Creating Model of Sustainable Performance based Green Management System on the Small and Medium Enterprises

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Abstract

The aims of this paper is to analyze the effect of the relationship between knowl-edge and on green management and its implication on competitive advantage and sustainable performannce. This study used a quantitative research approach that explains the phenomenon by collecting numerical data analyzed using structural equation modelling (SEM) with the WarpPLS program application. The popula-tion in this study were small or medium business owners (general managers) in the industrial sector in the city of Semarang. Knowledge and green management have a significant effect on competitive advantages and competitive advantages has a significant effect on the sustainability performance. It means that the knowledge and green management simultaneously shows a significant effect on competitive advantages and sustainability performance. The application of green management will also improve sustainability performance. The originality of this study is on the testing of simultaneous relationships between the factors making up the application of green management, namely knowledge as well as the impact of green manage-ment implementation on sustainability performance.

INTRODUCTION

Environmental problems, nowadays, have become problems that occur in almost all over the world. Many businesspeople around the world have exploited natural resources on a large scale. One of the long-term impacts of this event is the scarcity of various natural raw materials and en-vironmental damage. Besides that, environmental pollution due to business activities that are not fri-endly to the environment will also in the long term reduce the quality of human life today.

Thus, at this time, building a green business is no longer an image but has become a necessity if a company wants to remain profitable and live a long life. Only green companies can handle busi-ness turbulence no matter how hard. This is becau-se the existence of a green business will continue to be maintained by all its stakeholders: emplo-yees, consumers, communities, suppliers, govern-ment, and even non-governmental organizations.

Only companies that care about the environment can expect their business to last and be more loved by their consumers.

The results of a survey by Nielsen (2014) found that the world community today demands that products not only have quality but also be safe and friendly to the environment. Nielson (2014) found that around 56 percent of global (consu-mer) respondents said that they always ensure that the products/ brands they buy are committed to good social and environmental impacts. One of the main motivations to be responsible for the en-vironment is competition (Bansal & Roth, 2000). There has been a lot of evidence showing that improvements in the management of the business environment can have an impact on creating mu-tual benefits for small-scale businesses in terms of reducing waste, cost saving, increasing customer satisfaction, increasing employee's commitment, improving products, making closer relations with the public, and competitive advantage (Simpson et

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al., 2004).

Empirical studies also indicate the same thing that, there is a correlation between environmental-based business practices with MSME managers as well as organizational efficiency, profitability, and company image (Naffziger et al., 2003). The ability of a company to demonstrate its environmental responsibility can have an impact on the company's marketing strategy by surviving and increasing its market share and differentiating its business from its competitors (Porter & van der Linde, 1995). This action leads to higher profitability in the business and improves financial costs (Simpson et al., 2004).

Currently, companies cannot rule out the existence of the environment around them. Green management is a management concept in business while still paying attention to the environment. Green Management shows the construction of a green business, which if implemented in a company can prevent negative effects in the social and environmental environment but can still be profitable for the company.

The Indonesian government has also proven its concern for environmental management by Law Number 32 of 2009 concerning environmental protection and management, and its application in industry with Indonesian Government Regulation No. 74/2001 regarding the management of hazardous and toxic materials. The growing public desire for environmentally friendly products and government policies has encouraged SMEs to take opportunities.

The industrial structure in the city of Semarang is dominated by the food industry, the furniture industry and the rubber industry, rubber and plastic goods which account for 43.13% of the total industrial companies in the city of Semarang. Of the three industrial sub-sectors, the workforce is 21,521. Based on these data, the industry absorbs a lot of labor. This has a positive impact on the growing economy, especially in the city of Semarang. Besides having a positive impact, the presence of the industry in Semarang also has a negative impact on the environment around the business location. The problem of waste and excessive exploitation of nature has always been a problem that is constantly being studied. Companies are required to be able to implement green business, but on the other hand the company must achieve sustainable performance.

This study combines the factors that influence green management (financial, marketing, human resource, production), as well as the impact of implementing green management on sustainability performance. The relationship between green management and sustainability performan-ce has not been widely studied in the management and business literature. Goyal et al. (2013) conducted research on the relationship between sustainability performance and financial performance. They claim that environmental, social, and economic management will have an influence on sustainability performance, which in turn affects performance, both in financial and non-financial aspects. In terms of financial performance, several studies show different results on green management and financial performance. Dick and Tari (2008) suggested that green management has a positive impact on financial performance, but other researchers have confirmed there is no positive relationship between green management and financial performance (Cordeiro & Sarkis, 1998; Gilley et al., 2000; Link & Naveh, 2006).

Green management can be considered as a form of Corporate Social Responsibility (CSR). CSR is usually defined as a concept and strategy for integrating social and environmental problems with business operations and company owner interactions (Inquist et al., 2006). Sebhatu (2009) and Purnomo and Widianingsih (2012) have proven that CSR can be a proactive business model that is useful for companies to support sustainability performance. Based on this research, the researcher will develop strategies for achieving sustainable performance based on green management at MSMEs in Semarang City. The purpose of this research is to find out how green management at UMKM Semarang City can achieve sustainable performance.

Hypothesis Development

This study examines the simultaneous relationship between the factors that shape the implementation of green management, such as knowledge, and the impact of implementing green management on sustainability performance. This study focuses on the application of green management by involving the measurement of environmental performance and financial performance, as investigated by Karagiorgos (2010) and Earnhart and Lizal (2006). On the other hand, this study attempts to review the application of green management in the form of environmental performance as studied by Filbeck and Gorman (2004) and Stanwick and Stanwick (2000), which reveal several determinants of environmental performance, as suggested by Handoko (2012). However, this study focuses on the determinants that have been determined by a researcher (Raharjo, 2014) that the low or high level of green management implementation can be determined by knowledge. This study also combines financial performance measures (profit and assets) and non-financial performance

(reputation, opportunities, happiness) in the form of sustainability performance variables.

Raharjo (2014), as the focus of this study, uses a qualitative approach by conducting in-depth observations and interviews with Batik MSMEs implementing green management in Yogyakarta, Indonesia. The results of research on how the process of implementing environmental processes for SMEs has a good impact not only on the environment, but also for business and products, namely product uniqueness, market expansion opportunities, and MSME risks; all of this has contributed to increasing the competitiveness of MSMEs.

Raharjo (2018), found that knowledge about green business management is also an important factor in determining the success of implementing green business management. The knowledge in this study defines the concept of how to manage an environmentally friendly business. The concept of knowledge in this study emphasizes environmental friendly business knowledge. This knowledge can be obtained from direct experience in managing a business, experience helping my business partners in managing their business, experience participating in entrepreneurship training and various information available in online media. Business people also need to make a thorough analysis of what knowledge they need to manage a green business.

The assumption that green management, including environmentally friendly production processes, will reduce business performance and make companies lose in market competition as expressed by Ki-hoon (2009) is no longer relevant. Clearly, Dick and Tari (2008) revealed that environmental management has a positive influence on financial performance. This analysis was carried out by force by the results of the SME survey in the European Union by the Danish Technological Institute (2010) that the implementation of environmental processes in SMEs affects internal factors, namely reducing production costs, minimizing environmental damage, and efficient energy consumption. Furthermore, 93 percent of SMEs in the European Union revealed that environmentally friendly operations can save energy by 56 percent, minimize waste (53 percent), recycle (49 percent), save raw materials (46 percent), save water consumption (42 percent) , and SMEs can even sell 23 percent of the remaining production raw materials to other companies (European Commission, 2013). Externally, the environmentally friendly production process has been proven to be able to open up potential opportunities for the eco-industry or eco-market which are not widely known in the industrial world (Constantinos et al., 2010).

The implementation of pro-environmental activities by 107 MSMEs in Poland was also due to the desire to reduce damage to the surrounding environment (76 percent), improve the company's image (55 percent), and improve environmentally friendly technology (43 percent), where 39 percent of respondents stated that implementing pro-environmental activities is a strategy to increase their market potential (Constantinos et al., 2010). This shows that an environmentally friendly production process is one of the strategies to reduce environmental damage as well as a strategy to increase the competitiveness of MSMEs (Putri et al., 2018; Wang, 2019).

On the other hand, this study combines the factors that influence green management (knowledge), as well as the impact of implementing green management on sustainability performance. The relationship between green management and sustainability performance has not been widely studied in the management and business literature. Goyal et al. (2013) conducted research on the relationship between sustainability performance and financial performance. They claim that environmental, social, and economic management will have an influence on sustainability performance, which in turn affects performance, both in financial and non-financial aspects.

Dick and Tari (2008) suggest that green management has a positive impact on financial performance. By using an aproactive strategy, companies can carry out the process of reducing toxins, can result in organizational efficiency, and can reduce a lot of costs by reducing waste, energy, and redundant materials. Another benefit according to Azorín et al. (2009) stated that companies can have more value in the eyes of customers who are sensitive to environmental problems.

Based on the above background, the hypothesis formulated are as follows:

H1: The application of green management affects the competitive advantage of MSME's in Semarang

H2: The application of knowledge affects the green management of MSME's in Semarang

H3: The application of green management affects the sustainable performance of MSME's in Semarang

H4: The application of knowledge affects the sustainable performance of MSME's in Semarang

H5: The application of knowledge affects the sustainable performance of MSME's in Semarang

H6: The application of green management affects the sustainable performance of MSME's in Semarang through competitive advantage

H7: The application of knowledge affects the sustainable performance of MSME's in Semarang through green management

METHOD

The population in this study was MSMEs in Semarang City. The target data that would be used as research were 162 respondents, namely business owners (key people) spread over 5 regencies in Semarang, the five area include: 1) Semarang Barat; 2) Semarang Timur area; 3) Semarang Utara; 4) Semarang Tengah area; 5) Semarang Selatan.

This study examined four main variables, namely: competitive advantage, Green Business Management, knowledge and sustainable performance. The sustainable performance variable in this study was a measure of the success of a company by the period determined. The measurement of performance variables uses indicators of reputation, income, value asset, networking, achievement of success, happiness, opportunities. This variable was measured using seven question items developed by several researchers (Raharjo, 2018). An example is "From the consumer's point of view, my business has a good reputation".

While the Green Business Management variable in this study defined business activities that use innovation as a tool to achieve sustainability of natural resources, reduce waste of natural resources, increase social prosperity and provide a competitive advantage for companies. Companies that use green business management are companies that can expand the financial goals of the company in addition to looking for economic benefits as well as increasing social prosperity and maintaining the sustainability of natural resources. The measurement of this variable uses indicators of green marketing, green finance, green human resources, and green operations. This variable is measured by eleven question items developed from several researchers (Donald, 2009; Wintoro, 2012; Ansar, 2013; Ophata & Arulrajah, 2014). An example is "My business-made product uses ingredients that are safe for the environment ".

Knowledge variable in this study defined the concept of how to manage an environmentally friendly business. The measurement of this variable uses indicators of knowledge of environmentally friendly business based on direct experience in managing a business, experience helping my business partners in managing their business, experience in participating in entrepreneurship training and various information in online media. This variable is measured by five question items developed from several researchers (Raharjo, 2018). An example is " I have knowledge of eco-friendly business from hands-on experience managing a business".

Furthermore, the variable competitive advantage in this study is interpreted as an advantage in terms of resources and expertise possessed by the company as well as excellence in achieving performance related to the company's position compared to its competitors. To measure the variables of competitive advantage used indicators of cost advantage, quality advantage, innovation advantage and expansion advantage. This variable is measured using four proxy questions developed by Source: (Bharadwaj, 1993; Porter & van der Linde, 1995; Ma, 2004; Aaker 2009; Al-Awawdeh, 2012). An example is "My business has an exclusive relationship with suppliers/ suppliers for the acquisition of raw materials (having a legal partnership).".

Data Collection and Analysis Techniques

To answer the research problem two types of data are used, namely primary data and secondary data. Primary data obtained by survey and questionnaire methods directly from the informant/ respondent. In this study primary data will mainly be extracted from respondents. The population in this study were all fostered MSMEs in the province of Semarang City. The method of sampling in this study uses the proportional stratified random sampling method, with the condition that MSMEs observed are MSMEs that have insight into green business. While secondary data is obtained from data and information from documents/ publications/ research reports from government agencies/ agencies and other supporting data sources. The instruments to be used in this study are in the form of questionnaires and interview guides. The analytical method that will be used in this study uses quantitative analysis methods with Structural Equation Modeling (SEM) analysis tools through the WARP PLS application.

RESULTS AND DISCUSSIONS

Instrument Validity Test

Convergent validity, measured by using factor loading for the reflective indicator model or component loading for the formative indicator model, if the factor load is ≥ 0.30 or the factor load and the weight of the indicator component are significant, then the relevant indicator meets validity convergent (Table 1).

Tabel 1. Combined Loading and Cross Loading

	Green	Knwledg	Cmptadv	Sustper
A1	0.752	0.246	-0.568	0.310
A2	0.693	0.204	-0.093	0.334
A3	0.813	0.104	-0.058	-0.143
A4	0.874	-0.207	-0.013	-0.138
A5	0.878	-0.221	0.015	-0.164
A6	0.812	-0.232	0.071	0.003

A7	0.746	-0.085	0.097	0.135
A8	0.718	0.250	-0.088	0.148
A9_	0.714	0.337	0.140	-0.085
A10	0.757	0.010	0.239	-0.087
A11	0.721	0.194	0.157	0.039
B1	0.159	0.835	-0.297	0.012
B2	0.133	0.849	-0.266	-0.050
B3	0.282	0.744	-0.034	0.036
B4	-0.395	0.824	0.302	0.003
B5	-0.299	0.628	0.780	0.043
C1	-0.250	0.286	0.743	-0.028
C2	0.022	-0.133	0.848	-0.255
C3	0.015	-0.122	0.747	0.202
C4	0.214	0.049	0.684	0.260
D1	-0.232	-0.273	0.153	0.830
D2	-0.084	0.107	-0.379	0.862
D3	0.066	0.346	-0.119	0.715
D4	0.287	0.272	-0.187	0.700
D5	0.625	-0.174	0.231	0.623
D6	-0.419	-0.057	0.140	0.848
D7	-0.175	-0.198	0.328	0.767

Based on calculations using WarpPLS 6.0, the results of the convergent validity test are determined at the factor loading value in Table 1. Based on Table 1, this research indicated that the loading factor value ≥ 0.30 for each statement item. This shows that each indicator validly measures the dimensions of the concept being tested.

Meanwhile, the results of discriminant validity test on the instrument using Warp PLS 6.0 can be seen from the comparison of AVE square (Average Variance Extracted) with the correlation coefficient (Table 2), if the AVE root is greater than the correlation coefficient with other variables, then the questionnaire is claimed as valid discriminant
.

Table 2. The root of AVE and Correlation Coefficient

	Green	Knowl-edg	Cmp-tadv	Sustper
Green	**0.647**	0.378	0.530	0.455
Knwledg	0.705	**0.705**	0.418	0.486
Cmptadv	0.530	0.418	**0.748**	0.529
Sustper	0.455	0.486	0.529	**0.618**

In Table 2 could be seen that the comparison of AVE (Average Variance Extracted) square root with the correlation coefficient on each variable shows the value per question item is greater than

the corresponding correlation variable, thus this instrument meets the discriminant validity criteria. This shows that each construct that was tested was indeed different and each was an independent construct.

**Instrument Reliability Test**

The results of reliability testing on this research instrument have shown that each variable accordance with the reliability requirements. This is indicated by all composite reliability coefficient values> 0.70 and Cronbach alpha coefficient values> 0.60 (Table 3). This shows that all variables have met the requirements of both composite reliability and internal reliability consistency (Cronbach's alpha coefficient). Thus, it can be said that each individual indicator can measure an equal measurement and is sufficient to represent constructs.

Table 3. Composite Reliability dan Cronbach's Alpha

Variable	Composite Reliability Coefficient	Cronbach's Alpha Coefficient
green	0.886	0.858
knwledg	0.829	0.740
cmptadv	0.835	0.736
sustper	0.810	0.726

Fit Model and Quality Indices

Figure 1 illustrates the model of path analysis results that are processed using Warp PLS 6.0. The model has accordance with the requirements for goodness of fit. The model has fulfilled the basic criteria for model fit test using Warp PLS 6.0, which has fulfilled the requirements of the average path coefficient (APC) p <0.05 (0.359, P <0.001), the average R-squared (ARS) value, p <0.05 (0.306, P <0.001) and average adjusted R-squared (AARS)) p <0.05 (0.300, P <0.001). Thus, the model can be said to be fit and can be used for measurements at a later stage.
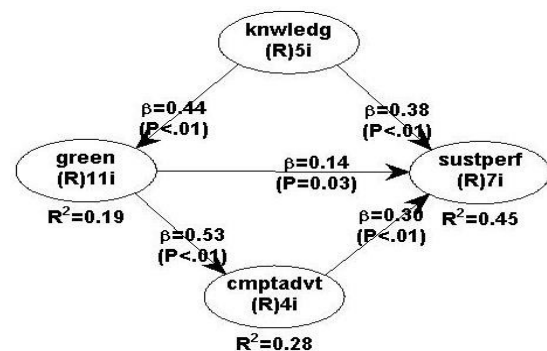
Figure 1. Model of path analysis results

The fit model shows that the model in Figure 1 accordance with the ideal goodness of fit requirements, so that it can describe how the relationship between construct variables and their assumptions.

The Result of Direct Hypotheses

After the modeling assumptions using Warp PLS are fulfilled, then the analysis and interpretation of the hypothesis testing will be conducted using the resampling and t-test methods. If the p-value is ≤ 0.01 (alpha 1%), it can be said that the level of significance is very high. Furthermore, if the p-value is ≤ 0.05 (alpha 5%), then it can be said to be significant. Finally, if the p-value is ≤ 0.10 (alpha 10%), it can be said that the significance level is very weak.

The Affect of Green Management (Green) on Competitive Advantage (Cmptadv)

Table 4 shows the results of testing the hypothesis of direct influence showing green management (green) on competitive advantage (cmptadv). The results of the data processing explain that there is an influence of green management (gmanage) on competitive advantage (cmptadv) with a path coefficient of 0.532 and p <0.001. A value of p <0.01 indicates that H1 is supported by a very high level of significance. Positive path coefficient (0.532) explains that the higher the green management (green) effect, the competitive advantage (cmptadv) increases.

This study is in line with research conducted by Putri et al. (2018) and Wang et al (2019) which shows that business units that able to implement

Table 4. The Hypotheses Result of Direct Influence

No.	Relationship among Variables		Path Coefficient	P-Value	Note
1.	Green	cmptadv	0.532***	<0.001	High significance
2.	knwledg	green	0.435***	<0.001	High significance
3.	green	sustper	0.303***	<0.001	High significance
4.	knwledg	sustper	0.515***	<0.001	High significance
5.	cmptadv	sustper	0.232***	<0.001	High significance

Based on Table 4, can be seen that the p-value on each relationship between variables shows a value <0.05 which is equal to <0.001, this shows that all hypotheses in this study can be accepted with a high level of significance.

The Result Of Mediation Hypotheses Testing

green management in their daily business activities will get a competitive advantage. According to this idea, the better the MSME in implementing green management, the better the MSME's ability to compete. The application of green management for MSMEs can be in the form of implementing environmentally friendly production processes, such as waste treatment and the use of environmentally friendly

Table 5. The Result of Mediation Hypotheses Testing

	Explanatory Variable	Mediating Variable	Response Variable	Path Coefficient of Indirect Influence	P-Value	Note
H6	green	cmptadv	sustper	0.161	<0.002	mediated
H7	knwledg	green	sustper	0.062	0.131	Not mediated

Based on table 5, can be seen that the p-value on mediation hypotheses testing on H6 shows a value <0.05 (<0.002), this shows that indirect relationship in this study can be accepted. But that the p-value on mediation hypotheses testing on H7 shows a value >0.05 (0.131), this shows that indirect relationship in this study can not be accepted.

raw materials. In addition to the production process, MSMEs can also campaign for environmental preservation practices through marketing processes, such as when advertising. UKMM also needs to invest their business results in environmentally sound business units as well. Thus, MSMEs can enhance exclusive cooperative relations with suppliers and distributors,

so that MSMEs' abilities are increasingly superior in competition.

The Affect of Knowledge (knwledg) on Green Management (Green)

Table 4 shows the results of the hypothesis of the direct effect of the relationship between Knowledge (knwledg) on Green Management (Green). The results of data processing indicate that there is an influence of Knowledge (knwledg) on Green Management (Green) with an efficient path is 0.435 and p < 0.001. A value of p <0.001 indicates that H2 was received with a very high level of significance. While the path coefficient value is positive (0.435) shows that the higher the influence of Knowledge (knwledg), the Green Management (Green).

The results of this study support the results of research conducted by Raharjo (2018) who propose how the application of knowledge of environmentally friendly business in a business unit can create improved ability of green management the business unit. Such as makes continuous improvements to the production process to produce quality products, as well as the production process for energy efficient business products. Thus, the better MSMEs are in managing their knowledge of environmentally friendly business, the better MSMEs will improve their ability to implemented green management in the industrial environment.

The Affect of Green Management (Green) on Sustainable Performance (Sustper)

Table 4 shows the results of the hypothesis of the direct effect of the relationship between green management (gmanage) on green performance (gperform). The results of data processing indicate that there is an influence of green management (gmanage) on green performance (gperform) with an efficient path is 0.303 and p = 0.001. A value of p <0.01 indicates that H3 was received with a very high level of significance. While the path coefficient value is positive (0.303) shows that the higher the influence of green management, the sustainable performance (sustper) increases.

The results of this study support the results of research conducted by [Naffziger, 2003; Raharjo, 2018; Putri, 2020] who propose how the application of environmental based management in a business unit can create improved performance for the business unit. Such as improved their financial advantage (profit, addition of asset value) and non-financial benefit (well reputation, opportunity, happiness) with environmental preservation. Thus, the better MSMEs are in managing their business related to the environ-

ment, the better MSMEs will improve their sustainable performance in the industrial environment.

Green management activities that can be carried out by MSMEs can be done in several ways. For example, when viewed from a marketing management perspective, MSMEs must produce environmentally friendly products, both in terms of the quality of raw materials and product packaging. By selling environmentally friendly products, MSMEs can campaign for an environmentally friendly movement. In addition to the marketing function, MSMEs can also carry out activities in the financial function by investing in environmentally friendly businesses and allocating waste treatment costs. Furthermore, in operational management activities, MSMEs can apply energy-efficient working mechanisms in their production processes. Finally, MSMEs also need to have employees who have skills in processing environmentally friendly products and have employees who have behaviors that reflect a friendly attitude to the environment, in order to be able to implement green management comprehensively and work together in every field / function.

The Affect of Knowledge (knwledg) on Sustainable Performance (Sustper)

Table 4 shows the results of the hypothesis of the direct effect of the relationship between knowledge (knwledg) on sustainable performance (sustper). The results of data processing indicate that there is an influence of knowledge (knwledg) on sustainable performance (sustper) with an efficient path is 0.515 and p < 0.001. A value of p <0.001 indicates that H4 was received with a very high level of significance. While the path coefficient value is positive (0.515) shows that the higher the influence of knowledge (knwledg), the sustainable performance (sustper).

The results of this study support the results of research conducted by Raharjo (2018) and Putri (2018) who propose how the application of eco-friendly business knowledge in a business unit can create improved performance for the business unit. Such as improved their financial advantage (profit, addition of asset value) and non-financial benefit (well reputation, opportunity, happiness) with environmental preservation. Thus, the better MSMEs are in managing their eco-friendly business knowledge, the better MSMEs will improve their Sustainable Performance in the industrial environment.

The Affect of Competitive Advantage (Cmptadv) on Sustainable Performance (Sustper)

Table 4 shows the results of testing the hypothesis of a direct effect between the variables of competitive advantage (cmptadv) on sustainable performan-

ce (sustper). The results of data processing explained that there was an influence of competitive advantage (cmptadv) on sustainable performance (sustper) with path coefficients of 0.232 and p <0.001. A value of p <0.01 indicates that H5 is accepted with a high level of significance. positive path coefficient (0.232), shows that the higher the influence of competitive advantage (cmptadv), the higher the level of sustainable performance (sustper) of a business unit.

The results of this study are in line with the results of the study Putri (2018) and Raharjo (2018) which confirms that competitive advantage affects the company's sustainable performance (sustper). Thus, the better MSMEs are in competing in the industry, the better the company's performance. The ability to compete in MSMEs can be improved through increasing exclusive relationships with environmentally friendly suppliers and establishing exclusive cooperation with distributors and agents in marketing their products, so MSMEs can enjoy various benefits that can improve their performance.

The Affect of Green Management (Green) on Sustainable Performance (Sustper) through Competitive Advantage (Cmptadv)

Table 5 shows the results of the hypothesis of the indirect effect of green management variables on sustainable performance through competitive advantage. The results of data processing indicate that there is an influence of green management on sustainable performance through competitive advantage with path coefficients of 0.161 and p <0.002. A value of p <0.002 indicates that H6 is supported by a high level of significance. This means that competitive advantage is a mediating variable because it can be an intermediary between green management on sustainable performance.

The results of this study are on the same track as the results of research Putri et al. (2020) which confirms that the application of Green Management can improve the green performance of SMEs through the application of competitive advantage. Therefore, the better the company implements green management in the industry, the better the company's performance through competitive advantage. Thus, to improve the green performance of MSMEs, MSMEs need to improve the implementation of green businesses, both in terms of capital, marketing and production processes, which must be environmentally sound. The ability of UMKM in implementing the green business is expected to be able to improve the exclusive cooperative relationship between MSMEs with suppliers and distributors. Thus MSMEs will enjoy various benefits that can

improve their performance, such as profits and reputation.

The Affect of Knowledge (knwledg) on Sustainable Performance (Sustper) through Green Management (Green)

Table 5 shows the results of the hypothesis of the indirect effect of Knowledge variable on Sustainable Performance through green management. The results of data processing indicate that there is an influence of knowledge on sustainable performance through green management with path coefficients of 0.062 and p = 0.131. A value of p = 0.131 indicates that H7 is not supported by a high level of significance. This means that green management is not a mediating variable because it is able to be an intermediary between knowledge on sustainable performance.

The results of this study are not on the same track as the results of research Raharjo (2018) which confirms that the application of knowledge can improve the sustainable performance of SMEs through the application of Green Management. Thus, improving business performance can be done by directly applying eco-friendly business knowledge. For example, through direct experience in managing a business, experience helping my business partners in managing their business, experience in participating in entrepreneurship training and various information in online media

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the study, it can be concluded that MSMEs that apply green management in their business operations can improve company performance through the ability to compete with these MSMEs. Knowledge of green business management is also an important factor in determining the successful implementation of green business management. The knowledge in this study defines the concept of how to manage an environmentally friendly business. This knowledge can be obtained through direct experience in managing an environmentally friendly business, experience helping business partners in managing their business, experience in participating in entrepreneurship training and various information in online media.

This green management activity can increase the competitiveness of MSMEs, such as having exclusive relationships with suppliers / suppliers for the acquisition of environmentally friendly raw materials (having a legal cooperative relationship), having exclusive relationships with distributors / retailers to distribute finished

goods, having superior knowledge to manage business processes / produce quality products at lower costs, have a strong market position compared to competitors and have a good reputation with consumers. The better MSMEs are in implementing green management, the better MSMEs will be in competing in their industry, which will increase the sustainable performance of the company. Such as increasing financial benefits (profit, adding asset value) and non-financial benefits (reputation, opportunities, happiness). Thus the implementation of green management has a significant effect on improving the green performance of MSMEs in the city of Semarang. Business actors, local and central governments, as well as private and public institutions need to jointly increase the intensity of green management implementation among industry players, especially MSMEs. So that the sustainability of the earth is maintained forever. Theoretically, this research model still needs to be explored again related to the mediating variables that have a relationship between the implementation of green management and company performance, such as the variables of creativity and innovation.

REFERENCES

Aaker, D. A., & McLoughlin, D. (2009). *Strategic market management: global perspectives*. John Wiley & Sons.

Al-Awawdeh, W. M., & Al-Sharairi, J. A. (2012). The relationship between target costing and competitive advantage of Jordanian private universities. *International Journal of Business and Management*, *7*(8), 123.

Ansar, N. (2013). Impact of green marketing on consumer purchase intention. *Mediterranean Journal of Social Sciences*, *4*(11), 650-650.

Dick, G. P., & Tarí, J. J. (2008). Cause of Effect? ISO 14001 Certification and Financial Benefits. *Kent Business School Working Paper Series No. 168*, (168), 1-24

Bansal, P., & Roth, K. (2000). Why companies go green: A model of ecological responsiveness. *Academy of management journal*, *43*(4), 717-736.

Bharadwaj, S. G., Varadarajan, P. R., & Fahy, J. (1993). Sustainable competitive advantage in service industries: a conceptual model and research propositions. *Journal of marketing*, *57*(4), 83-99.

Donald S, S. (2009). Green Management Matters Only if it Yields More Green: An Economic/Strategic Perspective. *Academy of management perspectives*, *23*(3), 5-16.

Earnhart, D., & Lizal, L. (2006). Effects of ownership and financial performance on corporate environmental performance. *Journal of Comparative Economics*, *34*(1), 111-129.

Enquist, B., Johnson, M., & Skålén, P. (2006). Adoption of corporate social responsibility–incorporating a stakeholder perspective. *Qualitative Research in Accounting & Management*, 3(3), 188-207.

Filbeck, G., & Gorman, R. F. (2004). The relationship between the environmental and financial performance of public utilities. *Environmental and Resource Economics*, *29*(2), 137-157.

Gilley, K. M., Greer, C. R., & Rasheed, A. A. (2004). Human resource outsourcing and organizational performance in manufacturing firms. *Journal of business research*, *57*(3), 232-240.

Goyal, P., Rahman, Z., & Kazmi, A. A. (2013). Corporate sustainability performance and firm performance research. *Management Decision*, *51*(2), 361-379.

Handoko, S. (2012). Model Pengembangan Green Business Melalui Corporate Social Responsibility Pada Perusahaan Go Public di Bursa Efek Indonesia. *Jurnal Ilmiah Aset*, *14*(1), 75-82.

Karagiorgos, T. (2010). Corporate social responsibility and financial performance: an empirical analysis on Greek companies. *European Research Studies*, *8*(4), 85-108.

Ki-Hoon, L. (2009). Why and how to adopt green management into business organizations? (The Case Study of Korean SMEs in Manufacturing Industry), *Management Decision Journal*, *47* (7), 1101-1121.

Link, S. & Naveh, E. (2006). Standardization and discretion: does the environmental standard ISO 14001 lead to performance benefits?. *IEEE Transactions on Engineering Management*, *53*(4), 508-519.

Ma, H. (2004). Toward global competitive advantage: Creation, competition, cooperation, and co-option. *Management decision*, *42*(7), 907-924.

Naffziger, D. W., Ahmed, N. U., & Montagno, R. V. (2003). Perceptions of environmental consciousness in US small businesses: An empirical study. *SAM Advanced Management Journal*, *68*(2), 23.

Nielsen (2014). It Pays To Be Green: Corporate Social Responsibility Meets The Bottom Line. *Markets and Finance.*

Opatha, H. H. P., & Arulrajah, A. A. (2014). Green human resource management: Simplified general reflections. *International Business Research*, *7*(8), 101.

Porter, M., & Van der Linde, C. (1995). Green and competitive: ending the stalemate. *The Dynamics of the eco-efficient economy: environmental regulation and competitive advantage*, *33*.

Putri, V. W., Ridloah, S., & Rafinda, A. (2018). A Constructive Model of MSMEs' Entrepreneurial Success Based on Green Management System and Psychological Capital in Semarang City. *KnE Social Sciences*, *3*(10), 1255-1270.

Putri, V. W., Ridloah, S., & Wijaya, A. P. (2020, May). Strategy for increasing green economic performance of small and medium enterprises based

on green business management. In *IOP Conference Series: Earth and Environmental Science* (Vol. 485, No. 1, p. 012063). IOP Publishing.

Purnomo, P. K., & Widianingsih, L. P. (2012). The influence of environmental performance on financial performance with corporate social responsibility (CSR) disclosure as a moderating variable: evidence from listed companies in Indonesia. *Review of Integrative Business and Economics Research*, *1*(1), 57.

Raharjo, K. (2018) The role of green management in creating sustainability performance on the small and medium enterprises. *Management of Environmental Quality: An International Journal*. *30*(3), 557-577.

Stanwick, S. D., & Stanwick, P. A. (2000). The relationship between environmental disclosures and financial performance: an empirical study of US firms. *Eco-Management and Auditing: The Journal of Corporate Environmental Management*, *7*(4), 155-164.

Sebhatu, S. P. (2008, December). Sustainability Performance Measurement for sustainable organizations: beyond compliance and reporting. In *11th QMOD Conference. Quality Management and Organizational Development Attaining Sustainability From Organizational Excellence to Sustainable Excellence; 20-22 August; 2008 in Helsingborg; Sweden* (No. 033, pp. 75-87). Linköping University Electronic Press.

Simpson, M., Taylor, N., & Barker, K. (2004). Environmental responsibility in SMEs: does it deliver competitive advantage?. *Business strategy and the environment*, *13*(3), 156-171.

Wang, C. H. (2019). How organizational green culture influences green performance and competitive advantage. *Journal of Manufacturing Technology Management*, *30*(4), 666-683.

Wintoro, D. (2012). Eksploratori Tujuan Manajemen Keuangan Bisnis Hijau. *Jurnal Keuangan dan Perbankan*, *16*(1).