INTERNAL AND EXTERNAL GREEN DRIVERS AND ORGANIZATIONAL SUSTAINABILITY PERFORMANCE IN AGRO PROCESSING SME: VALIDATING THE CONNECTION

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Abstract

The green subject matter, especially on its driving factors and performance of firms in the Ghanaian manufacturing setting and Africa in general has become a matter of concern. Premised on theoretically backed literature on green manufacturing, green practices and performance, a model was presented. Dataset of 415 firms were analyzed. Using SPSS Amos 24, the structural equation modeling analysis was carried out. External green drivers were seen to directly relate with performance of firms in agro processing industry in Ghana than the green internal driving factors. With consumers being the end users of products, it would have been expected that that influence will be vital to the environmental responsibility of the firms. One distinct observation was the non significance relationship between consumer awareness demand and all three green performance parameters, requiring further inquiry into the reasons for this. Again, the state being a major stakeholder in the all affairs that pertains to the public, government is advised to take more interest in the activities of manufacturers of all sizes to ensure eco responsibility, and win-win economic and environmental benefits for all.

Keywords: Agro possessing, Green drivers, sustainability performance, SME

INTRODUCTION

Ecological concerns have come to be recognized as one of the prominent issues in globally due to its impact on the general wellbeing of man and his environment. It has not only gained this attention in political circles but also in the world of business. The reason is that, business activities have come been seen as being a major contributory factor to pollution on the planet. As a result, gradual awareness creation is changing the status quo on how businesses operate. Businesses across the world are responding to this awareness of stakeholders and therefore beginning to upgrade their processes and products into and eco-friendly ones hence improving their performance as seen by the various stakeholders.

Previously, organizations were much concerned with adopting practices that were internal to the organization in their effort to reduce environmental footprints. However, organizations have been implementing green practices that are internal to them in recent times. Greening has become a novel operational approach for modern manufacturing organizations at all levels towards environmentally responsible operations (Sawar et al. 2021). Majority of previous studies have investigated the impact of green practices on the performance of organizations and established positive as well as significant relationships among them (Çankaya and Sezen, 2019). However, there are certain internal and external green factors that drive organizations to go green and thus improve their green or sustainability performance. Vital as this may be, research in this context in sub Saharan Africa, especially Ghana is still very at its minimum. Thus, the objective of this study is to verify the impact of these internal and external drivers on the environmental, economic and innovation performance of small, medium enterprises operating in the agro processing industry in Ghana. This has become necessary because, green manufacturing facilitates the organization's competitiveness within the market.

LITERATURE

Relationship between green drivers and organizational Performance

The role of manufacturing in the economic development cannot be underestimated. However, it is the responsibility of manufacturing firms to be responsible towards the preservation of the environment irrespective of its size to reduce its negative impact on the environment. By being responsible, manufacturing organizations improve their performance in any related manner it negatively affects the environment while reaping the economic benefits.

The commitment of senior managers with support from staff is seen as very vital to the adoption of green practices, and subsequently enhances organizational performance (Tay et al. 2015). When employees are knowledgeable and dedicated on green and sustainable issues, it makes it easier for organizations to adopt eco friendly methods of production to improve

performance. Decisions on organizational finances by managers are necessary for the implementation of green practices, leading to organizational sustainability performance (Raut et al., 2017; Gardas et al., 2019).

Increased share of the market as well as the positive brand image, are some the results of the green practices which an organization adopts, which subsequently increases the returns. Policies of the organization which focus on implementing green processes and products helps to build the brand of the organization in market it operates in (Mangla et al, 2014). This green image of organizations ensures effective advertisement of their products, thus enhances their competiveness in its local and external market (Sharma et al., 2017).

The resources and capabilities possessed by the organization equally provide some advantages and thus offer it some competitive advantage (Han and Huo, 2020). Initial cost of investment in green initiatives is high, thus making availability of resource a significant input for organizational performance (Ghadge et al., 2020). According to Nkrumah et al. (2020), green capabilities seen as the technology, assets, quality human resource and their expertise held by an organization can enhance its environmental responsibility activities to meet stakeholders' expectation and thus improve its performance. They also expressed that, the distinctive resources and know-how on the environment enhances organizational sustainability performance.

The awareness and demand for green products and products made with green processes shapes the sustainability performance of organizations. Market feedbacks from customers on the eco friendliness of products, cleanliness of manufacturing and packaging compels organizations to become environmentally responsible and enhances their general performance (Raut et al., 2017). In Santos et al (2019), it was emphasized how managers in their effort to meet the demands of consumers seen as key stakeholder in the supply chain tend to embrace and implement green initiatives. Being the end users of products and services, previous studies have established their impact on green adoption and subsequent performance of adopting firms.

Stakeholder demands have driven organizations to adopt clean practices. Going green also drives important competition and as such organizations tend to implement green practices (Raut et al. 2017). As these demands from stakeholder keep coming, firms are compelled to implement green processes and produce green products. This and other strategies adopted by manufacturers to attain good image and increased market share pressurizes competing organizations to adopt similar strategies, thereby improving their performance within the industry. Competitive pressure compels managers to seek and implement green practices efficiently in their operations (Gardas et al., 2019).

The pressure emerging from the state and in certain instances civil society organizations, nongovernmental organizations and international organizations compel organizations to improve their performance through the implementation of green practices (You et al., 2019). Again, Gardas et al. (2019) postulates that state regulations and policies on organizational environmental responsibility are vital in implementing green initiatives in firms. Environmental certification from the state also directs organizational internal policies towards green initiatives.

Organizational Sustainability Performance

Environmental performance points to how organizations initiate activities that preserve the environment from the negative impact of their operations. Green practices that are driven by certain green drivers get implemented to fortify the protection of the environment using mitigating measure and processes per environmental regulations (Das, 2018). Environmental performance enhances the organization's capability to minimize hazardous environmental footprints (Sarwar et al. 2021).

Economic performance (ECO) emphasizes on the on how the firm is able to minimize the expenditure on inputs and processes in the course of their operation (Micheli et al. 2020). In the study of Sarwar et al (2021), they expressed based on the natural resourced based view that the adoption of green initiatives empower businesses to receive economic benefits through the reduction of energy cost, improved corporate reputation, increased market share and reduction in waste.

Innovation performance such as green innovation also referred to as eco-innovation describes novel and upgraded processes, equipment and methods that reduce hazardous environmental impact (You et al., 2019). Green innovation is vital to organizational performance from contexts such as environmental management and fulfilling requirements demanded by official environmental rules (Wakeford et al. 2017). In other instances, businesses in their effort to avoiding sewage charges imposed by government resort to conscious green innovation processes and initiatives that in turn improves their performance (Liao, 2018).

H1a: Management and staff commitment has significant relationship with environmental performance

H1b: Financial and business benefits has significant relationship with environmental performance

H1c: Firm resources has significant relationship with environmental performance

H1d: Consumer awareness/demand has significant relationship with environmental performance

H1e: Competitor influence/pressure has significant relationship with environmental performance

H1f: National environmental regulation has significant relationship with environmental performance

H2a: Management and staff commitment has significant relationship with economic performance

H2b: Financial and business benefits has significant relationship with economic performance

H2c: Firm resources has significant relationship with economic performance

H2d: Consumer awareness/demand has significant relationship with economic performance

H2e: Competitor influence/pressure has significant relationship with economic performance

H2f: National environmental regulation has significant relationship with economic performance

H3a: Management and staff commitment has significant relationship with innovation performance

H3b: Financial and business benefits has significant relationship with innovation performance

H3c: Firm resources has significant relationship with innovation performance

H3d: Consumer awareness/demand has significant relationship with innovation performance

H3e: Competitor influence/pressure has significant relationship with innovation performance

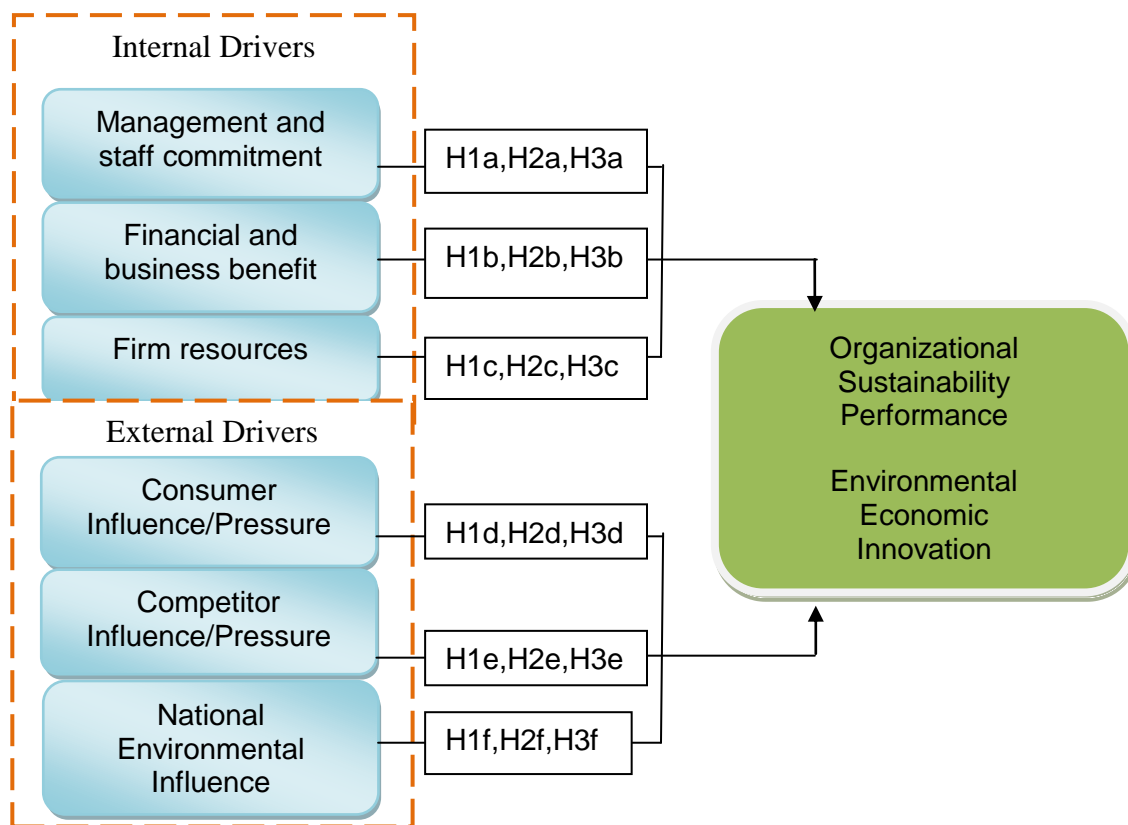H3f: National environmental regulation has significant relationship with innovation performance

Figure 1: Conceptual framework of the study

Legend H1: Environmental Performance, H2: Economic Performance, H3: Innovation Performance

METHOD

Survey development

The objective of this study was investigated using the responses from a survey questionnaire. Respondents from this study were sampled from three regions in Ghana comprising Ashanti, Eastern, and Greater Accra regions and known for small, medium agro processing firms. In all, 415 questionnaires were usable for analysis. The set of research questions were dispatched to operation and productions supervisors that are familiar with the productions processes of the sampled firms. After receipt of the questionnaire, each respondent was briefed on the study and any inquiry answered. Their contacts were collected to ensure regular contact on the progress of the questionnaire answering.

Using reviewed literature a structured set of questionnaire with six primary constructs comprising internal factors (management and staff commitment - MSC, firm resources - FRS, financial and business benefits - FBB), external factors (consumer awareness and demand - CAD, competitor influence/pressure - CIP, national environmental regulations - NEI), while the dependent variable being organizational sustainability performance comprised environmental, economic and innovation dimensions. The variables were measured on a five-point Likert-type scale ranging from 1 = strongly disagree to 5 = strongly agree.

Sampling Method

The researcher employed judgment sampling also known as purposive sampling, a method where the researcher uses his knowledge of the population to select the sample. The researcher based on this knowledge uses judgment to settle on respondents that have the responses that are relevant to answering the research questions. This sampling method is also appropriate as it is convenient and manages data gathering expenditure. The research sample consists of SME agro processing firms that are registered with the Ghana Enterprise Agency (GEA), the body that regulates the activities of SMEs in Ghana. Again, sample SMEs based on GEA standards included in this study are those that have working capital equivalent to $100,000 excluding land and buildings.

Analytical procedure

A chi-square test and other statistics were applied for the analysis of the gathered data as captured in the tables. A chi-square is considered to be valid on the notion that there is no cell with an estimated frequency of less than 5. An appropriate test is conducted to test the relationship between the dependent variable and the independent variable at the 0.05 significance level. Structural Equation Modeling (SEM) was used to test the hypotheses. This

method applies factor analysis, thus ensuring more efficiency than a regression model that treats concepts and analysis separately (Wagner, 2015).

In the application of SEM in our analysis, we considered 9 latent variables and the direct and indirect relationships among them. These comprised the independent variables comprising (MSC, FBB, FRS, CAD, CIP, and NEI). There was the dependent variable being organizational performance and comprising (ENO, ECO, and INO). In all, 455 of questionnaire were received giving a response rate of 81.20% and 415 were usable for analysis. The data was examined for its reliability and validity by using SPSS Amos 24 statistical tool through correlations and Cronbach alpha values.

RESULTS AND DISCUSSION

Table 1 below represents the demographic information on the sample firms.

Table 1. Demographic profile of agro processing firms.

No.	Variable	Category	Freq.	Percent (%)
1	Years of Operation (N=415)	<10	108	26.0%
		10 - 20	174	41.9%
		>20	133	32.0%
2	Environmental management registration Status (N=415)	Registered	275	66.3%
		Not Registered	140	33.7%
3	Environmental management unit (N=415)	Have	279	67.2%
		Do not Have	136	32.8%
4	Environmental management policy (N=415)	Have	263	63.4%
		Do not Have	152	36.6%

Factor analysis on observed constructs of the research

Reliability and validity were tested accordingly. Reliability was ascertained using Cronbach's alpha values. It can be seen from Table 2 that, the value for each model is higher than 0.7, an implication that the adopted scale has a stable and acceptable reliability in consistence with the technique developed by Hair et al. (2014). Again, the validity of the data was verified using the average variance extracted (AVE) test, all of which were higher that the acceptable threshold of 0.5 in line with the technique used by Hair et al. (2014).

Table 2. Factor analysis on observed constructs

Variable	Factor Loading	AVE	Cronbach's Alpha
Management and Staff's GM Commitment (MSC)			
MSC1	0.860	0.682	0.840
MSC2	0.816		
MSC3	0.716		
MSC4	0.639		
Financial and Business Benefits (FBB)			
FBB1	0.754	0.646	0.724
FBB2	0.651		
FBB3	0.651		
Firm's Resources (FRS)			
FRS1	0.803	0.667	0.749
FRS2	0.680		
FRS3	0.644		
Consumer awareness and demand (CAD)			
CAD1	0.749	0.550	0.781
CAD2	0.699		
CAD3	0.686		
CAD4	0.589		
CAD5	0.582		
Competitor influence or pressure (CIP)			
CIP1	0.815	0.679	0.761
CIP2	0.714		
CIP3	0.634		
National environmental regulations and Civil Society Groups' influence (NEI)			
NEI1	0.755	0.585	0.763
NEI2	0.695		
NEI3	0.659		
NEI4	0.562		

The post structural analysis results on the relationship between green drivers and performance are presented in Table 3.

Table 3. Results on relationship between drivers and environmental,
economic and innovation performance

Path of Influence			Estimate	S.E.	C.R.	P	Stand. Reg. Weight	Conclusion
ENO	<--	MSC	0.209	0.132	1.586	0.113	0.3	Not Supported
ENO	<--	FBB	-8.575	2.616	-3.277	0.001	-3.087	Supported
ENO	<--	FRS	0.063	0.167	0.376	0.707	0.073	Not Supported
ENO	<--	CAD	0.151	0.209	0.725	0.469	0.138	Not Supported
ENO	<--	CIP	0.425	0.162	2.617	0.009	0.565	Supported
ENO	<--	NEI	0.765	0.278	2.755	0.006	0.91	Supported
ECO	<--	MSC	-0.209	0.099	-2.108	0.035	-0.273	Supported
ECO	<--	FBB	4.845	0.733	6.612	***	2.645	Supported
ECO	<--	FRS	0.045	0.13	0.348	0.728	0.047	Not Supported
ECO	<--	CAD	-0.183	0.161	-1.141	0.254	-0.153	Not Supported
ECO	<--	CIP	-0.426	0.127	-3.366	***	-0.514	Supported
ECO	<--	NEI	-0.839	0.189	-4.43	***	-0.894	Supported
INO	<--	MSC	0.371	0.193	1.927	0.054	0.423	Not Supported
INO	<--	FBB	-9.913	5.477	-1.81	0.07	-3.172	Not Supported
INO	<--	FRS	0.12	0.206	0.582	0.561	0.11	Not Supported
INO	<--	CAD	0.327	0.276	1.185	0.236	0.238	Not Supported
INO	<--	CIP	0.518	0.245	2.111	0.035	0.543	Supported
INO	<--	NEI	1.209	0.409	2.958	0.003	1.159	Supported

Notes: *** p< .001, * p< .05 significant level.

From Table 2, FBB was the only driver among internal drivers with significant relationship with ENO. The rest had less influence on ENO. On the external drivers, CIP and NEI had significant relationship with ENO except CAD. Again, it can be observed that, MSC and FBB had a significant relationship with ECO while FRS had no significant relation with ECO. Among the external drivers, CIP and NEI were significantly related with ECO. However, CAD was not statistically significant with ECO.The results from the analysis also presented that all internal drivers had no effect on innovation performance at the accepted statistically significant level. However, two external drivers CIP and NEI were significantly impacting on INO. Green driver CAD had no significant impact on INO.

Structural modelling path diagrams for the relationship between green drivers and organizational sustainability performance
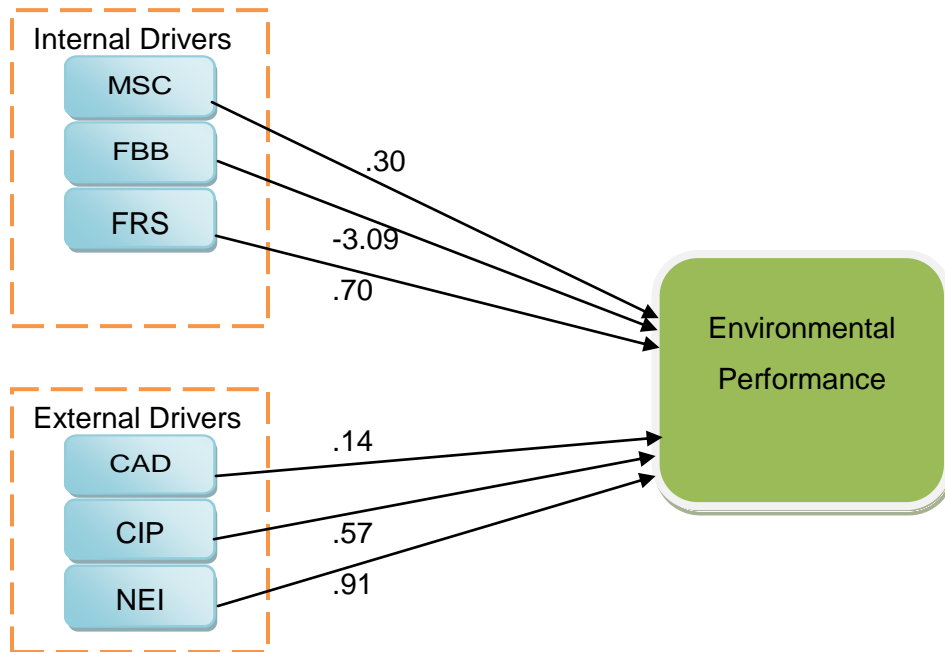

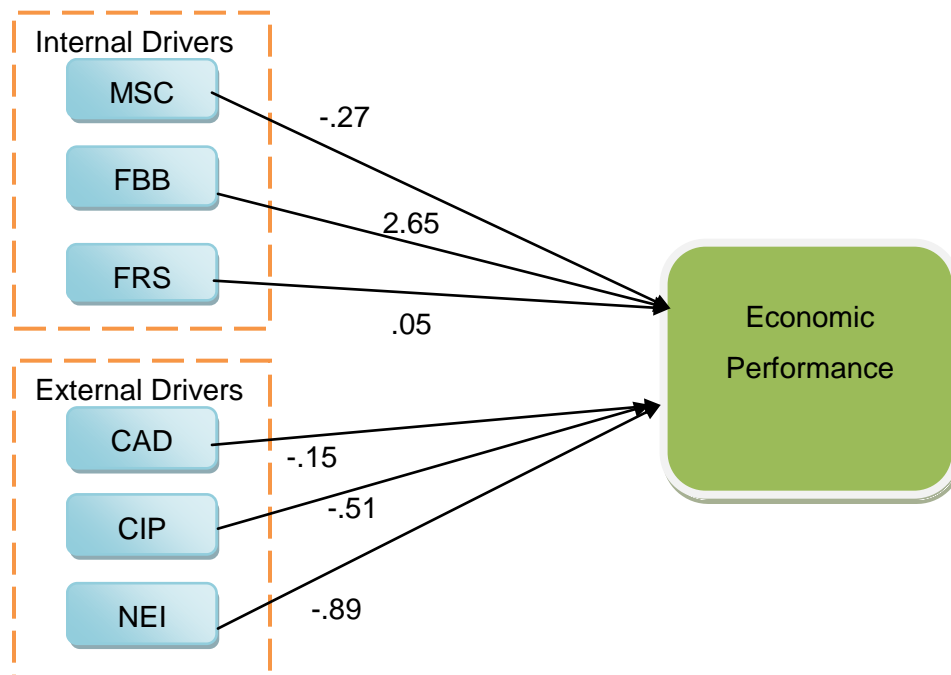Figure 2: Path diagram of relationship between green drivers and environmental performance

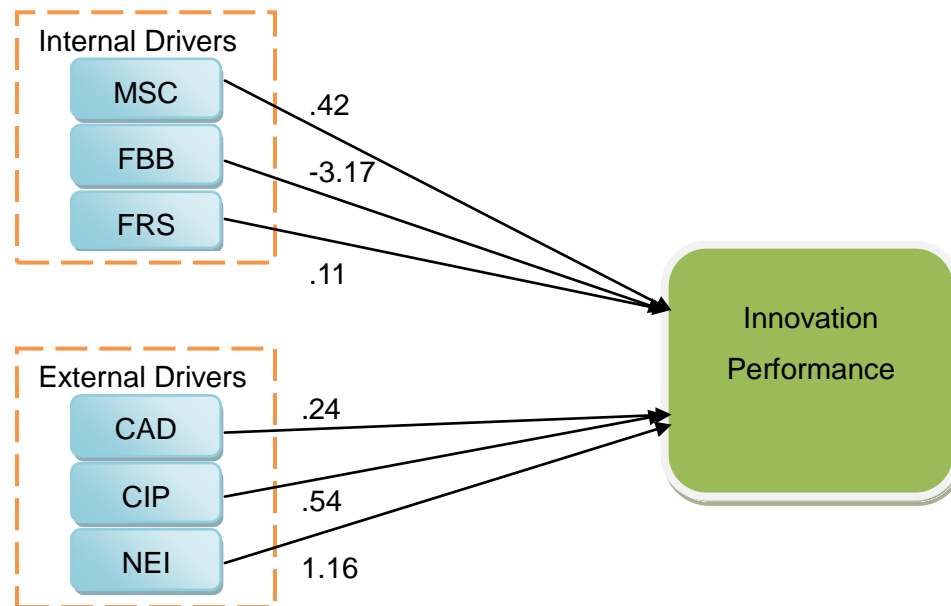Figure 3. Path diagram of relationship between green drivers and economic performance

Figure 4. Path diagram of relationship between green drivers and innovation performance

DISCUSSION

The findings imply is inconsistent with Genç and Benedetto (2015) who found that green conscious management and staff leads to successful integration of green strategies and subsequently in eco-performance. However, it is contrary to Fernando and Wah (2017). The assertion by Youn, Yang, Hong et al. (2013) that green benefits such as good brand image, sales growth enhance environmental performance agrees with the findings that FBB impacts environmental performance.

The current study also is in disagreement with Abu et al. (2015) and Fernando et al (2016) both of which postulated that firm resources and capability improve business and environmental performance.

Again, the non significance relationship between CAD and environmental performance is opposing to the assertion by Pusavec et al. (2010) that consumer demands drives firms to design eco-friendly products. Hojnik and Ruzzier (2016) also validated the impact of competitors on competing firm's environmental responsibility, and this assertion agrees with the findings in this study. Cao and Chen (2019) shared similar relationship between CIP and environmental performance.

The results of this study confirmed that, compliance with NEI enhances the environmental performance. This is supported by Barrutia and Echebarria (2015) and (Fernando, Jabbour and Wah, 2019).

On economic performance, the outcome of the current study draws a significant relationship with MSC, an outcome that agrees with Leonidou et al. (2015). A similar conclusion was draw by Bhanot et al. (2017). Again, the findings of this study is supported by Garg et al., (2014) that expressed that firms adopt eco-friendly practices for improved product quality and increased share of market, thus setting a significant relationship between FBB and economic performance. However, FRS and economic performance had no significant relationship, a findings contrary to the findings of Sheikh et al. (2016).

A non significant CAD and economic performance relationship in this study is in agreement with Huang et al. (2017) who established no relationship between consumer demand and economic performance. The significant relationship between CIP and economic performance was confirmed in this study, thus supported by Maryam Masoumi et al. (2015) in their study. Huang and Huang (2016) also agree with same. In other words, competitor pressure is an achieving factor for subsequent economic performance. Prior studies (Yusof et al., 2017) advanced that; NEI plays a vital role in green practices adoption for economic performance. This complements the findings of this study that NEI has a significant relationship with economic performance.

On innovation performance, the finding of this study was contrary to the assertion of Yang et al. (2018) who expressed that how managers respond to institutional pressure on Proactive Environmental Strategy (PES) enhance innovation capabilities, because MSC and innovation performance were not significantly related in this study. However, Dubey et al. (2015) supports our findings. Again, financial and business benefits had no significant relationship with innovation performance, a finding that is supported by Hojnik and Ruzzier (2016). However, Albort-Morant et al. (2016) established a significant relationship. Like other internal drivers, FRS also showed no significant relations with innovation performance, contrary to the findings in Fernando et al. (2019). In view of this, a possible further study could be done to find the reasons behind all internal drivers having no significant relationship especially in the Ghanaian setting.

From the external drivers' context, this study presents a no significant relationship results between consumer awareness and demand, and innovation performance, as opposed to the findings of Zhang and Zhu (2018), possibly due to low consumer pressure in the research location for green novel products. The significant relationship between competitor pressure and innovation performance in this study aligns with the findings of Alt et al (2015) and Walker et al (2014) who found a considerable connection. One of the major influencers of firms' policies is national regulations. In agreement with this assertion, there existed a significant connection between national environmental regulations and innovation performance in this study. The work of Liu et al (2015) is one such study. Again, Berrone et al (2013) further complements the

findings of this study that, environmental regulations are a motivation for green innovation performance.

LIMITATIONS

It cannot be downplayed that this study had a number of limitations worth mentioning. Our study was centred on small, medium enterprises only while ignoring large enterprises. The reasons that drive small, medium firms may not necessarily be same for with large firms, thus future study could be done to compare large enterprises. Again, data were collected from only three out of ten regions in Ghana. Further research could be carried out to focus on more regions to know if there will be any different research outcomes. This study considered only six drivers. However, there may be other drivers and the extent to which they may drive firms to go green. Therefore, future research could also consider other drivers to ascertain how they compel firms to adopt green practices. Lastly, as much as 510 questionnaires were sent out but only 455 were returned, while out of this 415 were good for analysis due to poor answering although enough pre answering education was done with each respondent. This reduced the sample size the researchers had preferred to use.

CONCLUSION

Based on the analysis and discussion, this study can conclude that, internal drivers have less positive direct impact on environmental consciousness of agro processing firms in developing countries like Ghana. External drivers, especially pressure from environmental regulations exhibited capacity to positively affect environmental consciousness, economic gain and innovation performance better than internal drivers. Thus, it is advised that, measures be put in place by stakeholders so that barriers that inhibit motivations from internal drivers for firm performance are minimized for sustained and economically growing green agro processing industry. It is necessary that, although many agro processing SMEs in Ghana are generally singularly owned, they should be sensitized on the need to become ecologically responsible in their management approach and decision, hence it must be encouraged among firms as well as the other practices for sustainably performing industry.

The study further points to the fact most firms in the Ghanaian small, medium agro processing industry were not driven by internal factors such as managers' commitment and resources, possibly because they lack the funding required for investing in certain green resources. Therefore, governments and decision-makers can provide some loans and grants for them to become green and complement motivations from external drivers.

Although certain green drivers such as consumer awareness and demand has had positive connection with environmental, economic and innovation in other geographical locations, the no significance connection with all three performance comes as a surprise and that a future study to ascertain whether its impact is location specific can go a long way to expand the green or sustainability body of knowledge. It is equally suggested that, there must be some university-industry-government collaboration to sensitize manufacturers in a sizes of firms on the novels eco-friendly techniques of developing products and services and the benefits therein in term of business and the environment. This is because; a green oriented management will always seek to adopt what it believes in, understand and feels positive about.

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