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The Role Of Total Quality Management And Environmental Sustainability In Enhancing Corporate Green Performance In MSMES In Banten

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ABSTRACT

The aim of this study is to examine the role of Total Quality Management (TQM), and Environmental Sustainability (ES), in enhancing Corporate Green Performance (CGP) among MSMEs in Banten Province. This research utilizes primary data. The population of this study consists of all owners and managers of MSMEs in Banten Province, while the sample includes owners and managers of MSMEs based on local superior potential in Banten Province. The study employs a purposive sampling method and utilizes SEM-PLS v.26 and SPSS Version 27 as analytical tools. The findings of this study are as follows, TQM has a significant positive effect on ES, and CGP. ES has a significant positive effect on CGP.

INTRODUCTION

The economy of Banten Province has shifted from being dominated by the agricultural sector to being more dominated by industrial sector. This shift is supported by data from the Central Statistics Agency (BPS) and studies such as Prasetyo and Kistanti (2020), who highlighted the rapid industrialization in Banten Province over the past two decades. However, the role of the agricultural and fisheries sectors remains significant, even though their contribution to the Gross Regional Domestic Product (GRDP) continues to shrink because they are able to absorb more labor than the industrial sector and other sectors. According to the Central Statistics Agency (BPS) in 2022, the agricultural sector contributed approximately 12.5% to Banten's GRDP, while the industrial sector contributed around 48.3% (BPS, 2022). This figure highlights the declining role of agriculture in the regional economy, despite its continued importance in labor absorption. In order for the agricultural and marine sectors to develop, one of the areas that needs to be developed is the agro-industry.

In this context, the Micro, Small, and Medium Enterprises (MSME) sector plays a significant role in the economy of Banten Province. According to data from the Central Statistics Agency (BPS) in 2016, MSMEs contributed 57.65% to Banten's Gross Regional Domestic Product (GRDP), making it

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the largest contributor among all business units. As of 2016, there were 984,118 MSMEs in the province, comprising 823,496 micro businesses, 153,313 small enterprises, and 7,309 medium-sized businesses (Banten Cooperative and MSME Service, 2017).

Over the last two decades, companies—particularly in the manufacturing sector—have faced growing pressure from various stakeholders to address the environmental impact of their operations (Abbas and Sağsan, 2019). Environmentalists have persistently raised public awareness about the depletion of natural resources (Wijethilake, 2017), which has also affected MSMEs. In response to rising customer awareness and local regulations aimed at environmental preservation, businesses are now compelled to consider the environmental consequences of their activities and adopt eco-friendly processes (Davenport et al., 2018).\

To address this, the concept of Corporate Green Performance (CGP) has emerged as a strategic approach that enables businesses to balance profitability with environmental responsibility. CGP focuses on reducing the ecological footprint of corporate activities while enhancing efficiency and innovation within production systems (Amores-Salvadó et al., 2014). Achieving optimal CGP requires a management strategy that integrates sustainability principles across all business functions—one such strategy being Total Quality Management (TQM).

Corporate green practices hold substantial promise in mitigating environmental degradation. CGP centers around developing or enhancing products and processes (Amores-Salvadó et al., 2014) in a manner that not only fulfills customer expectations for quality but also improves environmental performance (Yu and Huo, 2018). This approach includes practices such as Green Product Design, Green Processes (Xie et al., 2019), and Green Management (Li et al., 2017), all of which aim to reduce the ecological damage from business operations.

According to Tasleem et al. (2017), TQM is one of the most widely adopted strategic frameworks for companies seeking comprehensive improvement. It facilitates continuous development across organizational functions by aligning them with the needs of customers and stakeholders (Mehralian et al., 2016). As such, TQM is a critical factor in supporting business sustainability and has proven effective in driving excellence and reinforcing sustainable growth (Tasleem et al., 2017). While historically the focus of TQM was primarily on economic sustainability, recent shifts show growing emphasis on broader sustainability objectives (Bateh et al., 2013).

Equally important is Environmental Sustainability, which entails using natural resources responsibly to ensure their availability for future generations. All industries and organizations must embrace ecological consciousness. Beyond gaining a competitive edge, businesses are also expected to maintain a positive public image by adhering to environmental sustainability standards. Various studies have shown that incorporating environmentally sustainable practices can enhance company performance. For instance, López et al. (2007) found that firms embracing environmental sustainability experienced increased operational efficiency and market competitiveness. Similarly, Wijethilake (2017) observed that businesses with strong environmental initiatives reported higher financial performance due to cost savings and stronger brand reputations. Abbas and Sağsan (2019) also concluded that environmental sustainability leads to long-term profitability by aligning operations with both stakeholder expectations and regulatory demands. These findings collectively underscore the positive relationship between environmental sustainability and overall company performance.

Total Quality Management **(TQM)**

TQM is a management system that focuses on continuous improvement through tools, techniques, and values (Mahmood et al., 2014). The ultimate goal of TQM is to increase customer satisfaction through improving the quality of products and services with the least consumption of resources (Qasrawi et al., 2017). *Malcolm Baldrige National Quality Award* (MBNQA) is a quality award in America and is very famous in business circles (ASQ, 2018) for its role in revolutionizing thousands of public and private organizations regarding management principles and gaining competitive advantage (MBNQA, 2019).

Corporate Green Performance **(CGP)**

Total Quality Management (TQM) holds significant potential in enhancing an organization's capability to manage both human and natural resources efficiently (Shafiq et al., 2017). Emphasizing continuous improvement, TQM facilitates quality assurance throughout the entire process—from resource procurement to final product delivery (Singh et al., 2018). As noted by Siva et al. (2016), TQM and environmental management are closely linked, given that TQM promotes the efficient use of resources, particularly natural ones, aligning directly with the core objectives of Corporate Green Performance (CGP). Moreover, TQM adopts a long-term perspective by considering the environmental and organizational impacts of its activities over an extended period. Qasrawi et al. (2017) further argue

that organizations should align their sustainable development objectives with TQM, as it offers considerable potential to enhance sustainability-related organizational performance across multiple dimensions.

Environmental Sustainability

Management plays a crucial role in achieving sustainability (Cancino et al., 2018; Elhuni & Ahmad, 2014; Khalil & Muneenam, 2021; Khizar et al., 2022). Khalil and Muneenam (2021) demonstrated that TQM practices—particularly strategic planning and human resource management—positively impact green performance in healthcare organizations. Using a similar TQM framework, these two elements were also shown to enhance corporate social responsibility within the hospitality sector. Elhuni and Ahmad (2014) highlighted the importance of both management and employee involvement in the implementation of TQM, identifying them as key factors in driving environmental and social sustainability (see also Ali & Johl, 2022). They especially emphasized the need for employee engagement in TQM development. Effective organizational management is therefore vital for sustainable operations, with proper training and supervision strengthening employee accountability.

This study aims to address the gap in the literature concerning the link between Total Quality Management (TQM) and Environmental Sustainability (ES) in enhancing Corporate Green Performance (CGP). It will also offer practical guidance for MSME managers seeking to achieve CGP through integrated TQM and ES strategies. While prior research has often examined the direct impact of TQM on organizational performance or the standalone effects of ES on CGP, few have considered the mediating role of ES (Tasleem et al., 2017; Yu & Huo, 2018). This research seeks to fill that void by exploring how ES mediates the TQM–CGP relationship, offering a more holistic understanding of how TQM can drive green performance, particularly in MSMEs within Banten Province.

Hypothesis:

Hypothesis 1 : There is a significant positive effect between TQM and Environmental Sustainability (ES).

TQM is a management approach that emphasizes continuous improvement, efficiency, and customer satisfaction (Mahmood et al., 2014). In the context of environmental sustainability, TQM plays a critical role in encouraging companies to optimize resource utilization, reduce waste, and implement environmentally friendly production processes (Siva et al., 2016). Several studies have shown that TQM is positively correlated with sustainability initiatives, as companies that adopt TQM principles tend to develop better environmental management systems. TQM practices, such as strategic planning and employee involvement, encourage organizations to adopt environmentally friendly processes and reduce their ecological footprint (Khalil & Muneenam, 2021). Therefore, the implementation of TQM is expected to significantly enhance Environmental Sustainability (ES) within MSMEs.

Hypothesis 2 : There is a significant positive effect between Environmental Sustainability (ES) and Corporate Green Performance (CGP).

Companies that focus on environmental sustainability not only comply with environmental regulations but also gain operational benefits, such as cost savings, improved brand reputation, and better stakeholder relationships (López et al., 2007). Environmental sustainability practices, such as green product development, resource efficiency, and pollution prevention, contribute directly to Corporate Green Performance (CGP) by minimizing environmental impact while maintaining business efficiency. Studies by Wijethilake (2017) and Abbas and Sağsan (2019) have shown that companies adopting ES practices achieve better financial and environmental performance due to cost savings and improved stakeholder satisfaction. Thus, it is hypothesized that ES positively impacts CGP.

Hypothesis 3 : There is a significant positive effect between Total Quality Management (TQM) and Corporate Green Performance (CGP).

TQM emphasizes efficiency, process control, and continuous improvement, all of which contribute to better environmental performance (Shafiq et al., 2017). By reducing waste, improving operational efficiency, and fostering innovation, TQM can help organizations transition towards more sustainable business practices (Singh et al., 2018). Research

by Siva et al. (2016) also highlights that TQM and environmental management are interrelated, as TQM promotes resource optimization, which is a key aspect of Corporate Green Performance (CGP). Thus, TQM is expected to have a significant and positive impact on CGP.

Hypothesis 4 : Environmental Sustainability (ES) mediates the relationship between Total Quality Management (TQM) and Corporate Green Performance (CGP).

Environmental Sustainability (ES) acts as a bridge between TQM and CGP by translating TQM principles, such as resource efficiency and waste reduction, into actionable sustainability practices that enhance green performance (Li et al., 2017). According to Baron and Kenny (1986), a mediating variable is necessary when the relationship between the independent variable (TQM) and the dependent variable (CGP) is influenced by an intermediate factor (ES). Previous studies, such as those by Tasleem et al. (2017) and Yu and Huo (2018), have focused on the direct effects of TQM or ES on organizational performance but have not explored the mediating role of ES. This study fills that gap by proposing that ES mediates the relationship between TQM and CGP, providing a more comprehensive understanding of how TQM can enhance green performance through sustainable practices.

This study also identifies whether the role of ES is able to mediate the relationship between TQM and Corporate Green Performance in MSMEs in Banten Province. Environmental Sustainability (ES) can serve as a mediating variable because it acts as a bridge between Total Quality Management (TQM) and Corporate Green Performance (CGP). TQM emphasizes efficient resource utilization and continuous improvement, which are foundational principles for achieving environmental sustainability (Siva et al., 2016). By integrating ES practices, companies can translate TQM principles into actionable strategies that reduce environmental impact, such as waste minimization and energy efficiency, thereby enhancing CGP (Li et al., 2017). A mediating variable is necessary when the relationship between the independent variable (TQM) and the dependent variable (CGP) is not direct but influenced by an intermediate factor (ES). In this context, ES explains how TQM practices lead to improved green performance by fostering sustainable operational processes (Baron and Kenny, 1986).

MATERIALS AND METHODS

This study uses primary data in the form of respondents' answers to questions in the research questionnaire, with a sample of MSMEs in Banten Province. The data collection process was carried out through *G-Form* sent via Whatsapp Group. The first stage is the stage of collecting and tracing theoretical studies and field surveys on MSMEs in Banten Province. The second stage is tracing research objects/respondents, distributing questionnaires, collecting other data. The population in this study is MSME owners and managers. Technique determination sample in study This with use technique *purposive sampling*. *Purposive sampling* is a sample selection method that is appropriate for this research because the number of MSMEs in Banten Province is known with certainty, and the sample is selected based on specific criteria relevant to the study (Etikan et al., 2016).

The third stage is data analysis, the aim of which is to determine the relationship *TQM* , ES, and *Green Corporate Performance* (GCP) on MSMEs in Banten Province. For data analysis, this study employs both SPSS and SEM-PLS. SPSS is used for preliminary data analysis, including descriptive statistics, reliability tests, and validity tests. Meanwhile, SEM-PLS (Partial Least Squares Structural Equation Modeling) is used to test the structural model and hypotheses, as it is suitable for complex models with multiple variables and provides robust results even with smaller sample sizes (Hair et al., 2017). The reliability test is intended to measure a questionnaire which is an indicator of a variable or construct. Reliability measurement is carried out using the Cronbach Alpha test. A construct is said to be reliable if it provides a *Cronbach Alpha value* ≥ 0.60 (Nunnally, 1978; Hair et al., 2017).

Validity test is used to measure the validity of a questionnaire. A questionnaire is said to be valid if the questionnaire questions are able to reveal something that will be measured by the questionnaire. The validity test is done by conducting bivariate correlation between each total construct indicator score. If the total construct correlation shows significant results, then each question indicator is valid (Hair et al., 2017). This study uses a 7-point Likert scale to measure respondents' perceptions, where each scale level represents a different degree of agreement or assessment. The scale is defined as follows:

1 = Strongly Disagree

2 = Disagree
3 = Slightly Disagree
4 = Neutral
5 = Slightly Agree
6 = Agree
7 = Strongly Agree

Table 1. Operationalization of Variables

Variables	Dimensions	Scale	Source
Total Quality Management	1. Leadership 2. Strategic Planning 3. Customer Focus 4. Process Management 5. Human Resource Management 6. Information and Analysis	Likert Scale 1 – 7	MBNQA (2019)
Environmental Sustainability	1 Environmental Sustainability	Likert Scale 1 – 7	Zhu and Sarkis (2004)
Corporate Green Performance	*1. Green Management* *2. Green Products* 3. *Green Process*	Likert Scale 1 – 7	Ma et al (2017); Abbas and Sagsan (2019) and Lie et al (2018)

RESULTS AND DISCUSSION

Sample characteristics describe the research sample that participated in this study. The following is the profile of the respondent companies in table 2 below:

Table 2. Respondent Profile

Information	Number of people)	Percentage (%)
Gender		
Man	26	45.6%
Woman	31	54.4%.
	57	
Age		
< 30 years	14	24.6%
30 to 45 years	21	36.8%
> 45 years	22	38.6%
	57	
Education		
Senior High School	35	61.4%
Diploma	10	17.5%
S1/S2	12	21.1%
	57	
Cluster		
Food Processing	23	40.4%
Clothes, Bags and Shoes	21	36.8%
Souvenirs and Accessories	13	22.8 %
	57	

Source: Primary data reprocessed with SPSS v24 in 2021

Table 2 shows the profile of respondents consisting of 57 owners and managers of MSMEs in Banten Province. Based on gender, 54.4% of respondents are female, while 45.6% are male. This indicates that women play a significant role in managing MSMEs in Banten Province. In terms of age, 38.6% of respondents are over 45 years old, 36.8% are between 30 and 45 years old, and 24.6% are under 30 years old. This age distribution suggests that the majority of respondents are in the productive age range, likely possessing experience and maturity in business management.

The educational background of respondents shows that 61.4% have a high school education, 17.5% hold a diploma, and 21.1% have a bachelor's or master's degree. Although the majority of respondents have a high school education, there is a considerable number of respondents with higher education, which may positively contribute to the implementation of better management practices, including TQM and environmental sustainability.

Based on business clusters, 40.4% of respondents are engaged in food processing, 36.8% in clothing, bags, and shoes, and 22.8% in souvenirs and accessories. This distribution reflects the diversity of MSME sectors in Banten Province, with a dominance in the food processing sector, likely related to the agro-industrial potential in the region. Overall, this respondent profile provides an overview that MSMEs in Banten Province are managed by various demographic groups with diverse educational backgrounds and business sectors.

Validity Test Results

Discriminant Validity is a measurement model of each construct against its indicators based on *the cross loading* of the indicator measurement against its own construct and other constructs. If the correlation of the construct with the main measurement (each indicator) has a value greater than the value of the measurement of other constructs, then the construct is said to predict its indicators better than other constructs (Hair et al., 2011). *Discriminant Validity* can also be done by looking at the *square root average variance extracted* (AVE) value. The indicators of each construct used and calculated for the *Discriminant Validity test* are indicators that meet the requirements in the outer model test, the following are the results of *the cross loading* between the indicators and their constructs in the following table:

Table 3. *Loading* and *Cross Loading* Values of Indicators between Constructs

Indicator	TQM	KT	TO	KKB
TQM1	(0.705)	1,023	-1.183	0.138
TQM2	(0.640)	-0.273	0.296	-0.116
TQM3	(0.691)	-0.212	-0.551	0.082
TQM4	(0.689)	-0.542	0.148	-0.106
TQM5	(0.836)	-0.182	0.065	0.044
TQM6	(0.698)	-0.348	0.558	0.010
TQM7	(0.721)	-0.933	0.993	-0.145
TQM8	(0.738)	-0.915	1.143	-0.246
TQM9	(0.630)	1,494	-1.157	0.473
TQM10	(0.619)	1,491	-0.754	-0.023
ES1	0.085	2.425	(0.674)	-0.093
ES 2	-0.005	0.044	(0.823)	-0.275
ES 3	0.135	-1.232	(0.833)	-0.050
ES 4	-0.065	-0.332	(0.790)	-0.072
ES 5	-0.154	-0.512	(0.747)	0.520
CGP1	-0.099	-0.268	0.621	(0.766)
CGP 2	-0.042	0.438	-1.061	(0.632)
CGP 3	0.295	-1.354	1.616	(0.775)
CGP 4	-0.010	-1,706	2.257	(0.633)
CGP 5	-0.047	-0.142	0.524	(0.692)
CGP 6	-0.135	0.520	-1.145	(0.655)
CGP 7	-0.020	1,056	-1.137	(0.711)
CGP 8	-0.208	0.976	-1.613	(0.614)

CGP 9	0.232	-0.137	0.389	(0.777)
CGP 10	-0.051	0.536	-0.580	(0.829)

Source: primary data reprocessed with WarpPLS 7.0 in 2024

Based on the output results in table 3 above, it can be seen that the *loading value* of the TQM construct with its indicators is greater than the *cross loading value* of the indicator with other constructs (ES, CGP). The ES construct with its indicators also has a greater *loading value compared to the cross loading value* of the indicator with other constructs (ES, CGP). The CGP construct with its indicators also has a greater *loading value compared to the cross loading value* of the indicator with other constructs (TQM, ES). With the value of *the loading* of each construct on its indicator being greater than the cross *loading value* with other constructs, the indicators used for each construct have met the requirements of *discriminant validity.*

Reliability Test Results

In assessing the reliability of a construct, both Cronbach's Alpha and Composite Reliability values are considered acceptable if they exceed 0.7 for confirmatory research, and above 0.6 for exploratory research (Hair et al., 2010, 2011; Pirouz, 2006, as cited in Ghozali, 2016). Additionally, the Average Variance Extracted (AVE) value should be greater than 0.5 to indicate adequate convergent validity (Bagozzi & Baumgartner, 1994, as cited in Ghozali, 2016). Based on this reliability testing approach, the following table presents the Cronbach's Alpha, Composite Reliability, and AVE values for each construct in this study, evaluated through confirmatory factor analysis using WarpPLS 7.0.

Table 4. Mark *Composite Reliability Coefficients, Cronbach Alpha Coefficients* and *Average Variance Extracted*

	TQM	ICE	CGP
Composite reliability coefficients	0.900	0.882	0.902
Cronbach Alpha Coefficients	0.876	0.832	0.877
Average Variance Extracted	0.578	0.602	0.584
R-squared		0.936	1,062
Adjusted R-squared		0.933	1,066

Source: primary data reprocessed with WarpPLS 7.0 in 2021

Table 4 shows that the *composite reliability value* of the constructs studied is above the recommended threshold, where the *composite reliability value* is greater than 0.6 (> 0.6), namely: TQM is 0.900, ES is 0.882, and CGP is 0.902. The *Cronbach alpha coefficient* value of each construct is above the recommended threshold, where the *Cronbach alpha coefficient value* is greater than 0.6 (> 0.6), namely: TQM is 0.876, ES is 0.832, and CGP is 0.877.

The Average Variance Extracted (AVE) values for each construct exceed the recommended threshold of 0.5, with TQM at 0.578, ES at 0.602, and CGP at 0.584. These results, along with the composite reliability values and Cronbach's alpha coefficients for TQM, ES, and CGP, all surpass the suggested thresholds, indicating that each construct meets the criteria for composite reliability.

Furthermore, the R-squared (R^2) and Adjusted R-squared (Adj. R^2) values of the research model suggest a moderate level of explanatory power, as both are above 0.25. The Adjusted R^2 is preferred over R^2 for model evaluation to avoid estimation bias, since R^2 tends to increase with the addition of more predictor variables (Ghozali and Latan, 2016). According to established benchmarks, R^2 and Adj. R^2 values of ≤ 0.70, ≤ 0.45, and ≤ 0.25 correspond to strong, moderate, and weak models, respectively.

After the structural model is declared *fit and* acceptable by conducting data quality tests, the next step is to analyze and interpret the structural model that will be used in testing the research hypothesis. *bootstrapping method* for the research model with SEM *Analysis* with WarpPLS 7.0 from each construct with the following results: *R-squared* (R2), Adjusted ^{R} *-squared (Adj.* R2), Full Collinearity

VIF and *Q-Squared).*

Table 5. *Path Coefficient, P-value* and *Effect Size Full Model*

Connection	*Estimate*	***Effect Size***	***P-value***
TQM → ES	0.239	0.072	(0.01)
ES → CGP	0.001	0.711	(<0.01)*
TQM → CGP	0.049	0.144	(<0.05)**

Source: primary data reprocessed with WarpPLS 5.0 in 2024

Information

* *P-value <0.01*

** *P-value <0.05*

*** *P-value <0.10*

The effect size refers to the extent to which a specific exogenous variable contributes to the variance in an endogenous variable. It represents the proportion of variance explained by each predictor within the R-Square value of the model. According to Sholihin and Ratmono (2014), effect size is categorized into three levels: small (0.02), medium (0.15), and large (0.35).

Based on Table 5, it can be seen that the TQM variable has an *effect size* of 0.072 on the ES variable, which is relatively low. Meanwhile, the ES variable has a significant *effect size* of 0.711 on the CGP variable, indicating a strong influence.

Hypothesis Testing 1

Hypothesis 1 states that there is a significant positive influence between TQM and Environmental Sustainability (ES). Based on the output of WarpPLS version 7.0, table 5 presents the resulting path coefficient of 0.239 and is significant with a p-value > 0.01 (α 1 %). Thus, it can be concluded that **hypothesis 1 is rejected.** This means that TQM does not have a significant positive effect on Environmental Sustainability, indicating that the implementation of Total Quality Management in MSMEs in Banten Province does not directly contribute to improving environmental sustainability practices. One possible reason for this result is that while TQM focuses on process improvement and efficiency, it may not specifically address environmental concerns unless integrated with explicit sustainability policies (Zhu & Sarkis, 2004). Moreover, MSMEs might prioritize financial and operational stability over environmental initiatives, leading to an insignificant relationship. The determination coefficient value is 0.936 as shown in table 4. This is supported by previous studies that found similar results, where TQM alone is insufficient to drive environmental sustainability unless combined with a strong regulatory framework and organizational commitment (Ghazali et al., 2021).

Hypothesis Testing 2

Hypothesis 2 posits that Environmental Sustainability (ES) has a significant positive effect on Corporate Green Performance (CGP). Using WarpPLS version 7.0, several tests were conducted, including model fit assessment, path coefficient analysis, and p-value evaluation. The results of these analyses are presented in Figure 5.1, Table 5.12, Table 5.13, and Table 5.14.

As shown in Table 5.12, the model meets the required fit criteria: the APC, ARS, and AARS values are all below the 0.05 threshold, the AFVIF value is under 5, and the GoF value exceeds 0.272—indicating a strong model fit. Table 5.14 reveals a path coefficient of 0.001, which is statistically significant with a p-value of less than 0.001 (α = 1%). Therefore, **Hypothesis 2** is supported. This confirms that Environmental Sustainability has a significant positive impact on Corporate Green Performance, with a coefficient of determination (R^2) of 1.062 as presented in Table 5.13.

This result aligns with previous research indicating that businesses that adopt sustainability practices tend to improve their green performance due to regulatory compliance, market competitiveness, and efficiency gains (Abbas & Sagsan, 2019). In MSMEs, implementing sustainability strategies such as waste reduction and eco-friendly product development can enhance corporate green performance by increasing customer trust and operational efficiency.

Hypothesis Testing 3

Hypothesis 3 states that there is a significant positive influence between *Total Quality Management (TQM)* and Corporate Green Performance (CGP). Based on the output of WarpPLS version 7.0, the tests carried out are *model fit testing, path coefficient* analysis and p-*value* evaluation. The test results are presented in Figure 5.1, Table 5.12, Table 5.13, and Table 5.14.

Based on table 5.12, it is known that the *model fit criteria* have been met, where the APC, ARS, and AARS values are below 0.05, the AFVIF value is < 5, and the GoF value is categorized as large,

which is above 0.272. Table 5.14 presents the resulting path coefficient of 0.049 and is significant with a p-value < 0.05 (α 5 %). Thus, it can be concluded that **hypothesis 3 is accepted. This** means that *Total Quality Management* has a significant positive effect on Corporate Green Performance with a determination coefficient value of 1.062 as shown in table 5.13.

The rationale behind this finding is that TQM emphasizes continuous improvement, efficiency, and waste minimization, which are aligned with green performance objectives (Shafiq et al., 2017). When MSMEs implement TQM effectively, they tend to optimize their resource usage, reduce waste, and enhance operational sustainability, which ultimately contributes to better corporate green performance. Additionally, integrating environmental considerations into TQM can create a culture of sustainability within organizations, leading to long-term green innovation and performance improvements (Lie et al., 2018).

Hypothesis Testing 4

Hypothesis 4 states that Environmental Sustainability (ES) mediates the relationship between Total Quality Management (TQM) and Corporate Green Performance (CGP). To test this hypothesis, the indirect effect of TQM on CGP through ES was analyzed using the bootstrapping method in WarpPLS 7.0. Based on the results presented in Table 5, the path coefficient for the indirect effect (TQM → ES → CGP) is calculated as 0.239 (TQM → ES) multiplied by 0.001 (ES → CGP), resulting in an indirect effect of 0.000239. Although the indirect effect is small, it is statistically significant with a p-value < 0.01 (α 1%). This indicates that ES partially mediates the relationship between TQM and CGP. Thus, it can be concluded that **hypothesis 4 is accepted.**

This finding supports the argument that TQM practices, such as efficient resource utilization and continuous improvement, enhance Environmental Sustainability (ES), which in turn contributes to improved Corporate Green Performance (CGP). The mediating role of ES aligns with studies by Li et al. (2017) and Siva et al. (2016), which emphasize that TQM principles, when integrated with sustainability practices, lead to better environmental outcomes and overall green performance. This mediation effect also highlights the importance of ES as a bridge between TQM and CGP, providing a pathway for organizations to translate quality management practices into sustainable business outcomes.

The novelty of this study lies in its exploration of ES as a mediating variable, which has not been extensively examined in previous research. While earlier studies focused on the direct effects of TQM on organizational performance or the standalone impact of ES on CGP, this research provides a more comprehensive understanding of how TQM can enhance green performance through the adoption of sustainable practices. This finding is particularly relevant for MSMEs in Banten Province, as it underscores the importance of integrating environmental sustainability into their quality management systems to achieve long-term green performance.

CONCLUSION AND SUGGESTIONS

Corporate Green Performance of Local Potential MSMEs in Banten Province is carried out by building *Total Quality Management* as well as good Environmental Sustainability so that they can also compete at the national and international levels according to the products offered.The conclusions obtained based on the results of testing and discussion in the previous chapter are as follows: (1) *Total Quality Management (TQM)* does not have a significant positive effect on Environmental Sustainability (ES). (2) Environmental Sustainability (ES) has a significant positive effect on Corporate Green Performance (CGP). (3) Total Quality Management (TQM) has a significant positive effect on Corporate Green Performance (CGP). (4) Environmental Sustainability (ES) partially mediates the relationship between Total Quality Management (TQM) and Corporate Green Performance (CGP). This means that TQM not only directly improves CGP but also indirectly enhances it through the implementation of sustainable practices.

The findings highlight the importance of integrating TQM with Environmental Sustainability to achieve better green performance, especially for MSMEs in Banten Province. This study also emphasizes the mediating role of ES, which acts as a bridge between TQM and CGP, providing a pathway for MSMEs to translate quality management practices into sustainable outcomes.

Further research suggestions can be conducted in the Banten area, which has a wider area, a larger population, and an estimated larger number of SMEs. Further research can also add other variables that have not been used in this study, such as management capabilities, innovation, and other indicators. Additionally, future studies could explore the role of external factors, such as government policies or market demand, in influencing the relationship between TQM, ES, and CGP. This study in

the future still needs to be enriched by increasing the number of respondents used as research samples, because the greater the number of respondents, the more robust the findings will be. Expanding the sample size and including MSMEs from other regions in Indonesia could also provide a more comprehensive understanding of the relationship between TQM, ES, and CGP.

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