Total quality management as a business investment in facing business competition ASEAN countries areas

Ade Parlaungan Nasution[1*], Pristiyono[1], and Yona Melia[1]

[1]Labuhanbatu University
[*]Corresponding author:adenasution@gmail.com

ABSTRACT The implementation of Total Quality Management (TQM) in the future tends to use strategy and competitive advantage as benchmarks in a management approach that aims to touch long-term success. The purpose of this study is to analyze the main factors influencing the company's superiority which is closely related to Total Quality Management (TQM) as well as a novelty in this study to provide an accurate picture of Total Quality Management (TQM) as an internal investment in facing business competition in North Sumatra. This type of research is a descriptive quantitative research using secondary and primary (questionnaire with google form). The population of this study refers to the Maximum Likelihood Estimation (MLE). The number of samples in the survey ranges from 100-200 pieces. So the author's sample set of 100 models, where the sample being researched is a leader/manager/supervisor who works in various manufacturing companies, plantations, banking services, and others. The right sampling technique in this study uses purposive sampling with the criteria of the leader/manager/supervisor of the company who can represent the research representative. The data analysis technique used in this study is Smart PLS v 4.0 to predict the relationship between one construct and another. The results of the study indicate that the indicators used in this study are sufficient to support the results of the research, the research respondents targeted are companies through the description or profile of the targeted sample respondents, most of them are respondents with supervisory positions, branch heads, and plantation clerks so that they understand well the implementation of Total Quality Management (TQM), the overall hypothesis testing results are well received because it has a t-statistic greater than 1.96 and has a p-value less than 0.05 and the test results have the highest influence value, namely Total Quality Management (TQM) has a significant effect on Business Strategy with a t-statistic value of 32,048 $\geq$ 1.96.

1. INTRODUCTION

Today's business competition between companies is increasingly inevitable, many companies are sorting out business strategies to win the competition, this is in line with research results (Adiguzel, 2019) the world is experiencing rapid growth and change for a business, he added that in addition to qualified personnel and resources, there must be a balance with technological changes. According to Organ (2005) technology related to artificial intelligence can help the business world a little better and provide good results for companies, when analyzed that business competition requires important factors to succeed including companies must adopt various artificial technologies to become a business advantage.

Any company that stands on the face of the earth must have investment as an internal strategy to deal with business competition, in addition to company technology support, carrying out its activities requires top management support, information quality, process management, product design, management involvement, supplier involve-

ment and consumer involvement and employee empowerment (Prayhoego& Devie, 2013). Observing business competition with all of the company's capabilities, better known as Total Quality Management (TQM) and technology support, it is possible for companies to win the business competition and survive for a long time.

According to Fawzy & Olson (2018) Currently, Total Quality Management (TQM) is one of the most important principles in management, including one of the most successful companies in the world, Apple. Apple's business model in every product offers quality, this means that Apple has top management support, information quality, process management, product design, management involvement, supplier involvement, and consumer involvement as well as employee empowerment and perfect technology support to win the competition. According to (Total Quality Management, Total Quality Management (n.d.). Implementation of Total Quality Management (TQM) places quality in a broader perspective than management which is still traditional.

According to experts like Mary (2021) Total Quality Management (TQM)¬ is a management framework based on the belief that an organization can build long-term success if all its members are qualified. Another case according Ungar (2021) Toyota Motor Co., Ltd.'s corporate philosophy won the Deming Application Prize in 1965 and the Japan Quality Control Award in 1970 the company has carried out Total Quality Management (TQM) based on the principles of customer first and total participation with friends in the organization.

Over time Total Quality Management (TQM) amid the industrial revolution 4.0 against the activities of customer workers and manufacturers jointly developed Total Quality Management (TQM) based on industrial technology as a key to company investment, but he hopes to find experimental research related to Total Quality Management (TQM) (Sader, 2020). So the purpose of this study is to analyze the main factors affecting the company's excellence which are closely related to Total Quality Management (TQM) as well as a novelty in this study to provide a real picture of Total Quality Management (TQM) as an internal investment in facing business competition in North Sumatra. supported by SmartPLS 4.0 data analysis.

2. LITERATURE REVIEW

2.1 Implementation of Total Quality Management (TQM)

In the industrial world, Total Quality Management (TQM) is the right way to help institutions or companies plan changes and set agendas in the face of various external pressures. (Turang, 2019). Accord (S. I. Ali, 2017) that the implementation of Total Quality Management (TQM) requires fundamental changes starting from the organizational infrastructure, including the system of allocation of authority, decision-making, a system of performance measurement, and a system of rewards and sanctions. So even in manufacturing and service companies Total Quality Management (TQM) can be measured by the existence of the company's managerial performance in achieving the vision and mission that has been set. Total Quality Management (TQM) is a management philosophy driven by achieving consistent customer satisfaction through continuous improvement of all organizational processes. According to Ellitan & Dihardjo (2021) is the latest breakthrough in management where all activities are aimed at optimizing customer satisfaction through continuous improvement. What was said by Putra et al. (2021) through research Total Quality Management (TQM) is an oriented approach and continues to introduce change management systems and continues to improve organizational processes, products, and services. So it can be explained according to the development of the basic theory of Total Quality Management (TQM) is the involvement of all important parts in a consumer-oriented company. According to Prayhoego& Devie (2013) Total Quality Management (TQM) indicators include top management support, quality information, process management, product design, workforce management, supplier engagement, customer engagement, and employee empowerment.

2.2 Business Strategy

Even small companies will still consider business strategies in carrying out their activities so that they are recognized by the market and are able to compete. The current business concept is no longer defensive but open that provides opportunities for anyone to play and win the market. The definition of strategy according to Maryani (2019) is a goal that is taken before taking an action and shows a shared understanding of the company's vision and mission, he added that business strategy is a deliberate choice of how the company will carry out its main activities and support the value chain to create unique value. According to Dunan & Angestu (n.d) Business strategy is an activity that is carried out by a person or group of company people in the form of services or goods to gain profit. He analogizes that business strategy is a strategy to achieve goals which are often analogous to chess, in which there is systematic thinking, planning, alertness, and courage to take risks. So the business strategy if you study well the definitions above are closely related to the company's concept of implementing various policies such as determining product prices, displaying different products, and others. According to (Manajemen & Faruq, 2014) business strategy namely every business requires the discovery of a strong business basis from competition analysis to obtain an overview of market segmentation and certain products that have been decided to enter. The indicators adopted in this study are low-cost strategy, differentiation strategy, focus strategy, and leadership strategy.

2.3 Competitive Advantage

The concept of competitive advantage coined by Michael Porter in 1985 focuses on companies determining competitive advantage in business can be obtained by offering better and greater value to clients (Stonehouse & Snowdon, 2007; Pristiyono et al., 2003). The business competition that is so tight in today's terms is better known as competitive advantage, according to Nofrizal et al. (2021) is a profit strategy of companies that cooperate to compete more effectively in the market. According to Švárová & Vrchota (2014) competitive advantage is what separates a company from others and keeps a company growing and surviving. Meanwhile according Cegliński (2017) competitive advantage is what separates a company from others and keeps a company growing and surviving. Meanwhile according Sigalas (2018) defines competitive advantage as an isolated characteristic or characteristic of an individual product market that provides a strong change in a competitive position. According to (Pristiyono et al., 2003) the value of competitive advantage in a company depends on its resources, capabilities, and competitiveness. In addition, the concept of competitive advantage extends to the competitive advantage that has been found in small and medium enterprises that emphasize customer-created values (Potjanajaruwit, 2018). Thus, a good competitive advantage is a significant advantage over its competitors due to the allocation of costs and operating results that depend on the positioning strategy (Išoraitė, 2018). Accord to Ho & Ho (2011) that competitive advantage theory suggests that countries and businesses should pursue policies of high quality at high prices in the market. The indicators of competitive advantage are price, quality, and time to market.

2.4 Conceptual Framework

Companies in maximizing organizational competitiveness must maximize all internal capabilities, namely Total Qual-

ity Management (TQM) (Prabowo, 2015). Furthermore, according to (Prayhoego& Devie, 2013) that indicators of Total Quality Management (TQM) include top management support, quality information, process management, product design, workforce management, supplier engagement, customer engagement, and employee empowerment. As for indicators of competitive advantage, namely price, quality, time to market, management capabilities, profits, position, and strategic location. The company's success in implementing Total Quality Management (TQM) will not only have a quality impact but will place the company's position in the eyes of competitors having different advantages while implementing the right business strategy. The following describes the framework of this study:
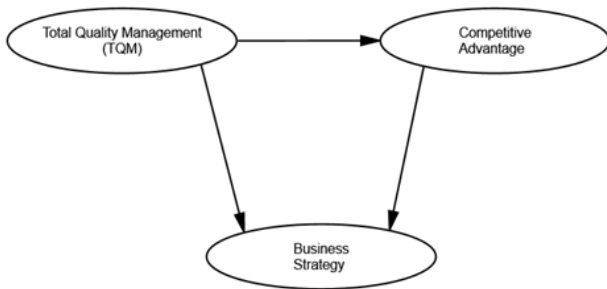

Figure 1. Conceptual Framework (Source: Processed Data, 2022)

2.5 Hypothesis

Based on the description of the theoretical explanation and conceptual framework, the research hypothesis is:

H$_1$: There is a direct relationship between Total Quality Management (TQM) and competitive advantage.

H$_2$: : There is a direct relationship between Total Quality Management (TQM) business strategy.

H$_3$: There is a direct relationship between business strategy and competitive advantage.

3. METHOD

This type of research is a quantitative descriptive research using secondary and primary (questionnaire with google form). The population of this study refers to the Maximum Likelihood Estimation (MLE) the number of samples in the survey ranges from 100-200 samples. So the author's sample is set at 100 samples, where the sample studied is leaders/managers/supervisors who work in various manufacturing companies, plantations, banking services, and others. The proper sampling technique in this study uses purposive sampling with the criteria of a company leader/manager/supervisor who can represent the research representative. The scaling technique used is a Likert scale with answer statements ranging from Strongly Agree (5), Agree (4), Disagree (3), Disagree (4), and Strongly Disagree (1). The data analysis technique that will be used in this study is Smart PLS v 4.0 to predict the relationship between one construct and another.

4. RESULTS AND DISCUSSION

4.1 Results

Table 1. Description of Research Respondents

Description	Frequency	Percentage
Gender		
Male	88	88,0
Female	12	12,0
Age		
25-35 years	15	15,0
35-45 years	54	54,0
46 years and over	31	31,0
Education		
Diploma	10	10,0
Masters	1	1,0
Bachelor	86	86,0
High school equivalent	3	3,0
Position		
Head of Branch	15	15,0
Head of Department	6	6,0
Head of Division	7	7,0
Plantation Clerk	18	18,0
Managers	20	20,0
Supervisors	34	34,0
The type of company		
BUMN	21	21,0
Services	11	11,0
Others	3	3,0
Manufacturing	11	11,0
Banking	11	11,0
Private Companies	11	11,0
Restaurants	15	15,0
Coffee Shop	17	17,0
Working Area		
Asahan	11	11,0
Batubara	10	10,0
Labuhanbatu	21	21,0
Labuhanbatu Selatan	11	11,0
Labuhanbatu Utara	18	18,0
Lubuk Pakam	10	10,0
Medan	9	9,0
Pematangsiantar	10	10,0

Source: Processed Data, 2022

4.1.1 Description of Respondents

Based on the distribution of questionnaires online via the Google form, data were obtained regarding the description or profile of the respondents who were tabulated to be used to explain or describe the conditions of the respondents studied. Table 1 is the description data of the respondents studied.

Based on Table 1, the description of the research respondents will be briefly and concisely described, including 1) Based on gender, it was found that the respondents

in this study were dominated by men compared to women. 2) Based on age, it was found that respondents in this study were dominated by ages between 35-45 years. 3) Based on education, it was found that respondents in this study were dominated by undergraduate education. 4) Based on the respondent's position in the company, it was found that the respondent held the position of supervisor, branch head, and plantation clerk. 5) Based on the type of company the respondents in this study found state-owned companies and coffee shops, banking, private companies, manufacturers, and restaurants. 6) Based on the working area of the intended respondents, it shows that eight large cities are sampled in the study, which are dominated by respondents from the working areas of Labuhanbatu and North Labuhanbatu Regencies.

Table 2. Result of Linierity Test

Indicators and Variables	Outer Loadings
X1.1 ≤- Total Quality Management	0.851
X1.2 ≤- Total Quality Management	0.940
X1.3 ≤- Total Quality Management	0.928
X1.4 ≤- Total Quality Management	0.896
X1.5 ≤- Total Quality Management	0.939
X1.6 ≤- Total Quality Management	0.919
X1.7 ≤- Total Quality Management	0.858
X1.8 ≤- Total Quality Management	0.833
Y1.1 ≤- Business Strategy	0.856
Y1.2 ≤- Business Strategy	0.906
Y1.3 ≤- Business Strategy	0.875
Y1.4 ≤- Business Strategy	0.839
Z1.1 ≤- Competitive Advantage	0.851
Z1.2 ≤- Competitive Advantage	0.895
Z1.3 ≤- Competitive Advantage	0.843

Source: Smart PLS Outputs, 2022

The results of data processing with SmartPLS are shown in Table 2. That the majority of the indicators for each variable in this study had a loading factor value greater than 0.70 so it was decided to be valid and meet the requirements of convergent validity. Furthermore, in a good outer model by seeing if the Average Variance Extracted (AVE) value is greater than 0.50, it is stated that it satisfies the outer model test. Based on the acquisition value of the Average Variance Extracted (AVE) in this study, it is known that the Average Variance Extracted (AVE) value of all variables is above 0.50 so it meets the requirements.

Table 3. Average Variance Extracted (AVE) Value

Variable	AVE
Business Strategy	0.756
Competitive Advantage	0.745
Total Quality Management	0.803

Source: Smart PLS Outputs, 2022

The final stage in the outer model test is to pay attention to the value of Cronbach's alpha and composite reliability in the Smart PLS model. The following presents the results of SmartPLS processing below:

Table 4. Output Cronbach's Alpha Dan Composite Reliability

Variables	Alpha	Composite Reliability
Business Strategy	0.892	0.893
Competitive Advantage	0.830	0.838
Total Quality Management	0.965	0.966

Source: Smart PLS Outputs, 2022

From the data in Table 4. The output of Cronbach's Alpha and Composite Reliability of the SmartPLS model in this study shows that the Cronbach's Alpha and Composite Reliability values of all variables are above 0.70 so it is concluded that each variable and estimated model already has good reliability.

4.1.2 Inner Model test

At this stage in the inner model test which is to see the results of R Square presented below:

Table 5. Coefficients^a

Variables	R-Square
Business Strategy	0.752
Competitive Advantage	0.646

Source: Smart PLS Outputs, 2022

Based on the R-square (R2) value in Table 5, it shows that the Total Quality Management (TQM) variable can explain the Business Strategy variable by 0.752 or 75.2%, and the remaining 14.8% is explained by variables outside the study. While the Total Quality Management (TQM) variable can explain the Competitive Advantage variable of 0.646 or 64.6% and the remaining 35.4% is explained by variables outside the study

4.1.3 Hypothesis Test

Hypothesis testing will be carried out based on the results of testing the inner model (structural model) which includes the t-statistical value and the p-value. Rules of thumbs which are a requirement in research if the t-statistic is ≥ 1.96 with a significance p-value less than 0.05 then it is assumed that the hypothesis is accepted or vice versa if the t-statistic is ≤1.96 with a significance p-value greater than 0 .05 then it is assumed that the hypothesis is rejected. The research model described in the study is seen from the bootstrapping results below:

Based on Table 6. The Path Coefficients results show that in the T-Statistics value column all the hypotheses tested are greater than 1.96 with a significance level of p-value less than 0.05 which is then used to prove the results of hypothesis testing in the discussion section.

4.2 Discussion

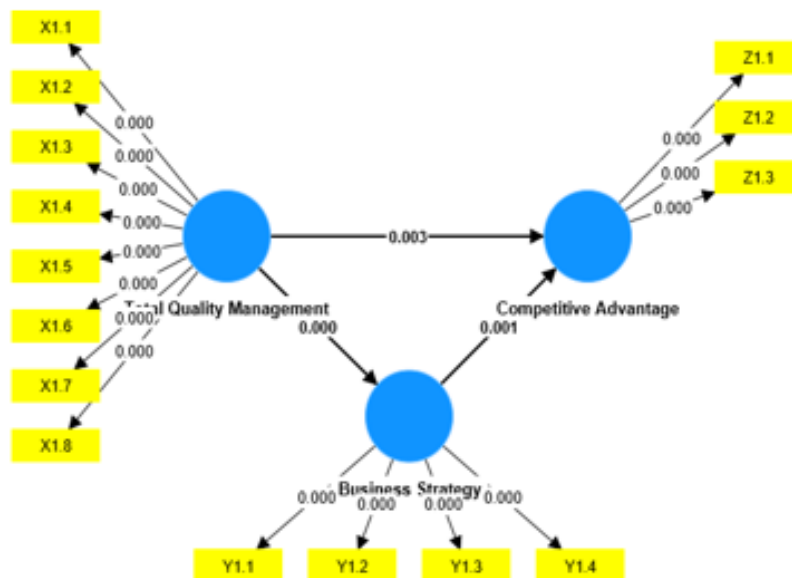Based on the results of hypothesis testing, a detailed discussion will be carried out including:

Figure 2. Output Bootstrapping (Source: Processed Data, 2022)

Table 6. Coefficients[a]

Hypothesis	Original Sample	Sample Mean	SD	T Statiscs	P Values	Description
Total Quality Management -≥ Competitive Advantage	0.388	0.382	0.130	2.992	0.003	Accepted
Total Quality Management -≥ Business Strategy	0.867	0.866	0.027	32.048	0.000	Accepted
Business Strategy -≥ Competitive Advantage	0.445	0.450	0.133	3.341	0.001	Accepted

Source: Smart PLS Outputs, 2022

a. H1: There is a direct relationship between Total Quality Management (TQM) and competitive advantage. From the results of hypothesis testing in Table 6, the t-statistical value of the Total Quality Management (TQM) variable for competitive advantage is $2.992 \geq 1.96$ with a significant p-value of $0.003 \leq 0.05$. This means that it can be stated that the hypothesis in this first study can be accepted. So it can be concluded that Total Quality Management (TQM) has a significant influence on competitive advantage. The results of this study support research conducted by Othman (2020) that Total Quality Management (TQM) is needed to maintain competitive advantage, he added that this is very important for service-oriented banking companies in general, which is the right step. According to Firman & Thabrani (2018) The term competitiveness or competitive advantage does not only grow in business companies but in the public sector because in the field the phenomenon of competition demands innovation according to the changing needs of consumers and the environment. As in this study taking research respondents viewed from various types of companies, this means that this illustrates that the implementation of Total Quality Management (TQM) can be absorbed by various business sectors including plantation companies (BUMN), private oil palm companies, banking, service companies, and others. Same research Nofrizal et al. (2021) that the practice of Total Quality Management (TQM) in companies can in-

crease competitive advantage, he added that the principles and techniques of Total Quality Management (TQM) are now a part that is well received by almost company managers, and several countries have implemented Japan's Total Quality Management (TQM). , United States, Europe, and Australia.

b. H2: There is a direct relationship between Total Quality Management (TQM) business strategy. From the results of hypothesis testing in Table 6, the t-statistical value of the Total Quality Management (TQM) variable for Business Strategy is $32.048 \geq 1.96$ with a significant p-value of $0.000 \leq 0.05$. This means that it can be stated that the hypothesis in this second study can be accepted. So it can be concluded that Total Quality Management (TQM) has a significant influence on Business Strategy. The results of this study support research Risal et al. (2021) that Total Quality Management (TQM) has a positive effect on business management processes, he adds that business processes are part of a business strategy that are interrelated in decision-making. Other research according to Zainal et al. (2016) company business performance including business strategy influences Total Quality Management (TQM), he adds that Total Quality Management (TQM) from an academic perspective helps manufacturing companies, this means that manufacturing companies are one of the most appropriate company to implement Total Quality Management (TQM), this is because a manufacturing company

is a company in which it requires a strong organizational structure. Furthermore, research that closely supports according to Ho & Ho (2011) that Total Quality Management (TQM) should refer to an approach to doing business by maximizing continuous improvement through the quality of products, services, people, processes, and the environment. According to Mary (2021) Total Quality Management (TQM) is a series of ways for organizations to achieve goals today, tomorrow and in the future through the use of strategy, data, and communication so that they become organizational culture and processes.

c. H3: There is a direct relationship between Business Strategy and competitive advantage. From the results of hypothesis testing in Table 6, the t-statistical value of the business strategy variable for competitive advantage is $3.341 \geq 1.96$ with a significant p-value of $0.001 \leq 0.05$. This means that it can be stated that the hypothesis in this third study can be accepted. So it can be concluded that Business Strategy has a significant influence on competitive advantage. So it can be concluded that Business Strategy has a significant influence on competitive advantage. The results of the research support the thinking resulting from research Nurbasari & Harani (2021) he impact of business and market developments provides opportunities to create a wider creative industry leading to competition so that every company is required to increase its competitive advantage through its business strategy. This study proves that the low-cost strategy, differentiation strategy, focus strategy, and leadership strategy are appropriate indicators in measuring the business strategy of manufacturing, banking, and plantation companies and other service companies. According to Wira & Nyoman (2018) in their research market orientation affects competitive advantage, it can be explained that market orientation is a form of continuous response to the demands of customer needs through the development of strategies focused on creating customer value in achieving competitive advantage. Other research Ali & Anwar (2021) also supports the results of this study, he said the dimensions of strategic competitiveness have a positive impact on competitive advantage. So it can be concluded that the business strategy through low-cost strategy, differentiation strategy, focus strategy, and leadership strategy are factors and indicators that can determine the competitive advantage of any company. This is following the explanation Nurbasari & Harani (2021) strategy is a very important tool for achieving competitive advantage through product diversification and product competitiveness.

5. CONCLUSIONS

After conducting the analysis and discussion in this study, several important conclusions were obtained, including:

a. The indicators used in this study adequately support the results of the study.

b. The targeted research respondents were companies through descriptions or profiles of the targeted sample respondents, most of whom were respondents with the positions of supervisors, heads of branches, and plantation clerks so they had a good understanding of the implementation of Total Quality Management (TQM).

c. The results of hypothesis testing as a whole are well received because it has a t-statistic greater than 1.96 and a p-value less than 0.05.

d. The test results have the highest value, namely Total Quality Management (TQM) has a significant effect on Business Strategy with a t-statistic value of $32.048 \geq 1.96$.

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