4,709 | Fit |
| Chi-Square | - | 3279,774 | 3315,951 | Fit |
| NFI | >0.90 | 0,942 | 0,938 | Fit |

Table 5: Discriminant Validity

| | OC | PDQA | QU | TQM |
|------|-------|-------|-------|-------|
| OC | 0,809 | | | |
| PDQA | 0,967 | 0,797 | | |
| QU | 0,880 | 0,894 | 0,809 | |
| TQM | 0,917 | 0,932 | 0,859 | 0,782 |

Table 6: R-Square dan F-Square

| | R Square | | R Square Adjusted | |
|--|----------|------|-------------------|-------|
| Organizational Culture | 0,935 | | 0,935 | |
| Quality Output | 0,738 | | 0,736 | |
| TQM | 0,872 | | 0,870 | |
| F-Square | OC | PDQA | QU | TQM |
| Organizational Culture | | | | 0,030 |
| Perceived Distribution Quality Awareness | 14,379 | | | 0,247 |
| Quality Output | | | | |
| TQM | | | 2,811 | |

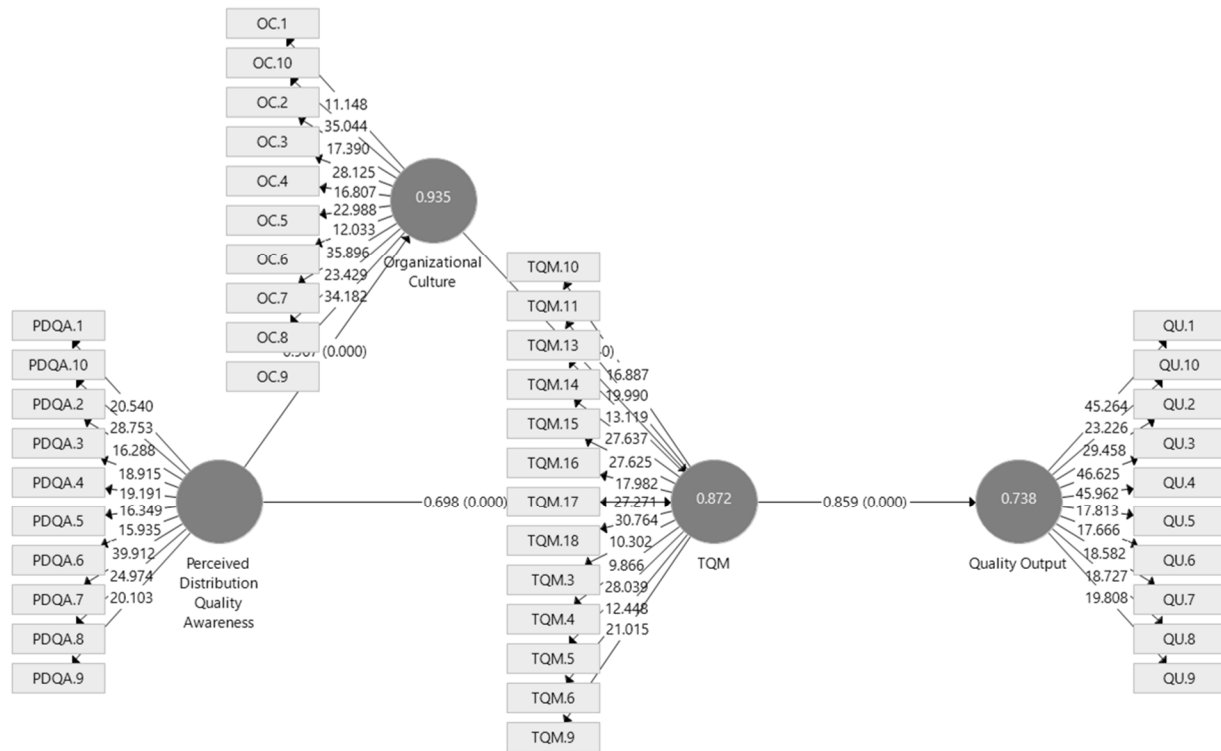


Figure 1: SEM-PLS Result

In the next stage, namely hypothesis testing, as shown in table 7, it is explained that all test demonstrations, either directly or indirectly using the intervening variable, obtained a significance coefficient value (p-value) < 0.05. The demonstration that illustrates the direct relationship of the most dominant variables is shown in the relationship between the Perceived Distribution Quality Awareness on Organizational Culture variable with a T-statistic value = 142,964 with a significance value < 0.01. Furthermore, the indirect relationship is the most dominant relationship between Perceived Distribution Quality Awareness on Quality Output, bridged by the TQM variable as an intervening variable with a T-statistic coefficient = 6.008 with a P-value < 0.01. In detail, the Structural Equation Model using the PLS method is also demonstrated, as shown in Figure 1.

The results of hypothesis testing (H1) indicate that organizational culture has a positive and significant effect on quality output (t-statistic = 2.044; with a significance coefficient of 0.042 < 0.05), as well as the relationship that explains organizational culture on TQM, which also has a positive and significant effect (t-statistic = 2.062, significance coefficient 0.040 < 0.05). So it can be concluded that an excellent organizational culture will encourage efforts to increase quality output to be optimal. Therefore, based on the demonstration of statistical testing described in table 7, it is stated that the hypothesis (H1) is

accepted. Furthermore, the idea (H2) also says that Perceived Distribution Quality Awareness has a positive and significant direct effect on quality output (t-statistic = 142,964; significance coefficient < 0.01) as well as on TQM, which also has a positive and significant impact (t-statistic = 76.743, significance coefficient < 0.01). This means that positive implementation of Perceived Distribution Quality Awareness will encourage a more positive organizational culture related to TQM implementation and quality output; based on the test results, it can be concluded that the hypothesis (H2) is also accepted. Apart from that, the results of hypothesis testing (H3), which demonstrate the effect of TQM on quality output, also show a positive and significant impact. Implementing TQM that is both optimal and applied in an integrated manner in the organization will encourage a positive increase in quality output. Then, hypothesis testing (H4) shows that the intervention of TQM and organizational culture variables has a positive and significant effect on quality output. The positive coefficient of TQM and organizational culture further strengthens the role of perceived distribution quality awareness on quality output. Likewise, the hypothesis (H5) is also accepted to demonstrate an indirect relationship. TQM and organizational culture further strengthen the indirect effect on the dependent variable asymmetrically and symmetrically. Therefore, organizational culture and TQM play an essential role in realizing optimal quality output.

Table 7: Hypothesis Result

| Direct Effect | Original Sample | Sample Mean | Standard Deviation | T-Statistics | P-Values | Result |
|--|-----------------|-------------|--------------------|--------------|----------|---------|
| Organizational Culture → Quality Output | 0,208 | 0,219 | 0,102 | 2,044 | 0,042 | Support |
| Organizational Culture → TQM | 0,242 | 0,254 | 0,117 | 2,062 | 0,040 | Support |
| Perceived Distribution Quality Awareness → Organizational Culture | 0,967 | 0,967 | 0,007 | 142,964 | 0,000 | Support |
| Perceived Distribution Quality Awareness → Quality Output | 0,800 | 0,803 | 0,028 | 28,100 | 0,000 | Support |
| Perceived Distribution Quality Awareness → TQM | 0,932 | 0,933 | 0,012 | 76,743 | 0,000 | Support |
| TQM → Quality Output | 0,859 | 0,861 | 0,023 | 37,369 | 0,000 | Support |
| Indirect Effect | Original Sample | Sample Mean | Standard Deviation | T-Statistics | P-Values | Result |
| Perceived Distribution Quality Awareness → Organizational Culture → TQM → Quality Output | 0,201 | 0,212 | 0,099 | 2,029 | 0,043 | Support |
| Perceived Distribution Quality Awareness → TQM → Quality Output | 0,599 | 0,592 | 0,100 | 6,008 | 0,000 | Support |
| Perceived Distribution Quality Awareness → Organizational Culture → TQM | 0,234 | 0,246 | 0,114 | 2,049 | 0,041 | Support |
| Organizational Culture → TQM → Quality Output | 0,208 | 0,219 | 0,102 | 2,044 | 0,042 | Support |

4.2. Discussion

Discussion about Perceived Distribution Quality Awareness for a company is essential to face global competition. Perceived Distribution Quality Awareness in question is the attitude of a person consciously, responsible, and attentive to work together with others in terms of quality to make continuous improvements and quality improvements to fulfill user desires. The results of this analysis indicate that all indicators of quality awareness have a positive influence on the implementation of TQM in the company. Quality awareness indicators in the form of increased contribution from everyone, harmony, good communication, the attitude of responsibility, awareness, and caring must be appropriately considered. These indicators can form employee quality awareness that can have a positive and significant impact on the implementation of TQM.

This study also confirms that every element of the organization must contribute in the form of participation and involvement of people (employees and managers) both in thought and action in continuous quality improvement. In implementing TQM, a fundamental aspect of sustaining perceived distribution quality awareness is involving people in the implementation process and empowering them to participate actively. Managers need to be aware of the various possibilities for involving people in quality awareness activities as a strategic issue, contributing to organizational goals. Furthermore, the Alignment Indicator on perceived distribution quality awareness is the second aspect that can form quality awareness in carrying out the company's operational activities. Alignment referred to in quality awareness is that every employee can harmonize

between self-awareness and organizational awareness. If the alignment of self-awareness and organizational awareness goes well, then the implementation of TQM will also run well. Comprehensive management involvement is required to ensure those job descriptions are genuinely aligned with the organization's needs or in line with the company's quality manual. To support this, a good communication network is a necessary indicator in forming perceived distribution quality awareness. Communication aims to promote shared values and understanding of the business through ongoing dialogue. Effective communication between workers and managers helps create efficient work processes to follow standard operating procedures. Management should take the time to discuss quality with different team members to get all elements of the operation involved. The information flows from top to bottom, and vice versa from bottom to top and flows between fellow employees horizontally. The fourth-order indicator needed in forming quality awareness is an attitude of responsibility. Responsibility is an essential moral value in social life that also needs to be instilled in every employee. Employees who are responsible always show perseverance, diligence, and seriousness in handling the work given.

The fifth-order indicator that makes up the Perceived Distribution Quality Awareness is awareness. Awareness is a state of understanding, knowing, and alertness in continuous improvement and quality improvement activities. Consciousness is considered as an individual's ability to control behavior over what is happening around him. In addition, what also forms the Perceived Distribution Quality Awareness is the attitude of concern. Attitude is a reaction or response that is still closed from a person to a stimulus or object. Attention is closely related to the soul's awareness of

a thing that is reacted at a time. Attitudes and engagement must be instilled properly in every internal member of the organization to support the successful implementation of TQM.

They understood the quality awareness indicators that have a positive and significant impact is expected to improve the implementation of Total Quality Management in a better direction. This aligns with Chitcharoen, Kanthawongs, Wathanasuksiri, and Kanthawongs (2013) that quality awareness among people is essential for achieving TQM goals. Similarly, Brauner, Philipsen, Fels, Guhrmann, Ngo, Stiller, Schmitt, and Ziefle (2016), the successful implementation of TQM will be achieved with the involvement of employees. A high level of quality awareness during the development of TQM produces the essential prerequisites for success and the primary goal of TQM (Prajogo & McDermott, 2005). The primary purpose of quality awareness is to collect team experiences and communicate them to management for current and future improvement (Baker, Phelan, Woods, Boyd, Rowland, & Ng, 2021); quality awareness can be summed up by "3A" Awareness, Alignment, and Attention. Awareness, harmony, and mindfulness imply awareness of oneself and one's surroundings; This also shows that awareness must be in alignment with organizational awareness, which will help the activities and full involvement of the senses so that the actions of implementing Total Quality Management can run well. The above description is supported by several theories, including the idea put forward by Dwivedi, Ismagilova, Hughes, Carlson, Filieri, Jacobson, Jain, Karjaluto, Kefi, Krishen, Kumar, Rahman, Raman, Rauschnabel, Rowley, Salo, Tran, & Wang (2020) regarding self-awareness.

The importance of human resources to the organization lies in human self-awareness to react positively to goals of work or activities undertaken. Previous research relevant to this research is that conducted by Sousa-Poza, Nystrom, & Wiebe (2001). The results of his study include showing that employee behavior in the form of (quality awareness, quality competence, and quality motivation) has a significant impact on the practice of Total Quality Management. Likewise, Amar and Zain (2002) results of his research stated that quality awareness, staff capabilities, quality attitudes, and staff interests had a positive and significant impact on TQM practice. This study indicates that quality awareness has a positive and significant effect on Total Quality Management in manufacturing companies. The two previous researchers used quality awareness as an indicator in their research, while quality awareness was used as a research variable in this study. Quality awareness plays an essential role for companies to improve the quality of output. The contribution of quality awareness for a company dramatically determines the production quality compete globally. Perfect quality (quality excellence) in an

organization can be achieved if all members contribute to quality improvement. However, efforts to contribute to quality will not be practical if employees' awareness of quality lacks. Based on this, it shows that quality awareness is an important variable to improve the quality of the company's output.

5. Conclusions

Total Quality Management applied in manufacturing companies is essential to face global competition that prioritizes the quality of output following the wishes of users or consumers. Total Quality Management is meant to be integrated and integrated quality management practices that involve all company components to realize the quality of output following the user's wishes. Supplier performance assessment indicators are essential indicators in Total Quality Management. Supplier performance assessment is critical to a company. Companies that implement TQM know the performance of each supplier to be used as material for good supplier recommendations in meeting company needs. Performance appraisal is essential as an evaluation material that can later be used to improve supplier performance or consider whether or not to find another supplier. In addition to efforts to implement TQM in an integrated manner, the leadership factor plays a vital role because top management support provides a critical role to direct the organization to make continuous improvements. Apart from that, the organizational culture factor is also an aspect of the implementation of TQM and the Perceived Distribution of Quality Awareness.

Participation factors and open discussions involving all elements of the organization can provide opportunities for the performance of TQM and Quality Output to be accurate. The organizational culture that leads to integrated human relationships, flexible teamwork, and innovation orientation is essential for realizing sustainable organizational goals. Therefore, some critical notes in creating organizational culture, perceived quality awareness, and quality output require concrete steps, including creative problem-solving processes. The effectiveness of achieving clearly defined goals includes direction, goal setting, and efforts to describe the organization's strengths, weaknesses, strengths, and opportunities so that the quality output of production and company operations becomes effective and efficient. Apart from that, efforts to create an organizational culture to maximize Perceived Distribution, Quality Awareness, and quality output can provide organizational opportunities for benchmarking because competitiveness and comparison are tools within the company to position itself in the business world. When making decisions, it is necessary to look for techniques to improve quality and competitiveness in terms

of strategic management and operations and sustainable product competitiveness (Krishnamoorthy & D'Lima, 2014).

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