Innovations

Effect of Green Product and Green Promotion on Business Performance: A Case of Medium and Large Scale Manufacturing Firms in Sidama National Regional State of Ethiopia

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Abstract

This research examined the effect of green products and green promotion on business performance: with a mediating effect of competitive advantage. There has been relatively little research that examines the effect of green marketing practices on business performances in developing countries, particularly in Ethiopia. This study represents an attempt to do so from an Ethiopian perspective. A response from the sample of 301 managers of medium and large manufacturing firms in Ethiopia which was obtained by survey questionnaire was tested on their hypothesized relationship using the SEM analysis method with AMOS version 23 and smart PLS3. The findings show that the green product and green promotion exert a positive significant effect on competitive advantage. The findings also show that the green productand green promotion exert a positive significant effect on business performance. In addition, the finding shows that competitive advantagesignificantly mediates the relationship between green products, green promotion, and business performance. This research recommended that medium and large-scale manufacturing firms should implement green marketing practices to enhance their business performances in Ethiopia. Also, it was recommended that future researchers should assume another mediating variable to determine the effect of green product and green promotion on business performance.

Keywords: 1.Green Product, 2.Green Promotion, 3.Green marketing practices, 4.Competitive Advantage,5.Business performance

1. Introduction

Nowadays, rapid globalization and industrialization have caused adverse impacts on the environment; such impacts involve global warming, air pollution, water pollution, chemical and toxic explosion (Geng et al., 2017). Industrial plants are among the main sources of environmental degradation due to the large number of pollutants they produce (Mekonnen &Gokcekus, 2019). Along with the rapid change in the global manufacturing sector, environmental issues are becoming a more important concern in managing business organizations. There is a consensus on the need for rapid industrialization in Africa. But, industrial growth can have detrimental effects on the environment and exhaust nonrenewable natural resources if undertaken in an unsustainable manner (DBA, 2013). Moreover, industrialization caused environmental degradation and associated impact on human health in Sub-Saharan Africa (UNEC, 2006).

Concerns about the environment and consumer demand for environmentally friendly products have spawned a new marketing concept known as green marketing (Kotler, 2008). Green marketing, according to Kimani (2015), is

a movement that encourages businesses to develop and promote environmentally friendly products. In addition, green marketing is defined as a company's or organization's dedication to the development of safe, environmentally friendly goods and services (Maziriri (2018). Green marketing can be achieved by the use of recyclable and easily decomposable packaging, improved pollution control techniques, and more efficient energy use (Mukonza & Swarts, 2019).

In the era of sustainable development, Managers are constantly faced with the issue of what they should invest in to meet the needs arising from eco-friendly products and services (Eneizan et al., 2019). Also, managers are expected to consider environmental obligations that are projected of organizations (such as energy-saving and healthy environment) to be successful (Filho &Menck, 2014). Furthermore, manufacturing companies must adapt to the use of green marketing practices to lessen their environmental impact, compete, and thrive in a highly competitive global marketplace. Such adaptation provides firms with a competitive advantage over their competitors as well as improved business performance (Jarin, 2014). Kimani (2015) also claims that green marketing practices have an impact on business success. Furthermore, Eneizan et al. (2019) explain that firms have adopted green marketing to gain a competitive advantage and increase their business performance.Moreover, Ahmad et al. (2020) explain green marketing is one of the important marketing strategies that business firms used to practice sustainable growth achievement

Assuming from the above-mentioned explanations, to compete and survive in a severely competitive market, medium and large-scale firms need to adopt green products for their business operation. Green products are the result of product-related decisions and actions aimed at preserving or benefiting the natural environment by conserving energy and/or resources, as well as reducing emissions and waste (Ahmad et al., 2020). Similarly,Eneizan and Wahab (2016) stated green products are eco-friendly products which means that the products must have the least impact and harmful effects on the environment and human health. Moreover, Alsheikh (2020) mentioned that a product could be green if its production process is eco-friendly and less damaging to the environment. Researchers agreed that green products offer a competitive advantage and increase business performance (Maziriri, 2020; Alsheikh, 2020; Ahmad et al., 2020; Buswari et al., 2021).

Regarding the effectiveness of green requirements producing green products could not be enough, combining with other green marketing strategies to seek cooperation to achieve business goals is important. Therefore, it is imperative to mention that producing green products should be followed by green promotion to achieve a business goal (Kao & Du, 2020).Green promotion initiatives are an important way for businesses to educate stakeholders about their sustainability efforts, commitments, and accomplishments (Yan &Yazdanifard, 2014). Moreover, Eneizan and Wahab (2016) explained green promotions are important vehicles for promoting goods, services, concepts, and organizations' efforts to demonstrate concern to protect and preserve the environment. Researchers agreed that green promotion gives a competitive advantage and increases business performance (Eneizan et al., 2016; Agarwal, 2017; Maziriri, 2020).

It is imperative to mention that green products and green promotion would impact competitive advantage and business performance is still in need of enhanced scientific study. It is also essentially noted that most of the studies conducted on green marketing practices (green product and green promotion) were carried out in Asia, Europe, the Middle East, and South African countries (Maziriri, 2020; Rianz, 2020; Ahmad et al., 2020; Buswari et al., 2021). The existing literature on green products and green promotion has not provided clear evidence about Ethiopia which is a country located in the North Eastern part of Africa. Moreover, available literature related to green products and green promotion in manufacturing firms mainly focused on SMEs.

By considering the above research gaps, the main aim of the study is to determine the effect of green products and green promotion on business performance: mediating effect of competitive advantage in the case of medium and large-scale manufacturing firms in the study area. More specifically the following objectives are developed (i) To examine the effect of the green product on competitive advantage; (ii) To analyze the effect of the green promotion on competitive advantage; (iii) To determine the effect of a green product on business performance; (iv) To examine the effect of green promotion on business performance; and (v) To determine the effect of competitive advantage on business performance; (vi) To examine the mediating effect of competitive advantage on the relationship between

green product and business performance; (vii) To examine the mediating effect of competitive advantage on the relationship between green promotion and business performance.

2. Literature Review and Hypothesis Development

2.1 Green Product and Competitive Advantage

Firms must explore ways to produce advanced products to gain a competitive advantage in this period of rapid changes in market competition. Organizations should possess distinctive ability and capability to differentiate themselves from the other competitors in the industry (Potjanajaruwit, 2018). Firms that use environmental applications to differentiate their products from others gain a competitive capability (Maziriri, 2018). Similarly, Lin, Tan, and Geng (2013) argued that green products would help companies gain a sustainable competitive advantage and meet their business objectives. Moreover, different studies are performed to investigate the relationship between green products and firms' competitive advantage.

Maziriri (2018) investigated the effect of green marketing on competitive advantage and company business performance. Results showed that green product innovation has a positive significant impact on competitive advantage.Green marketing, according to Sehgal (2017), is a vehicle for sustainable competitive advantage. The findings revealed that companies that bring green products to market have a sustainable competitive advantage over non-green product suppliers in the industry. Furthermore, a study conducted by Zhanglan (2016) investigates the relationship between green marketing practices and competitive advantage in the case of Kenyan commercial real estate development. The result revealed that green product enables the company to gain a competitive advantage over others Thus, inferring from the above literature the following hypothesis is developed:

H1: Green product has a significant effect on competitive advantage

2.2 Green Promotion and Competitive Advantage

Companies can show environmental sensitivity by using several strategies; one of these marketing tools can be green promotion (Singh, 2017). Green promotion is related to communicating organizational commitment towards sustainability, environmental initiatives of companies, and green product attributes in the market (Ghodeswa & Kumar, 2014). Green promotion determines the successful development and implementation of green marketing strategies. Successful promotion of green products should give clear information about the benefits of a green product to customers (Kalburan & Hasiloglu, 2018). More specifically, there are previous studies that show the relationship between green promotion and competitive advantage.

Green packaging and green advertising were investigated by Maziriri (2020) as potential predictors of competitive advantage and market success. Green advertising had a positive impact on competitive advantage and market growth, according to the findings. Sehgal (2017) considers green marketing to be a vehicle for sustainable competitive advantage in the case of Indian manufacturing firms. The findings revealed that green promotion has a positive impact on long-term competitive advantage. Zhanglan (2016) goes on to look into the connection between green marketing and competitive advantage in Kenya. Results showed that green promotion has a big effect on competitive advantage. Assuming the preceding literature, the following hypothesis is established.

H2: Green promotion has a significant effect on competitive advantage

2.3 Green Product on Business Performance

Green products are those that help the environment by preventing, reducing, or eliminating negative effects on water, air, and soil (Eneizan et al., 2019). Moreover, different studies investigate the relationship between green products and business performance. W-H Goh (2019) investigated how green marketing mix strategies affected business performance. The results demonstrated that green products have a favorable effect on a company's ability to succeed. Similarly, Maziriri (2018) looked into how South African businesses fared when using green marketing. The outcome demonstrated that green innovative products had a positive impact on business performance. Additionally, Agarwal (2017) looked into the effect of green marketing on Indian businesses' financial performance.

The conclusion was that green products have a favorable impact on businesses' financial success. Therefore, the following hypothesis is developed

H3: Green product has a significant effect on business performance

2.4 Green Promotion on Business Performance

Green promotion campaigns are a powerful tool for educating stakeholders about a company's environmental efforts, commitments, and accomplishments (Arseculeratne &Yazdanifard, 2014). Promotion seeks to connect the firm with its customers and transfer its orientation and environmental image (W-H. Goh et al., 2019). Furthermore, there are previous studies that show the relationship between green promotion and business performance.

Enaizan et al. (2020) researched green marketing and sustainability and the result showed that green promotion improves the overall firms' performance. Similarly, W-H. Goh et al. (2019) suggested that green promotion has a positive correlation with firms' performance. In the same way, Vilkaite- Vaitone, and Skackauskiene (2019) researched green marketing orientation in Lithuania, and the result revealed that green promotion has a positive effect on firms' performance. Furthermore, Maziriri (2018) mentioned that advertising influences business performance and its ability to influence sales and profitability of the business. Thus, by assuming the above literature the following hypothesis is developed.

H4: Green promotion has a significant effect on business performance

2.5 Competitive Advantage and Business Performance

According to Wang (2014), competitive advantage is getting something that the rivals don't have; it is the advantage that a company has over its competitors. A company can use its unique capability: i.e. competitive advantage to increase its profitability and growth. Similarly, Potjanajaruwit (2018) discovered that the organization's success in creating a competitive advantage can be used to develop a business strategy for long-term survival and growth. Sihite (2018) mentioned that Competitive advantage is one of the sources of the corporate sustainability performance of the company. Specifically, there are previous studies that show the relationship between competitive advantage and business performance.

Maziriri (2020) looked at the relationship between green advertising and business performance, using competitive advantage as a mediating variable. Competitive advantage has a positive effect on market success in South African manufacturing SMEs. Buswari et al., (2021) concluded that competitive advantage has a significant effect on business performance. Haseeb et al. (2019) focused on the relationship between sustainable competitive advantage and sustainable business performance in Malaysia. The findings showed that sustainable competitive advantage has a substantial positive impact on sustainable business success.Nuryakin (2018) investigated the effect of competitive advantage on marketing performance in Indonesia. The result indicated that competitive advantage had a significant effect on marketing performance. In the same way, Potjanajaruwit (2018) conducted a study on the effect on firms' performance in Thailand. The result showed that competitive advantage had a direct positive effect on the firm's performance.Assuming from the aforementioned discussion the following hypothesis is developed.

H5: competitive advantage has a significant effect on business performance

2.6 Competitive Advantage as a Variable Mediating the Relationship between Green Marketing Practices and Business Performance

In this study competitive advantage is taken as a variable that mediates the relationship between green products, green promotion, and business performance.There are very few studies focused on competitive advantage playing a mediating role. A study conducted by Maziriri (2020) place competitive advantage as mediating role in explaining green package & green advertising for business performance. The findings showed that competitive advantage mediates the relationship between green marketing practices and business performance. Similarly, Wanjiru et al. (2019) emphasized that competitive advantage can mediate corporate strategies and the performance of manufacturing firms in Kenya. Assuming from the aforementioned discussion the following hypotheses are developed.

H6: *Competitive advantage has a significant mediating relationship between green products and business performance*

H7: *Competitive advantage has a significant mediating relationship between green promotion and business performance*

2.7 Conceptual Framework

According to Gunzler and Morris (2015), a conceptual framework explains the relationship between the study's variables.The objective of this study is to test the hypothesis related to green product, green promotion, competitive advantage, and business performance. In this study, the conceptual framework model suggests a green product and green promotion are considered as the predictor variables, competitive advantage as the mediating variable, and business performance as the outcome variable. Based on the joining literature related to the research variables, a conceptual model was proposed to guide the empirical study. The conceptual model for this study can be illustrated with a diagrammatic representation of the relationships between all the variables as shown in figure 1.

Figure 1: Conceptual Framework model
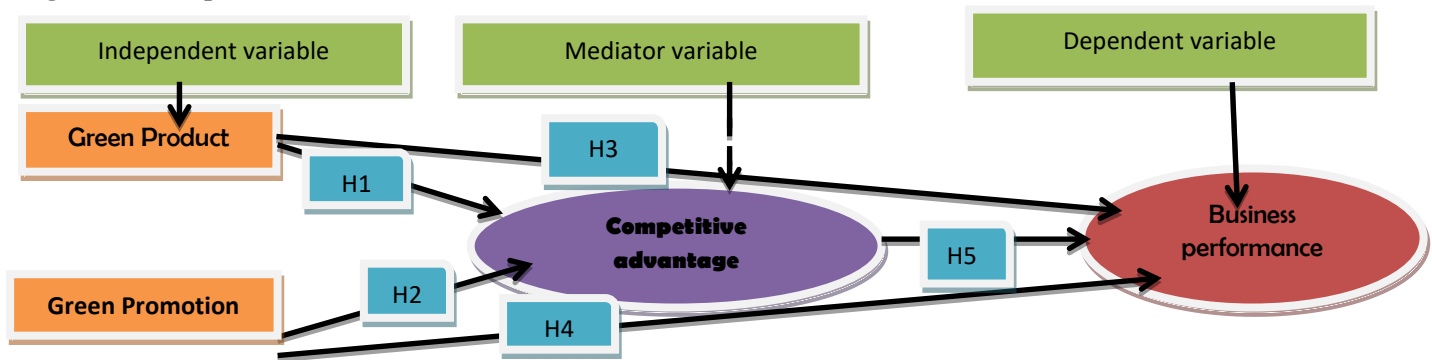
Source: Developed for this study, 2022.

3. **Research Methodology**

This study employed an explanatory research design. Explanatory research is typically concerned with determining the relationship between two or more study variables (Malhotra, 2010). The study was conducted to determine the effect of green products and green promotion on business performance: mediating effect of competitive advantage in a case of medium and large-scale manufacturing firms in Sidama National Regional State of Ethiopia. The specific research design employed for this study was a cross-sectional survey design. When a lot of data from a broad population is needed at one time, a cross-sectional survey is utilized (Cooper & Schindler, 2014). The unit of analysis for this study is the medium and large-scale manufacturing firms in Ethiopia. This study deals with each firm's manager's response as an individual data source.

The selection of the firms was derived by using the stratified sampling method that ensures all categories (sectors) of the medium and large-scale manufacturing firms were proportionally represented in the sample. For this study, 318 medium and large-scale manufacturing firms were selected as study samples by applying the Yamane formula from the population of 1546 firms. By considering the level of confidence of 95% and sampling error (margin of error) (5%=0.05).

$no= N/1+N(e)^2$

$no= 1546/1+1546(0.05)^2 \cong 318$

Where

no = sample size

N= population size= 1546

e^2= margin of error at 5%

This formula was preferred in this study because of its simplicity in usage, scientific and applicability in large populations (Yamane, 1967). A structured close-ended questionnaire was used to collect the data. All the items were measured using five-point Likert scale items presented 1= strongly disagree and 5= strongly agree. Some instrument items were adopted from items originally devised by (Maziriri, 2018) and modified for this study. To ensure an appropriate response rate the questionnaire was pretested from 40 medium and large-scale firms in the study area. This was done mainly to improve the overall look and content of the final data collection instrument. As a result, the questionnaire was revised for the purpose of readability, wording, and arrangement, and some of the items were omitted based on the feedback received from the pilot study.

Data were analyzed using factor analysis and structural equation modeling. Factor analysis was used to make data more palatable for structural equation modeling analysis and to reduce data to represent a set of variables by smaller numbers. The conceptual model-based hypotheses were put to the test using structural equation modeling (SEM). SEM can address research issues including complex causal linkages between unobserved variables with empirical data (Sung et al., 2018). To perform the SEM analysis, the two-stage approach recommended by Byrne (2013) was adopted.

In the first stage, the measurement model analysis was conducted by specifying the causal relationships between the observed variables and the underlying theoretical constructs. For this purpose, CPA using AMOS version 23 was employed. In the second stage, structural model analysis was conducted by specifying the causal relationships between latent constructs and testing hypotheses. For this purpose path analysis using AMOS version, 23 was applied. In addition to AMOS smart PLS 3 was used to test the mediating relationship between variables.

4. Findings and Discussion

After checking for missing values, a total number of 301 questionnaires were completed out of the initial sample of 318. Hence, this resulted in a response rate of 94.7 percent. Of the total questionnaire distributed, 17 were unusable, as several items were not answered on the questionnaire. A response rate of 94.7 percent was considered acceptable for the study. This is supported by Malhotra (2010) who regarded a 50 percent response rate and above as acceptable in a social research survey. Therefore, the study response rate of 94.7 percent is considered high and acceptable in this study.

4.1 Measure of Reliability and Validity

In this study, to test the reliability of constructs Cronbach's alpha and composite reliability tests were used. Cronbach`s alpha and composite reliability tests are commonly used indicators of internal consistency (Hair et al., 2017). Cronbach alpha coefficient should be surpassing 0.70 which is the threshold. Similarly, the composite reliability test (CR) value should exceed the threshold value of 0.70 (Oluwatayo, 2012). In the current study, the Cronbach alpha coefficient value of constructs ranged from 0.897 to 0.963 which exceeds the 0.70 threshold and is acceptable. In the same way, composite reliability values ranged from 0.899 to 0.963 which is above the 0.70 threshold. This shows all constructs of current studies have good internal consistency.

To test the validity of constructs convergent validity and discriminant validity were used. To check convergent validity inter-item correlation for all the scale items using confirmatory factor analysis was done. As a result, in the current study, the values range from 0.671 to 0.960which is above 0.50 the threshold (Byrne, 2013). This indicates that there was a unidimensionality of items in the constructs. Furthermore, to check discriminant validity average variance extracted (AVE) was used. AVE values ranged from 0.641 to 0.768 which were above 0.5 thresholds (Oluwatayo, 2012; Byrne, 2013). This result provides evidence that the research scale is acceptable.

Table 1: Summary of reliability and validity analysis result

Research construct		Cronbach`s Test		CR	AVE
		Item-total	Alph value		
GPD	GPD2	0.770	0.897	0.899	0.641
	GPD3	0.723			
	GPD4	0.671			
	GPD5	0.860			
	GPD6	0.703			
GPM	GPM1	0.865	0.920	0.922	0.664
	GPM2	0.742			
	GPM4	0.714			
	GPM5	0.823			
	GPM7	0.746			
	GPM8	0.749			
CA	CA1	0.804	0.936	0.939	0.720
	CA2	0.766			
	CA4	0.885			
	CA5	0.837			
	CA6	0.678			
	CA7	0.901			
BP	BP1	0.898	0.963	0.963	0.768
	BP3	0.766			
	BP4	0.816			
	BP5	0.803			
	BP11	0.863			
	BP14	0.870			
	BP15	0.960			
	BP16	0.880			

Source: Own survey, 2022

4.2 Exploratory Factor Analysis (EFA)

For the current study Kaiser- Meyer-Olkin (KMO) test value was 0.906 which was greater than the 0.60 threshold indicating that the data was adequate for factor analysis (Sung et al., 2018). Also, Bartlett`s test was significant (P=0.000) as mentioned in table 2 indicating that the data were suitable for factor analysis. All the commonalities values were greater than 0.60 except for one item CA6 value was 0.590 which is approximately 0.60. The recommended threshold of commonalities greater than 0.6 which is considered the extracted components represents the variable very well (Byrne, 2013).

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.906
Bartlett's Test of Sphericity	Approx. Chi-Square	6745.761
	Df	300
	Sig.	.000

Principal components analysis explored the unidimensionality of each scale using an eigenvalue of 1.0 as the cutoff point (Byrne, 2013). Using SPSS, all constructs have been forced into four factors and rotated using the VARIMAX rotation method to assess their loadings.

Accordingly, as the result of the current final study showed; all of the items' values range from 0.758 to 0.963which is greater than 0.50 loads on their predicted construct that demonstrate a higher degree of association between the latent items and that constructs. The model includes 25 items describing 4 latent constructs: green product (GPD), green promotion (GPM), competitive advantage (CA), and business performance (BP).

4.3 Confirmatory factor analysis (CFA)

To evaluate the model fitness of the proposed model confirmatory factor analysis (CFA) was done. After the modification indices, a few items were deleted to obtain a model that better represents the data. As a result of the deletion, the new model fit summary table 3 shows the overall model fit of the proposed model. Chi-square (CMIN /χ^2=362.877, DF=264, CMIN/DF=1.375) indicates a good model fit (Sung et al., 2018). In addition, the fit statistics for this model indicated a good fit: GFI = .915; NFI = .948; CFI = .985; IFI = .985; TLI=.983; all of them are above the recommended thresholds 0.9 (Kline, 2010). The badness-of- fit is measured by RMSEA and the value is measured at 0.035, fulfilling the threshold value of less than 0.08. Also, the value of all constructs' squared multiple correlations are greater than zero (R^2>0.00). Thus, this can confirm that the Confirmatory Factor Analysis (CFA) model is acceptable.

Table 3: Model fit results (CFA)

S.no	Fit indices	Acceptable threshold	Result	Model fit verification
1	CMIN/DF	≤ 3	1.375	Good fit
2	GFI	≥0.9	0.915	Good fit
3	NFI	≥ 0.9	0.948	Good fit
4	TLI	≥ 0.9	0.983	Good fit
5	CFI	≥ 0.9	0.985	Good fit
6	IFI	≥ 0.9	0.985	Good fit
7	RMSEA	≤ 0.08	0.035	Good fit

Source: Own survey, 2022

4.4 Structural Equation Modeling (SEM)

After assessing & testing the measurement model& having found it satisfactory by using CFA. The next step in SEM analysis was to evaluate the structural model. It involves the statistical testing of hypothesized relationships between the constructs at a significance level of 0.05. The R2 analyses the variance and shows the explanatory power of the model (Byrne, 2013). The finding of the final model explains 94 percent of the variance in 'competitive advantage' and 92 percent of the model explains variance in 'business performance'. By running SEM analysis fit indices results were shown in table 4.

Table 4: Structural Model fit Results (SEM)

S.no	Fit indices	Acceptable threshold	Result	Model fit verification
1	CMIN/DF	≤ 3	1.461	Good fit
2	GFI	≥0.9	0.910	Good fit
3	NFI	≥ 0.9	0.975	Good fit
4	TLI	≥ 0.9	0.991	Good fit
5	CFI	≥ 0.9	0.992	Good fit
6	IFI	≥ 0.9	0.992	Good fit
7	RMSEA	≤ 0.08	0.039	Good fit

Source: Own survey, 2022

The results in table 4 dictate that the value CMIN /χ^2= 382.730, DF=262, CMIN/DF= 1.461 which indicates an acceptable level of model fit (Sung et al., 2018). The incremental model fit: GFI= 0.910, NFI= 0.975, IFI= 0.992, TLI= 0.991, CFI= 0.992 all of them are above the recommended thresholds 0.90 (Kline, 2010). The badness-of-fit is measured by RMSEA and the value was 0.039 which fulfills the threshold value of less than 0.08. Based on the results, it can be concluded that the overall fit indices are acceptable. The final specified model shows all the paths as indicated in figure 1 below.

Figure 2: Structural model
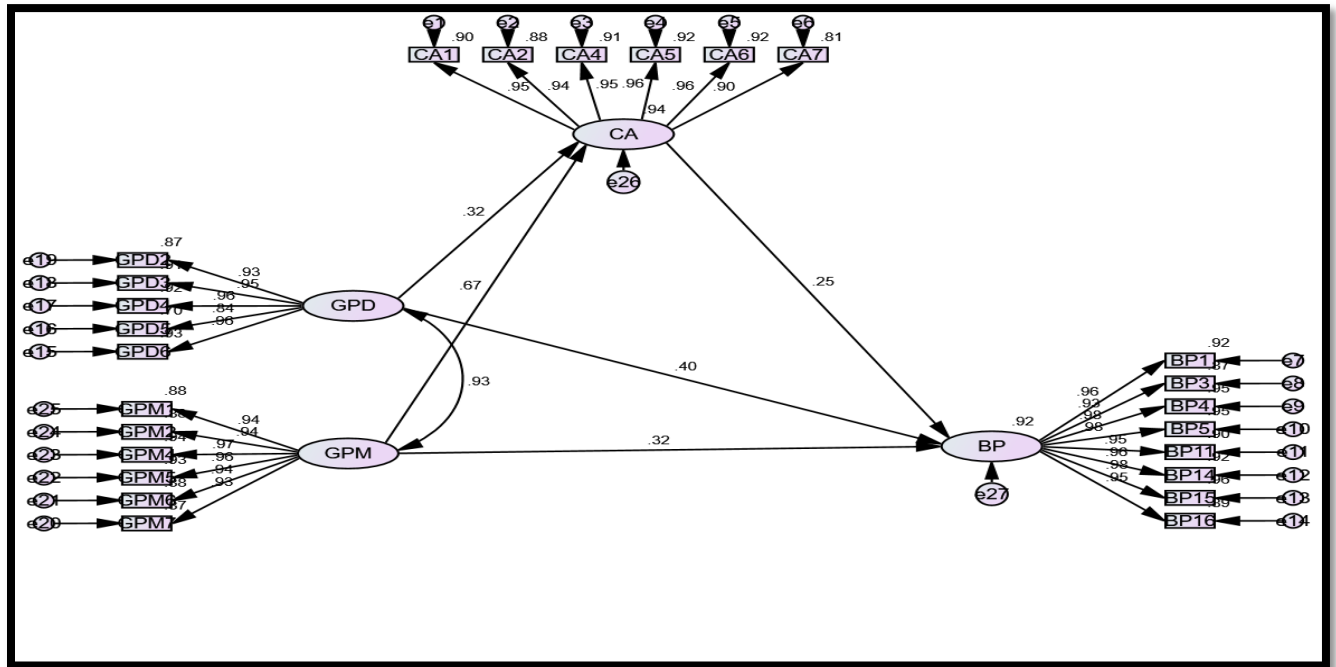
Source: Own survey, 2022

Note: GPD= Green product; GPM= Green promotion; CA= Competitive advantage; BP= Business performance

4.5 Hypotheses Tests

Figure 2 illustrates a final validated best-fit model with relevant hypotheses. Lines with arrows indicate hypothesized direct relationship among the different constructs (latent variables). This section provides the results of the preliminary formulated hypotheses developed out of the research hypotheses and objectives. The hypotheses were evaluated by examining standard regression coefficients and p-values. The direction and importance of the relationships are determined by the standard regression coefficient weights whereas the p-value indicates statistical significance at the level of 0.001, 0.01, and 0.05 respectively. Table 5 summarizes the results of the hypotheses tests and discussions presented hereafter.

Table 5: Hypothesized Relationships and Results

Hypotheses	Path/ proposed hypotheses relationship		Estimate	T-statistics	P-value	Accepted/Rejected
H1	Green product ➡	Competitive advantage	0.32	5.880	***	Accepted
H2	Green promotion ➡	Competitive advantage	0.67	11.837	***	Accepted
H3	Green product ➡	Business performance	0.40	6.729	***	Accepted
H4	Green promotion ➡	Business performance	0.32	4.047	***	Accepted
H5	Competitive advantage ➡	Business performance	0.25	2.958	0.003	Accepted

* Significance level <0.05; ** significance level <0.01; *** significance level <0.001

H1: Green product has a significant effect on competitive advantage

The results (refer to Table5) revealed that green products had a positive significant effect on competitive advantage. The standardized direct effect of green product on competitive advantage was 0.32 (p- value=0.000 <0.05).This means that when green product increases by 1 standard deviation, competitive advantage increases by 0.32 standard deviation. In addition, the finding shows a t-statistics value of 5.880 evidence that green product has a positive effect on competitive advantage. Thus, hypothesis H1 is accepted.

H2: Green promotion has a significant effect on competitive advantage

The results (refer to Table5) revealed that green promotion had a positive significant effect on competitive advantage. The standardized direct effect of green promotion on competitive advantage was 0.67 (p- value=0.000 <0.05).This means that when green promotion increases by 1 standard deviation, competitive advantage increases by 0.67 standard deviations. In addition, the finding indicates a t-statistics value of 11.837 evidence that green promotion has a positive effect on competitive advantage. Thus, hypothesis H2 is accepted.

H3: Green product has a significant effect on business performance

The results (refer to Table 5) revealed that green products had a positive significant effect on business performance. The standardized direct effect of green product on business performance was 0.40 (p- value=0.000 <0.05).This means that when green product increases by 1 standard deviation, business performance increases by 0.40 standard deviation. In addition, the finding shows a t-statistics value of 6.729 evidence that green product has a positive effect on business performance. Thus, hypothesis H3 is accepted.

H4: Green promotion has a significant effect on business performance

The results (refer to Table 5) revealed that green promotion had a positive significant effect on business performance. The standardized direct effect of green promotion on business performance was 0.32 (p- value=0.000 <0.05).This means that when green promotion increases by 1 standard deviation, business performance increases by 0.32 standard deviation. In addition, the finding shows a t-statistics value of 4.047 evidence that green promotion has a positive effect on business performance. Therefore, hypothesis H4 is accepted.

H5: competitive advantage has a significant effect on business performance

The results (refer to Table 5) show that competitive advantage had a positive significant effect on business performance. The standardized direct effect of competitive advantage on business performance was 0.25 (p-value=0.003<0.05).This means that when competitive advantage increases by 1 standard deviation, business performance increases by 0.25 standard deviation. Besides, the finding shows a t-statistics value of 2.958, evidence that competitive advantage has a positive effect on business performance. Therefore, hypothesis H5 is accepted.

Testing for mediation effect among variables using Smart PLS 3

To test the mediating effect of competitive advantage between the predictor variables (green product and green promotion) and the outcome variable (business performance) smart PLS 3 was used. The diagram below was generated through the 'consistent PLS bootstrapping' using smart PLS 3.

Figure 3: The structural model to test mediation effect
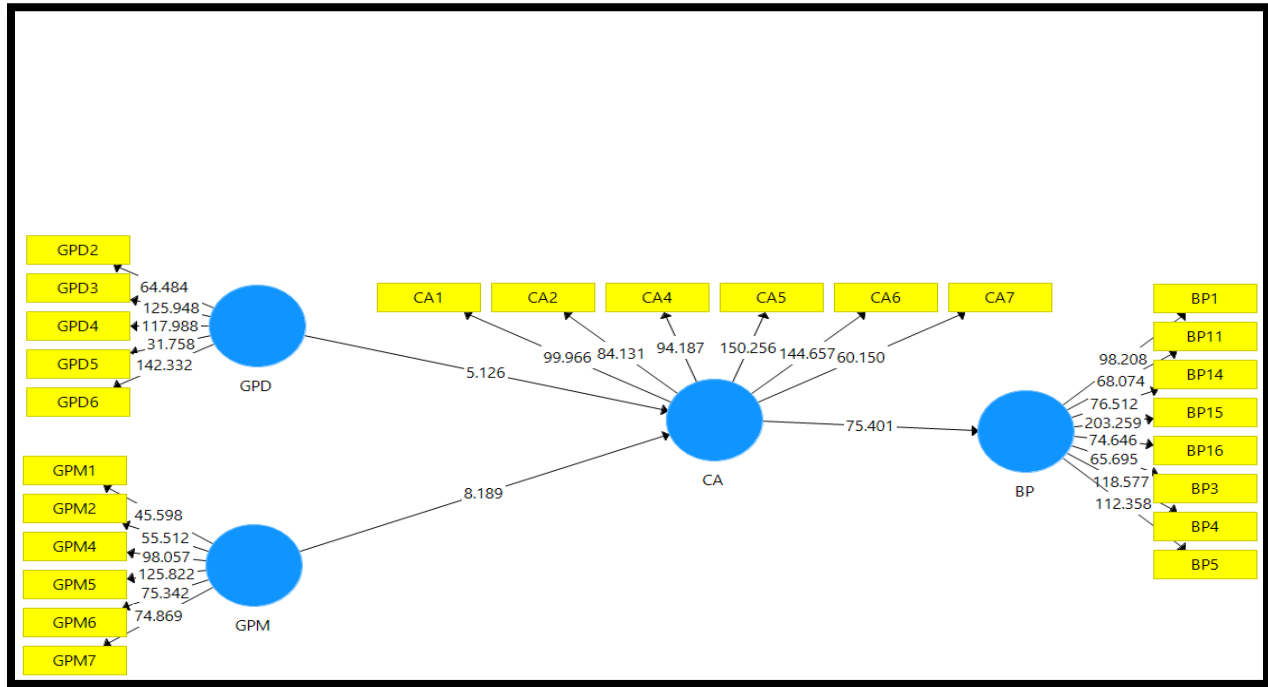
Source: Own survey, 2022

The standardized regression coefficient, t-statistics, and p-values were used to test the relationship. The required thresholds for t-statistics must be equal to or greater than 1.96 and the p-value must be less than 0.05 (Ringle et al., 2015). Both t-value and p-value thresholds are required simultaneously to define the proposed relationships.

Table 6: Hypothesized Relationships and Results of the mediation effect

Hypothesis	Path/proposed hypothesis relationship	Estimate	T-value	P-value	Accepted/Rejected
H6	Green product ➡ Competitive advantage ➡ Business performance	0.079	5.092	***	Accepted
H7	Green promotion ➡ Competitive advantage ➡ Business performance	0.167	8.169	***	Accepted

Source: Own survey, 2022

* Significance level <0.05; ** significance level <0.01; *** significance level <0.001

H6: *Competitive advantage has a significant mediating relationship between green products and business performance*

The results (refer to Table 6) above revealed that the relationship between the independent variable green product and the dependent variable business performance is mediated by competitive advantage. The standardized produced positive path coefficient value was 0.079 (p- value=0.000<0.05).This means that the mediating variable competitive advantage in this case positively mediates the relationship between green products and business performance. Besides, table 6 shows the t-statistics value of 5.092 which is above the required threshold of 1.96 as well as the p-value of 0,000 which is less than the required threshold of 0.05. This confirmed that competitive advantage significantly mediates the relationship between green products and business performance. Therefore, hypothesis H6 is accepted.

H7: *Competitive advantage has a significant mediating relationship between green promotion and business performance*

The result (refer to Table 6) above shows that the relationship between the independent variable green promotion and the dependent variable business performance is mediated by competitive advantage. The standardized produced positive path coefficient value was 0.167 (p- value=0.000<0.05). This means that the mediating variable competitive advantage in this case positively mediates the relationship between green promotion and business performance. Besides, table 6 shows the t-statistics value of 8.169which is above the required threshold of 1.96 as well as the p-value of 0.000 which is less than the required threshold of 0.05. This portrayed that competitive advantage significantly mediates the relationship between green promotion and business performance. Thus, hypothesis H7 is accepted.

5.   Discussion

This study aimed to test the hypothesized relations of the study. In this regard, seven hypotheses were introduced and tested the results are presented as follows: the results of the first and second hypotheses testing showed that the green product and green promotion have positive and significant effects on competitive advantage. This test is in line with research conducted by Maziriri (2018) which showed that green products and green promotion have a significant impact on competitive advantage. Therefore, medium and large-scale manufacturing firms should implement green products and green promotion in their organization to gain a competitive advantage.

The results of the third to fifth hypothesis testing showed that green products, green promotion, and competitive advantage have positive and significant effects on business performance. The results of this test can be in line with the results of W-H Goh(2019); Enaizan et al. (2020) and Buswari (2021) researches. They showed that green products and green promotion have a significant effect on business performance (W-H Goh, 2019; Enaizan et al., 2020). Competitive advantage has a positive effect on business performance (Buswari, 2021). Therefore, medium and large-scale manufacturing firms should implement green products and green promotion in their organization to enhance business performance.

Lastly, the results of the sixth and seventh hypothesis testing showed that the competitive advantage mediates between green products, green promotion, and business performance. The results of this test can be in line with the result of Manziriri (2018) which should that competitive advantage has a mediating impact between green products, green promotion, and business performance.

6.   Conclusions

This study concludes that green products and green promotion undertaken by medium and large manufacturing firms in the study area affect competitive advantage and business performance significantly. In turn implementation and improvement of green marketing practices (green product and green promotion) result in improved business performance. Competitive advantage significantly mediates the relationship between green marketing practices (green product and green promotion) and business performance. Finally, it is important to enhance the implementation of green marketing practices (green product and green promotion) to gain a competitive advantage and improved overall business performance in medium and large firms in the study area. The research also highlights some research limitations and suggestions for future research hereafter.

6.1 Limitations and suggestions for future research

This research is not free from limitations. The results of this study are based on the data collected through questionnaires from medium and large manufacturing firms and only a quantitative approach was applied. Another limitation of the results of this study cannot be generalized to other manufacturing industries other than medium and large manufacturing firms. So that it is recommended that future research should determine green marketing practices in other categories of industries. Furthermore, future studies can introduce other appropriate moderation or mediation variables like innovation and attitude between green marketing practices (green product and green promotion) and business performance relationships.

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