Influence of TQM on increasing sustainable competitive advantage with transformational leadership as a mediation variable

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ABSTRACT

The objective of this study was to determine and analyze the impact of TQM, Transformational Leadership (TL), and Executive Ability (EA) on improving sustainable competitive advantage (SCA) in MSMEs in Banten Province based on local leading potential. The method of distributing questionnaires is used in this study to collect primary data. This study's population consisted of all owners and managers of MSMEs in Banten Province. In contrast, the sample in this study is formed of the owners and managers of MSMEs of Local Leading Potential in Banten Province. Purposive sampling was being used in study, as well as Warp PLS V. 7.0 and SPSS Version 25 test equipment. The findings of this study were as follows: (1) TQM had a significant positive effect on TL and SCA, but not on EA. (2) TL has a statistically significant positive effect on SCA and EA. (3) EA has a statistically significant positive effect on SCA. (4) TL mediates the effect of TQM on SCA and TQM on EA, and (5) EA does not mediate the effect of TQM on SCA. VAF (Variance Accounted For) has been used to calculate mediation effects.

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Introduction

The economy of Banten Province has experienced a shift from the dominance of the agricultural sector to the industrial sector. However, the role of the agricultural and fishery sectors is still quite important, even though their contribution to Gross Regional Domestic Product (GRDP) continues to shrink because they can absorb labour more than the industrial sector and other sectors. For the agricultural and marine sectors to develop, one field that needs to be developed is the agro-industry. The processing industry of food crops, horticulture and fisheries. Banten province already has several typical food crops commodities, such as palm sugar, melinjo chips and milkfish satay.

In Banten Province, the MSME sector has a major contribution to the Banten economy. Based on data from the Central Statistics Agency (BPS) in 2016, MSMEs contributed 57.65% of the Banten economy (GDP). This figure is the largest among other business units. The existence of SMEs in Banten Province until 2016 was 984,118 SMEs consisting of 823,496 micro business actors, 153,313 small business units and 7,309 medium-level business actors (Banten Cooperatives and UMKM Service, 2017). Banten itself has a variety of local specialities that show the characteristics of Banten's local potential and are different from other regions. However, to date, the development of SMEs, especially the SME sector based on local potential, in Banten Province is still lagging behind other provinces. Whereas the potential of local resources is very large and has a great opportunity to be developed because it will impact the development of other sectors such as tourism. (Rahayuningsih, 2018).

Low productivity and competition are also problems that are still faced by SMEs, which are related to the low quality of human resources for micro-scale businesses and the low entrepreneurial competencies of micro-scale businesses (Susilo, 2005). Then Ismail...
(2016) also explained that SMEs are difficult to develop because of many influencing factors such as human resource competence, ability to access information, limited capital, technology limitations. In addition, SMEs face many obstacles such as product quality, packaging, marketing and promotion strategies that have not been maximized.

The lack of ability to control product quality in Small, Micro, and Medium Enterprises (MSMEs) is due to the limitations of SME business. Because it is difficult to obtain raw materials of standard quality, resulting in non-standard quality products produced by SME entrepreneurs, discussing quality management cannot be separated from Total Quality Management.

Total Quality Management (TQM) is an integrative management philosophy that aims to meet or exceed customer expectations by continuously improving the quality of products/services and processes (Prajogo and McDermott, 2005; Kiella and Golhar, 1997; Baird et al. 2011). TQM, as a management philosophy (Wang, Chen, & Chen, 2012), is an effective way to gain competitive performance in the market (Wang et al., 2012; Ahmad, Zakuan, Jusoh, Yusof, & Takala, 2014; Valmohammadi & Roshanzamir, 2015; Mehralian, Nazari, Zarei, & Rashek, 2016; Pantouvakis & Karakasnaki, 2017). Previous research indicates that some researchers actually focus on single aspects (sub-constructs) of the TQM construct, such as information technology, learning, organizational culture (Valmohammadi & Roshanzamir, 2015) or human talent (Pantouvakis & Karakasnaki, 2017). Most of them are limited to business effects or financial effects (Ahmad et al., 2014), while long-term competitive advantage effects are rarely studied.

Several studies have found that transformational leadership has a positive impact on an organization's long-term competitive advantage (Lee, McLee, & Huang, 2011; Dóci & Hofmans, 2015) and is a requirement for top management to implement TQM. Competent leadership can apply TQM principles to be more effective and capable of producing higher quality products. However, no empirical research has been conducted to determine whether Transformational Leadership and executive abilities mediate Total Quality Management (TQM) and long-term competitive advantage. However, how do TQM, Transformational Leadership, and Executive Capability impact the Long-Term Competitive Advantage of Local Potential-Based MSME Organizations?

The purpose of this research is to determine the relationship between TQM and Sustainable Competitive Advantage, with Transformational Leadership serving as a moderating variable in SMEs based on local potential in Banten Province.

**Literature Review**

**Theoretical and Conceptual Background**

**Total Quality Management (TQM)**

Total Quality Management (TQM) emerged in the early 1980s in the United States, and was later adopted in Japanese by Edward Deming. Good quality, according to Deming's logic, will lead to higher productivity without the need for repetitive work, waste, lower costs, customer complaints, and, ultimately, increased market share. TQM, according to Deming, is a management philosophy that employs a specific set of principles, practices, and techniques to expand a business and increase profits, as well as as a shortcut to increase productivity by avoiding rework, rejection, waste, and high costs associated with customer complaints.

TQM is defined by some researchers as an organizational culture that promotes customer satisfaction through a system of tools, techniques, and exercises. TQM, according to (Sureshchandar, Rajendran, & Kamalanabhan, 2001), improves traditional business practices and incorporates them into managerial philosophy. TQM encompasses organizational perception and culture (Valmohammadi & Roshanzamir, 2015), work techniques and mechanisms (Prakash et al., 2015; Mehralian et al., 2016), as well as processes, practices, and outcomes (Kanji & Wallace, 2000; Ahmad et al., 2014).

**Sustainable Competitive Advantage**

The logic of value creation and distribution supports competitive advantage (Wade & Hulland, 2004). A organization is said to have a competitive advantage if the economic exchange (profit) exceeds the value created (Brandenburger & Stuart, 1996). Sustainability is defined as a condition in which competitors' behavior does not match the company's competitive advantage. The business advantage in 'best' practice is setting direction (Oakland, Tanner, & Gadd, 2002). The preceding opinion defines competitive advantage as the ability to stay ahead of and maintain competition, as well as an understanding that a company's resources and business strategy will impact competitive advantage. TQM is a management philosophy that has been shown to have a significant impact on organizational performance. TQM has become a guideline for businesses seeking a competitive advantage in business competition (Sureshchandar et al., 2001). TQM focuses on continuous process improvement (Wang et al., 2012) and is a tried-and-true technique for ensuring competitive survival. TQM implementation can boost employee morale and work ethic, resulting in increased company efficiency (Lazari & Kanellopoulos, 2007). TQM-related learning entails company-wide training that acquires the organization's value strategy and improves staff skills and service commitment (Claver, José Tar, & Pereira, 2006).

**Transformational Leadership**

Transactional leadership is not the same as transformational leadership (Lee et al., 2011; Dóci & Hofmans, 2015). TL emphasizes a leader's symbolic behavior (e.g., inspirational, visionary messages and values) over economic transactions between leaders and employees (Judge & Piccolo, 2004). Transformational leaders focus on employees paying attention to the group's or organization's
long-term goals and instilling a greater sense of purpose in them (Dvir, Eden, Avolio, & Shamir, 2002; Bono & Judge, 2003). Recent TL research focuses on the effects of employee benefits such as increased well-being, self-efficacy, creativity, job satisfaction, reduced fatigue, emotional exhaustion, and stress (Dóci & Hofmans, 2015). Several studies identify leadership as a promoter of TQM and emphasize the importance of leadership in the success of any effort to change a company’s operational philosophy (Sumukadas, 2006). Top management, according to Anupam Das’ research findings, must emerge when implementing TQM. TQM activities promote the development of TL (Huang & Ingber, 2005).

Conceptual Framework of the Research

The following hypotheses are proposed:

- **H1**: Total Quality Management (TQM) has a positive and significant effect on Transformational Leadership (TL).
- **H2**: Transformational Leadership (TL) has a positive and significant effect on Sustainable Competitive Advantage (SCA).
- **H3**: Total Quality Management (TQM) has a positive and significant effect on Sustainable Competitive Advantage (SCA).
- **H4**: Transformational Leadership (TL) mediates the effect of Total Quality Management (TQM) on Sustainable Competitive Advantage (SCA).

Research and Methodology

Participant and Data Collection

Purposive sampling is used in this study. This study's population consisted of all owners and managers of MSMEs in Banten Province. Simultaneously, the sample in this study consists of the owners and managers of MSMEs with Local Leading Potential in Banten Province. Questionnaires were sent directly to 100 MSMEs beginning on July 5, 2021, with an estimated return time of two weeks (14 calendar days) on July 19, 2021.

Data Analysis

Using Warp Partial Least Square V.7 Software.

Measurement

<table>
<thead>
<tr>
<th>Variable</th>
<th>Constructs Definition</th>
<th>Scale</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Quality Management</td>
<td>Adopt to customer focus, internal/external collaboration, continuous improvement, employee fulfillment, learning and process management</td>
<td>Likert Scale 1 – 7</td>
<td>Wang et al (2012)</td>
</tr>
<tr>
<td>Transformational Leadership I</td>
<td>Leaders have a mission, vision, optimism and enthusiasm, emphasize implementation, and show high concern and initiative</td>
<td>Likert Scale 1 – 7</td>
<td>McFadden et al. (2009)</td>
</tr>
<tr>
<td>Sustainable Competitive Advantage</td>
<td>Directed to win the competition in the best conditions in direction, profit consistency, coordination and feedback</td>
<td>Likert Scale 1 – 7</td>
<td>Doeleman et al. (2012)</td>
</tr>
</tbody>
</table>
Findings

Descriptions of the gender of the respondents, with the majority being filled by women as many as 31 (54.4%) and the rest by men as many as 26 (45.6%). Regarding the age of respondents with the majority age range being under the age of 30 years as 14 (24.6%), the age ranges from 30 to 45 years as many as 21 (36.8%), age range above 45 years as many as 22 (38.6%). Furthermore, the majority of respondents' education levels were at the senior high school level as 35 (61.4%), Diploma as many as 10 (17.5%), with bachelor /master education as many as 12 respondents (21.1%). Regarding the product cluster, the respondents were in the food processing cluster as many as 23 respondents (40.4%), in the clothing, bags and shoe cluster as many as 21 respondents (36.8%) and the souvenir and accessories cluster as many as 13 respondents (22.8%)

Table 2: Outer model, discriminant Validity and Composite Reliability

<table>
<thead>
<tr>
<th>Variable</th>
<th>AVE</th>
<th>Composite Reliability</th>
<th>R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Quality Management (TQM)</td>
<td>0.578</td>
<td>0.900</td>
<td></td>
</tr>
<tr>
<td>Transformational Leadership (TL)</td>
<td>0.523</td>
<td>0.843</td>
<td>0.597</td>
</tr>
<tr>
<td>Sustainable Competitive Advantage (SCA)</td>
<td>0.584</td>
<td>0.902</td>
<td>1.062</td>
</tr>
</tbody>
</table>

Explaining the importance of TQM, TL, and SCA. Each construct (variable) has a value greater than 0.5 AVE. This indicates that each construct has a high validity value for each indicator or questionnaire used to determine the validity of the relationship. Table 1 shows that every construct or latent variable has a composite reliability value greater than 0.7, indicating that the internal consistency of the independent variables (TQM and TL) and the dependent variable (SCA) was reliable. The significance of the estimated parameters provides very useful information about the study's variables' relationship. The limits to reject and accept the hypothesis are 1.96, which means that if the value of the t statistic is greater than the value of the t table (1.96), the hypothesis is accepted; otherwise, if the value of the t statistic is less than the value of the t table (1.96), the hypothesis is rejected. Table 2 shows output estimates for testing the structural model.

Table 3: Path Coefficient, P-value dan Effect Size Full Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>estimate</th>
<th>Effect Size</th>
<th>P-Value</th>
<th>Decision:</th>
</tr>
</thead>
<tbody>
<tr>
<td>TQM -&gt; TL</td>
<td>0.001</td>
<td>0.597</td>
<td>(&lt;0.01)*</td>
<td>H1 Accepted</td>
</tr>
<tr>
<td>TL -&gt; SCA</td>
<td>0.006</td>
<td>0.207</td>
<td>(&lt;0.01)*</td>
<td>H2 Accepted</td>
</tr>
<tr>
<td>TQM -&gt; SCA</td>
<td>0.049</td>
<td>0.144</td>
<td>(&lt;0.05)**</td>
<td>H3 Accepted</td>
</tr>
<tr>
<td>TQM -&gt; TL ∩ SCA</td>
<td>0.251</td>
<td></td>
<td></td>
<td>H4 Accepted</td>
</tr>
</tbody>
</table>

Note:
*P-value <0.01  **P-value <0.05  ***P-value <0.10

Table 3 shows that the resulting path coefficient is 0.001 and that it is significant with a p-value of 0.001 (1%). As a result, hypothesis 1 can be concluded to be correct. With a coefficient of determination of 0.597, TQM has a significant positive effect on Transformational Leadership. The resulting path coefficient is 0.006 and significant with p 0.001 (1%), as shown in Table 2. As a result, we can conclude that hypothesis 2 is correct. With a coefficient of determination of 1.062, this means that Transformational Leadership has a positive and significant effect on Sustainable Competitive Advantage. Furthermore, Table 3 shows that the resulting path coefficient is 0.049 and that it is significant with a p-value of 0.05 (5%). As a result, we can conclude that hypothesis 3 is correct. With a coefficient of determination of 1.062, this means that Total Quality Management has a significant positive effect on Sustainable Competitive Advantage.

Figure 2: Path Analysis Transformational Leadership Mediation

B=0.77 (P<.01)
B=0.30 (P<0.1)
B=0.21 (P=.005)
Table 4: VAF Calculation

|                  |                  | Value  
|------------------|------------------|---------
| Indirect Effect  | 0.77 * 0.30      | 0.231   |
| (TQM -> TL = 0.77; TL -> SCA = 0.30) |                  |         |
| Direct Effect    | (TQM -> SCA; without including TL as a mediator = 0.69) | 0.690   |
| Total Effect     | 0.231 + 0.69 = 0.555 | 0.921   |
| VAF              | indirect effect / total effect = 0.231 / 0.921 | 0.251   |

Table 3 calculates the VAF value as a test of Transformational Leadership (TL) as a mediator of the relationship between Total Quality Management (TQM) and Sustainable Competitive Advantage (SCA). The Variance Accounted For (VAF) calculation results show a value of 0.251 for the TQM-TL-SCA.

**Discussion**

*The positive effect of TQM and TL*

Hypothesis 1 has been accepted. This means that TQM has a significant positive effect on Transformational Leadership; this is consistent with (Sureshchandar, Rajendran, & Kamalanabhan, 2001), who states that TQM is an improvement in the traditional way of doing business and makes it part of the managerial philosophy, and TOM-linked learning involves company-wide training that acquires strategic value for organizations (Claver, José Tar, & Pereira, 2006) and improves the staff's skill level and

*The positive effect of TL and SCA*

Hypothesis 2 has been accepted. This implies that TL has a significant positive effect on SCA; this is consistent with Chen et al. (2018), who state that transformational leaders can inspire followers to change their expectations, perceptions, and motivations, allowing them to work toward common goals and achieve superior performance.

*The positive effect of TQM and SCA*

Hypothesis 3 has been accepted. According to Sureshchandar et al. (2001), TQM has a significant positive effect on SCA. TQM has become the critical slogan when a corporate pursue competitive advantage in competition. TQM is concerned with continuous process improvement (Wang et al., 2012)

*TL mediates the influence between TQM and SCA*

Hypothesis 4 has been accepted, that TL mediates the relationship between TQM and SCA, is accepted. The TQM-TL-SCA path's Variance Accounted For (VAF) calculation yields a value of 0.251. This value demonstrates Transformational Leadership (TL) as a partial mediator; transformational leaders direct employees' attention to the group's or organization's long-term goals and instil in them a sense of higher purpose (Dvir, Eden, Avolio, & Shamir, 2002; Bono & Judge, 2003). Recent research on TL has focused on the positive effects on employees, such as increased well-being, self-efficacy, creativity, job satisfaction, decreased burnout, emotional exhaustion, and stress (Dóci & Hofmans, 2015).

**Conclusion**

The findings of this study are as follows: (1) TQM has a significant positive effect on TL and SCA, but not on EA. (2) TL has a statistically significant positive effect on SCA and EA. (3) EA has a statistically significant positive effect on SCA. (4) TL mediates the effect of TQM on SCA and TQM on EA, and (5) EA does not mediate the effect of TQM on SCA.

Further research can be carried out in areas Banten, which have a wider area, a larger population, and an estimated number of more SME. Further research can also add other variables that have not been used in this research, such as kemampuan manajemen, dan indicator yang lain. This research in the future still needs to be enriched by increasing the number of respondents used as research samples, because the larger the number of research samples is expected to provide better research results.

**Author Contributions:** Conceptualization, M.M., M.T.; Methodology, M.M., M.T.; Data Collection, M.M., M.T.; Formal Analysis, M.M., M.T.; Writing—Original Draft Preparation, M.M., M.T.; Writing—Review And Editing, M.M., M.T.; All authors have read and agreed to the published the final version of the manuscript.

**Institutional Review Board Statement:** Ethical review and approval were waived for this study, due to that the research does not deal with vulnerable groups or sensitive issues.

**Data Availability Statement:** The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy.

**Conflicts of Interest:** The authors declare no conflict of interest.
References


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