

Innovation orientation and performance of small and medium-sized enterprises (SMEs) in Ghana: evidence from manufacturing sector

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Abstract

Purpose – The purpose of this paper is to assess the influence of innovation orientation dimensions on the performance of manufacturing small- and medium-sized enterprises (SMEs) in Ghana.

Design/methodology/approach – Probability sampling technique, particularly, simple random method, was used for this study. Approximately, 81% response rate was achieved from a total sample size of 346. Furthermore, PLS-SEM technique was used to determine the relationships among the study variables.

Findings – The result showed that market innovation significantly predicted SMEs' performance. Conversely, non-significant positive nexus was established between process innovation and SMEs' performance as well as product innovation and SMEs' performance.

Practical implications – Based on the outcome, the stakeholders in the SME sector should aim at improving their market, products and process innovations.

Originality/value – Despite the importance attached to the employment of innovation in the SME sector by scholars in the extant literature, studies involving dimensions of innovation orientation on SMEs' performance were not much seen in literature. This study enriched literature by determining the relationships between the innovation orientation dimensions and SMEs' performance.

Keywords Performance, Ghana, SMEs, PLS-SEM, Manufacturing sector, Innovation orientation

Paper type Research paper

1. Introduction

The presence of competition in the modern-day business environment has been a factor compelling small- and medium-sized enterprises (SMEs) to look for an imaginative and more improved ways to survive (Casals, 2011). Thus, SMEs, which fail to address this developmental trend happening in the marketplace, would soon see retrogression in their performances (Aksoy, 2017). Because of this, SMEs must enhance their competitive position by designing, producing and marketing products that are unique from rivals' offering



(Rosli & Sidek, 2013; Sutapa, Mulyana, & Wasitowati, 2017). Buenechea-Elberdin (2017) asserted that SMEs that strengthen their innovativeness grab greater opportunities in the marketplace. In the view of the author, long-term competitiveness and performance enhancement are products of innovation. Nguyen and Pham (2009), Bigliardi and Domio (2009) and Aksoy (2017) averred that since innovation is seen as a strong weapon for firms to acquire competitive superiority and increase their profits, it can be considered as an important construct for the long-term survival of establishments. This, therefore, suggests that firms that do not engage in innovation would soon face out from the competitive arena, as they will not be able to counter the competitive pressures from innovative establishments.

In the view of Ribau, Moreira and Raposo (2017), maintenance of international competitiveness is dependent on innovation. Furthermore, Gaynor (2002) asserted that growth, success and sustainable viability of organisations in an international arena is at the mercy of deployment of an innovation by businesses. In the light of this, Porter and Stern (2001) advanced that firms pursuing excellence must be able to develop new products and processes that extend the technological boundary, “while at the same time keeping a step or two ahead of their rivals”. Similarly, Çalipinar (2007) argued that development of an innovation is dependent on the establishment’s technological sufficiency, autonomy, managerial quality and past innovation experiences. Correspondingly, in the work of OECD (2005), it was argued that process and product innovation in the organisations develop organisational innovativeness and organisational innovativeness develop the firms’ performance.

Innovation-performance linkage is grounded in resource-based theoretical perspective. This perspective explains how resources of an organisation influences competitive position and performance of a firm (Barney, 1991). From the theoretical perspective, organisations with strategic resources allow them to create and put into action strategies needed for competitive edge and performance. Thus, a resource-based view would help determine how a firm’s innovation orientation can help the firm strengthen its competitive position and hence performance. Considering valuable economic and social contributions offered by SMEs to various countries, deployment of innovation orientation should be necessary for them. This is because deployment of innovation orientation has been seen as a grantor of SMEs continuous survival in the marketplace.

According to Aksoy (2017), innovation pressures are applicable to both large and SMEs. Scholars have noted that the fertility of SMEs in terms of innovation is often greater as compared to large enterprises (OECD, 2004; Buenechea-Elberdin, 2017). Comparative advantages of SMEs over large establishments in innovation are their flexibility and swiftness of response to the developments in the marketplace (Fossas-Olalla, Minguela-Rata, López-Sánchez, & Fernández-Menéndez, 2015). Steele and Murray (2004) and Simpson, Siguaw, and Enz (2006) opined that if SMEs want to be successful and remain competitive in the creation of new products, they should promote innovative culture. The arguments from the preceding scholars indicate that maintenance of SMEs competitive market position is dependent on their deployment of innovation culture.

Though importance has been attached to the employment of innovation in the SMEs sector by scholars in the extant literature, studies involving influence of innovation orientation dimensions on performance of SMEs within the developing country’s setting like Ghana is yet to be established. However, since deployment of innovation culture by SMEs has been seen as a backbone of successful performances and maintenance of competitive position of them (Steele & Murray, 2004; Simpson et al., 2006), this study is necessary to address the challenges experienced by SMEs in a developing country such as Ghana. More importantly, considering the enormous contribution of SMEs to the world economy, it would

be prudent for them to be strengthened. According to the report from [International Trade Centre \(2016\)](#) (ITC), it was established that SMEs in Ghana contribute around 70% to Ghana's gross domestic product (GDP). The report also indicated that SMEs represent 85% of businesses in Ghana. The ITC's (2016) report also affirms the conclusion reached by [Abor and Quartey \(2010\)](#) that progress of SMEs particularly those in Ghana have often been halted by factors such as access to finance for expansion, access to appropriate technology, ability to be innovative to produce unique products and muscles for commanding competitors. It is, therefore, prudent to determine whether deployment of innovation orientation by SMEs in Ghana would help salvage them from their hurdles. Thus, this study seeks to investigate the influence innovation orientation dimensions are having on the performance of manufacturing SMEs in Ghana.

2. Literature review and hypotheses development

2.1 Firm innovation

According to [Cherrafi, Garza-Reyes, Kumar, Mishra, Ghobadian, and Elfezazi \(2018\)](#), brisk adjustments made in the global and business setting in the past have compelled firms to embrace innovation to challenge competition posed by competitor firms, thus making innovation necessary for the survival and advancement of businesses. [Hilman and Kaliappen \(2015\)](#) see innovation as an uprising new market, new product and service, new organisational pattern, generator of supply and new production method. To the authors, organisations' ability to offer new products, facilitate organisational growth and use opportunities to improve and upgrade competitiveness can be regarded as innovation. Agreeably, [Rousseau, Mathias, Madden, and Crook \(2016\)](#) also defined innovation as the "production or adoption, assimilation and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services and markets; development of new methods of production; and establishment of new management systems".

Researchers ([Lendel, Hittmar, & Siantova, 2015](#); [Marzi, Dabic, Daim, & Garces, 2017](#)) have indicated that survival and growth of manufacturing firms that are innovative are often swift and, hence contribute to economic growth and development. [Lendel et al. \(2015\)](#) further advanced that innovativeness should be considered as a multifarious concept made up of several constructs. Agreeably, [Nguyen and Pham \(2009\)](#) and [Bigliardi and Domio \(2009\)](#) argue that firm innovation can be reflected in "the extent to which a firm can introduce new product, new production processes, modify the existing products and exploit new territorial markets and segments within existing markets". Consequently, [Kahn \(2018\)](#) averred that though innovation is a concept with diverse constituents, the most common constituents are "product innovation", "process innovation" and "market innovation". These constituents are not different from the elements found in the [Schumpeter's \(1934\)](#) definition of innovation. [De Jong and Marsili \(2006\)](#) submit that innovative practices of SMEs are highly differentiated from their larger counterparts because of differences in their business set-up and practices. The closeness of SME owners to their employees is greater compared to that of large establishments ([De Jong & Marsili, 2006](#)). Hence, SME owners with innovation orientation could swiftly orient the entire establishment with innovative practices. Therefore, exploring of innovative practices in the SMEs sector is decisive, as it will enhance their swiftness in responding to fast changing business environment. To [Boer and During \(2001\)](#), for firms to achieve success in the marketplace, the type of innovation to be used must be carefully analysed and changed if there is a need for that. According to the authors, deployment of the aforementioned innovations must be balanced and equal attention should be given to each constituent. [Boer and During \(2001\)](#) opined that though

balanced deployment of the innovations does not necessarily assure success, failure to meet that may be detrimental to an establishment. Therefore, firms must appreciate innovativeness and ensure that it fits with their strategic context and organisational setting (Taran, Boer, & Lindgren, 2015).

2.1.1 Process innovation. This involves introducing new elements such as new methods of production, approaches of management and new technologies into organisations (Nguyen & Pham, 2009; Bigliardi & Domio, 2009; Lendel et al., 2015; Milewski, Fernandes, & Mount, 2015) which can help firms take advantage and improve efficiency of production and reduced cost (Kahn, 2018). Accordingly, Cherrafi et al. (2018) asserted that implementing process innovation could increase firm's operational output, customer satisfaction and even firm's financial performance. According to researchers (Milewski, Fernandes, & Mount, 2015; Ashok, Narula, & Martinez-Noya, 2016), process innovation comprises inter-linked factors that has an effect on different functions in the establishment. The researchers postulated that through process innovation, generation and implementation of unique production methods that are valuable to users are possible. Process innovation is more pronounced in the manufacturing sector because it is seen as a basis of distinctive competitive edge of the sector (Nemetz & Fry, 1988). Many researchers (Morone & Testa, 2008; Anderson, 2009; Murat Ar & Baki, 2011) have found positive influence of process innovation on firm performance. A study by Varis and Littunen (2010) on Finland SMEs affirms the aforementioned claim between the constructs.

Marzi et al. (2017) asserted that process innovation scientifically could be seen as an organised and controlled episodes of actions where innovative ideas are processed and converted in a form of innovation. Marzi et al. (2017) again indicated that process innovation is an arrangement of actions that are intended to create and apply innovative ideas and include all activities from idea generation through to the outcome of the product. Creative idea is not an innovation unless it was commercialised or currency is gain on it (Van de Ven, 1986). Van de Ven (1986) further argue that innovative ideas are not easily noticed by firms operating in a stable atmosphere but rather those operating in hectic environment. According to Lendel et al. (2015), and Un and Asakawa (2015), process innovation is worth undertaking because it improves upon profits, the competitiveness of the company and improves performance by eliminating waste. To the authors, deployment of process innovation is a needful activity, as it enables firms attain greater efficiency, meet up with competition and grow quality products. Process innovation improves if firms engage in effective communication, collaboration and efficient work development (Rothwell, 1977). Hence, considering innovation, an organization-wide task should be encouraged. Despite the increasing importance attached to process innovation, dearth information exists on it in literature (Caputo, Marzi, & Pellegrini, 2016). Thus, more studies are needed to improve the operational understanding of the construct within the context of a developing country such as Ghana. Therefore, the following hypothesis is put forward:

- H1. Process innovation is positively and significantly related to performance of manufacturing SMEs.

2.1.2 Product innovation. According to Nguyen and Pham (2009), Bigliardi and Domio (2009), and Caputo, Greco, D'Amato, Notaro, and Spada (2016), product innovation is the introduction of products based on customer demands, expectations and needs in the market. Snihur and Wiklund (2019) indicated that product innovation is commercialisation of products to conform to the consumers' expectations and needs. Rousseau et al. (2016) asserted that product innovation makes it possible for dynamic businesses to take advantage of being first to satisfy the needs of consumers. Camison and Villar López (2010)

advanced that firms can derive their competitive advantage from product innovation. This is because through product innovation products quality can be enhanced, thereby contributing to firms' performance and competitive advantage, respectively. [Hernández-Espallardo and Delgado-Ballester \(2009\)](#), [Varis and Littunen \(2010\)](#) and [Rosli and Sidek \(2013\)](#) opined that positive relation exists between product innovation and performance of firms. However, a meta-analysis study by [Rousseau et al. \(2016\)](#) on the innovation and firm performance concluded that combination of product and process innovation produces a positive performance gains than product innovation alone. Thus, businesses need to embrace the innovation types and look at how to balance them to achieve the maximum benefit in the marketplace. Innovation should be seen as an organization-wide task ([Rothwell, 1977](#)) to orient every unit of firm about the newness of its product. Else, firm's product innovation may be unnoticed by some of their units. This called for effective communication and collaboration among the firm's constituents. The question is does the nature of SMEs permits such communication and collaboration to occur. This could be substantiated through empirical investigation. The argument aforesaid led to the development of the second hypothesis:

H2. Product innovation is positively and significantly related to performance of manufacturing SMEs.

2.1.3 Market innovation. According to [Johne \(1999\)](#), and [Rosli and Sidek \(2013\)](#), market innovation involves meeting customers' preferences of purchase through appropriate market mix and market selection. In the view of the authors, firms should engage in market innovation on continuous basis because developmental trends occurring in the marketplace owing to technology makes it possible for their customers to be swept by competitor firms without any difficulty. Thus, market innovation could be considered as major activity to be undertaken by firms, as it helps companies to respond to market opportunities and needs ([Rodriguez Cano, Carrillat, & Jaramillo, 2004](#)). [Appiah-Adu and Singh \(1998\)](#) advanced that meeting customers' needs and demands should be the reason for the deployment of market innovation by establishments. From the aforesaid, it can be averred that market innovation plays an important role in the establishment's success. In [Sandvik's \(2003\)](#) study, it was discovered that market innovation has a positive influence on sales growth of an organisation. To [Johne and Davies \(2000\)](#), market innovation produces profit to innovative organisations through growth in sales. Similarly, [Otero-Neira, Tapio Lindman, and Fernández \(2009\)](#) established that market innovation positively influence performance of an organisation. [Varis and Littunen \(2010\)](#) also confirmed a highly significant relationship between a market-related innovative activity and performance of an organisation. Thus, the third hypothesis is put forward:

H3. Market innovation is positively and significantly related to performance of manufacturing SMEs.

2.2 Firm performance

The term performance is not a new concept in the field of business study ([Aminu & Shariff, 2015](#)). Though many performance measurements exist, there has not been consensus among researchers with respect to its definition. [Olusola \(2011\)](#) sees performance measurement as an ability to gauge the level of success of an organisation. [Moullin \(2003\)](#) also defined performance measurement as "evaluating how well organisations are managed and the

value they deliver for customers and other stakeholders”. Subsequently, the researcher argued that this definition has two components:

- (1) the purpose of the measurement; and
- (2) the value the firm offers to its stakeholders and the way the firm is managed.

Business performance can be measured quantitatively or qualitatively (Augustine, Wudyka, Durkin, & Kleis, 2012). Agreeably, Minai and Lucky (2011) asserted that performance in small organisations is viewed from dual perspectives: “the monetary (financial) and the non-monetary (non- financial) measures”. Though some studies have some inclination in using quantitative performance measures due its objectivity and simplicity, others prefer the subjective performance measures because of its multi-dimensional nature. For example, Ittner and Larcker (2003) provided that owner/managers of SMEs prefer to determine the level of success or otherwise of their respective establishments through subjective means. Furthermore, Wallace, Little, Hill, and Ridge (2010) noted that owners of SMEs would prefer self-reporting affairs of their businesses rather than providing financial data to third parties. Wallace et al. (2010) further argued that self-reported measures provide broader scope and conceptualisation of firm performance, because of its “multidimensional nature”. In line of the foregoing, this study used four subjective performance indicators (sales growth, profit level, job creation and customer satisfaction) from Wu (2009) to measure SMEs’ performance.

2.3 Firm innovation and performance

Several studies consistently point to the critical need for a firm to innovate to sustain and build revenues and thereby leading to an improved performance of a firm. According to Tidd (2001), innovation of a firm is often connected to an improved performance of an organisation. Agreeably, following the work of Rosli and Sidek (2013) on the effect of innovation on the performance of Malaysian manufacturing SMEs revealed that process innovation and product innovation have a positive influence on firm performance. Hilman and Kaliappen (2015) reached similar conclusion on their study on innovation constructs and performance. Rousseau et al. (2016) contended that combination of process and product innovation produces a positive performance gains than product innovation alone. In respect of this, the authors submitted that firms should be looking at how to balance the innovation types rather than focussing on a single innovation. Furthermore, a study conducted by Afriyie, Duo, Appiah, and Musah (2018) on the relationship between innovation types and marketing performance of SMEs in an emerging economy using a sample size of 437 concluded that all the innovation types have a positive effect on firm performance.

According to Zhu, Zou, and Zhang (2019), SMEs need innovation to gain improvement in their performances. The assertion made by the authors was because of the conclusions reached by scholars on the innovation-performance linkage. For instance, an empirical study by Roach, Ryman, and Makani (2016) on innovation of SMEs concluded that there is a positive link between innovation and performance. Similarly, studies by Naranjo-Valencia, Jiménez-Jiménez, and Sanz-Valle (2016), Gomes and Wojahn (2017) and Tsinopoulos, Sousa, and Yan (2018) established positive linkages between innovation and performance. Bustinza, Gomes, Vendrell-Herrero, and Baines (2019) study on product-service innovation and performance using a sample of 370 executives of manufacturing establishments revealed that product-service innovation has a positive association with performance. The aforementioned indicate that there is an association between innovation orientation and performance.

3. Methodology

3.1 Research approach and study design

Cross-sectional study design together with quantitative study approach were used for this study. The reasons for the aforementioned deployment were as follows:

- Applicability in helping the researcher to use questionnaire to collect data on larger number of respondents at a point in time; and
- ability to helping the researcher to run data quantitatively.

3.2 Population and sample size

The total of 3,485 owners or managers of manufacturing SMEs were available from the databases of NBSSI during the last quarter of 2013. Based on this population, [Krejcie and Morgan's \(1970\)](#) table was used to obtain a sample set of 346 for the study. However, data collected and used were from 281 owners or managers of manufacturing SMEs. This is owing to non-return and inappropriateness of some questionnaires distributed.

3.3 Measures of innovation orientation and manufacturing SMEs' performance

The measures developed by [Nguyen and Pham \(2009\)](#) and [Bigliardi and Domio \(2009\)](#) were adapted and used to measure innovation orientation. The measures were used because they encompass all the elements of innovation orientation. The employment of aforementioned measures would help enhance the comprehension of how each of the innovation orientation constructs contribute to performance. However, in measuring performance, [Wu's \(2009\)](#) measures of performance were deployed. All the variables were reflectively measured. This is because all the study's constructs cause the measurement of the indicator variables ([Hair, Hult, Ringle, & Sarstedt, 2014](#)). [Table 1](#) presents information for the measurements.

Constructs	Indicators	Loadings
Product innovation	We place strong emphasis on the development of new products	0.862
	Our business frequently tries out new ideas	0.840
	We have been able to come up with new products to remain competitive	0.823
	Our business makes major improvements on the existing products to suit customer requirements	0.772
Process innovation	Our business seeks out new ways to do things	0.845
	Our business is creative in its methods of operation	0.886
	We constantly upgrade our technology to improve our production processes	0.842
Market innovation	We have initiated new production process within our firm	0.822
	Our business is often the first to market with new products and services	0.908
Firm performance	We constantly venture into new markets for our products	0.923
	There is increase in sales growth	0.877
	There is increase in profit level	0.774
	There is improvement in customer satisfaction	0.859

Table 1. Measures of innovation orientation and manufacturing SMEs' performance

3.4 Data collection procedure and analysis

Data for the study was collected at the first quarter of 2014. However, the collection of data was preceded by pretesting at the last quarter of 2013 based on the [Pallant's \(2007\)](#) recommendation. The reason for the pretesting was to address the research instruments' inaccuracies and inconsistencies. Although the data was collected in 2014, it was still relevant to the current study because the characteristics of the study units have not changed much to influence the results. This notwithstanding, it has been captured as a limitation of the study. The questionnaires for data collection were personally distributed to the respondents and an agreement was reached with them with respect to when it should be collected. The terms agreed on were strictly followed and this resulted to the successful collection of the data. Thereafter, partial least squares (PLS) structural equation modelling (PLS-SEM) technique was used for data analysis because of its ability to deal with normality violations.

4. Findings

The PLS-SEM's models (measurement and structural) were assessed and the results were captured in this study. The assessment of the models was necessary, as it will help the researcher determine the reliability and validity of the study's constructs together with the relationship between the constructs.

4.1 Measurement model

Measurement model was evaluated to determine the constructs validity and reliability. [Tables 2](#) and [3](#) were used to achieve this purpose.

Examining the outer loadings of the latent variables as captured in [Table 1](#) indicate that loadings are between 0.772 and 0.923. The indicators of the abovementioned loadings were retained in the model because they all met the set thresholds of being greater than 0.7. However, the indicators that could not meet the set thresholds were deleted from the model as recommended by [Hair et al. \(2014\)](#). In addition, composite reliability scores and the AVE values in [Table 2](#) also indicated good reliability and validity for the model. Furthermore, the values of discriminant validity in [Table 3](#) also indicated that the model has no discriminant validity problem.

The HTMT ratio was used to measure discriminant validity because it shows superior performance by having the ability to detect a lack of discriminant validity. The threshold for the absence of discriminant validity problems using the HTMT ratio criterion is that the correlation values among the latent variables should be less than 0.85 ([Sarstedt, Ringle, Smith, Reams, & Hair, 2014](#)). Thus, as all the correlation values are less than the cut-off point (bold values), it can be concluded that the model has no issues regarding discriminant validity.

Constructs	Cronbach's alpha	Composite reliability	AVE
Product innovation	0.844	0.876	0.680
Process innovation	0.871	0.912	0.721
Market innovation	0.807	0.912	0.838
Firm performance	0.793	0.876	0.702

Notes: "Loadings between 0.4 and 0.7 are acceptable, >0.7 is high; Cronbach's $\alpha > 0.7$ is acceptable and high, composite reliability should be 0.7 or higher and AVE should be 0.5 or higher" ([Hair et al., 2014](#))

Table 2.
Measurement model
results

4.2 Structural model

Again, the result of the structural model captured in Table 4 indicated that the structural model and beta paths for Market Innovation -> Firm Performance were statistically significant ($p < 0.05$). However, the Process Innovation -> Firm Performance and Product Innovation -> Firm Performance structural model and beta paths were not statistically significant ($p > 0.05$). In addition, the findings indicated that the three latent variables “Market Innovation, Process Innovation and Product Innovation” explain 22.5% of the variance in “Firm performance”. Furthermore, adequate predictive relevance as represented by Q squared was achieved for the study’s model. Also, the path coefficients’ values displayed by the beta values in Table 4 showed that “Market Innovation” has a relatively strong effect on “Firm Performance” (0.317) whilst “Product Innovation” and “Process Innovation” variables have a moderate impact (0.130 and 0.089, respectively) on “Firm Performance”. The effect size (f^2) results indicated that “Market Innovation” is the highest predictor of “Firm performance” among the elements of innovation orientation.

5. Discussions

The objective of this study was to assess the relationship between the dimensions of innovation orientation and the performance of manufacturing SMEs. As a result, three hypotheses: (H1) process innovation is positively and significantly related to performance of manufacturing SMEs, (H2) product innovation is positively and significantly related to performance of manufacturing SMEs and (H3) market innovation is positively and significantly related to performance of manufacturing SMEs were formulated for that purpose.

The results of the structural model indicated that process innovation (coefficient = 0.089; $p = 0.294$) and product innovation (coefficient = 0.130, $p = 0.095$), respectively, played a non-significant role in determining firm performance. The results suggest that though improvement in process and product innovation would lead to increase in performance,

Table 3. Heterotrait-monotrait (HTMT) ratio

	Firm performance	Market innovation	Process innovation	Product innovation
Firm performance	–	–	–	–
Market innovation	0.533	–	–	–
Process innovation	0.439	0.710	–	–
Product innovation	0.451	0.719	0.830	–

Table 4. Structural model results

Structural path	Beta	P values	Decision	f^2
Market innovation -> firm performance	0.317	0.000	Supported	0.076
Process innovation -> firm performance	0.089	0.294	Not supported	0.005
Product innovation -> firm performance	0.130	0.095	Not supported	0.010
	<i>R squared</i>	<i>Adjusted R squared</i>	<i>Q squared</i>	
<i>Endogenous construct</i>				
Firm performance	0.225	0.216	0.184	

Notes: “Effect size (f^2) of 0.02, 0.15, and 0.35 indicates small, medium and large effect, respectively. R^2 of 0.75 is substantial, 0.50 is moderate and 0.25 is weak, predictive relevance of 0.02, 0.15 and 0.35 indicates small, medium and large respectively”

manufacturing SMEs do not engage more in such innovative activities. This accounted for the positive and non-significant nexus between the two constructs and performance. Thus, *H1* and *H2* were not supported. Though the relationship process and product innovation had with firm performance was non-significant, positive nexus of the aforementioned constructs is the acknowledgement of their importance to SMEs. The nature and set-up of SMEs could have influenced the results. This is because innovation is an organisation-wide task. Hence, process and product innovation could suffer if the set-up of SMEs did not permit effective communication and collaboration among their constituents. The result though non-significant is satisfactory, as it confirms the positive nexus established in literature. The intense competition SMEs find themselves in made the study timely and important, as it enhances the knowledge of SMEs on how the deployment of innovation orientation dimensions could contribute to their performance. It also provides foundation upon which future studies could be built. Despite the non-significant relationship between the constructs and performance, the two innovation activities must be encouraged by the manufacturing establishments. The reason is that [Lendel et al. \(2015\)](#) and [Un and Asakawa \(2015\)](#) advanced that process innovation helps expand profits, the competitiveness of a firm and improves performance by eliminating waste. To the authors, deployment of process innovation is a needful activity, as it enables firms attain greater efficiency, meet up with competition and grow quality products. [Rousseau et al. \(2016\)](#) also asserted that product innovation makes it possible for dynamic businesses to take advantage of being first to satisfy the needs of consumers. [Camison and Villar López \(2010\)](#) advanced that firms can derive their competitive advantage from product innovation. This is because through product innovation products quality can be enhanced, thereby contributing to firms' performance and competitive advantage, respectively.

However, market innovation contributes significantly in explaining and predicting (coefficient = 0.317; $p = 0.000$) firm performance. This means that if manufacturing SMEs use market innovation through exploitation of new markets or segments it would result in higher performance. Thus, *H3* was supported. According to [Johne \(1999\)](#) and [Rosli and Sidek \(2013\)](#), market innovation involves meeting customers' preferences of purchase through appropriate market mix and market selection. In the view of the authors, firms should engage in market innovation on continuous basis to maintain their customers. The rationale for the abovementioned assertion is that developmental trends occurring in the marketplace because of technology make it possible for customers to be swept by competitor firms without any difficulty. Therefore, market innovation should be considered as major activity to be undertaken by firms, as it helps firms to respond to market opportunities and needs ([Rodriguez Cano et al., 2004](#)). The result is also in line with the conclusion reached by [Otero-Neira et al. \(2009\)](#) that market innovation positively influences performance of businesses. A study by [Varis and Littunen \(2010\)](#) also confirmed a highly significant relationship between a market-related innovative activity and firm performance.

Furthermore, with respect to the effect of the three independent constructs on "Firm Performance", the findings reveal that all the three independent constructs jointly account for 22.5% of the variance in "Firm Performance". This means that 77.5% of variations in "Firm Performance" is accounted by factors not considered in this study. Researchers ([Marzi, Dabic, Daim, & Garces, 2017](#); [Lendel et al., 2015](#)) have indicated that survival and growth of manufacturing firms that are innovative are often swift and, hence contribute to economic growth and development. [Lendel et al. \(2015\)](#) further advanced that innovativeness should be considered as a multifarious concept made up of several constructs. Agreeably, [Nguyen and Pham \(2009\)](#) and

Bigliardi and Domio (2009) argue that firm innovation can be reflected in “the extent to which a firm can introduce new product, new production processes, modify the existing products and exploit new territorial markets and segments within existing markets”. To Boer and During (2001), for firms to achieve success in the marketplace, the type of innovation to be used must be balanced and equal attention should be given to each constituent. Boer and During (2001) opined that though balanced deployment of the innovations do not necessarily assure success, failure to meet them may be detrimental to an establishment. Based on the above arguments, it could be said that lack of balanced deployment of the innovation types by the manufacturing establishments might have resulted to the low coefficient of determination for this study.

6. Conclusions

Based on the outcomes of this study, the following conclusions can be reached. Deployment of market innovation in the manufacturing SMEs sector should be encouraged, as it contributes significantly to their performances. Furthermore, despite the non-significant role performed by process and product innovations in determining firm performance, their deployment should not be neglected by manufacturing SMEs. This is because it has been established in literature that innovation orientation is a multifarious concept made up of several constructs and hence their employment must be given balanced and equal attention. Innovation should be seen as an organisation-wide activity. Therefore, all constituents within SMEs should collaborate and engage in effective communication to enhance successful deployment of innovation in their establishments. SMEs should also ensure congruence among their innovative ideas, strategic context and organisational setting. Thus, manufacturing SMEs should see all the dimensions of innovation orientation as important contributors to their improvement.

7. Recommendations

Taking cognisance of the study’s outcome, some recommendations are proffered. More innovative activities such as development of new products, adding value to existing products, seeking out new ways to do things and exploitation of new markets must be used by owners/managers of manufacturing SMEs to improve upon their performances. Government should also establish funds that can be accessed by these establishments so that the businesses can use it to buy the necessary innovative equipment needed to improve upon their performances. Furthermore, the study recommends that government should provide enabling platforms to help sensitise manufacturing SMEs about the importance of using innovation practices in their business operations. This is because innovation has been proven by this study to have a positive effect on performance.

8. Suggestions for future research

Like any study, this study has some limitations. It is prudent to make suggestions to help future studies based on the limitations revealed or encountered by the current study. First, future studies should be carried out across all manufacturing firms in Ghana rather than just limiting it to manufacturing SMEs. This will help broaden the scope of understanding of the aforementioned constructs and their applicability to the manufacturing sector at large. Large firms differ from SMEs because of differences in their business set-up and practices. Therefore, it will be a mistake to generalise the current study’s result to all manufacturing

firms unless future studies affirm it. Future studies should also look at other variables that can affect the performance of manufacturing SMEs, as the constructs from the current study did not achieve 100% influence on the performance. This is necessary, as it would enlighten owners of SMEs about variety of issues that could impact on performance. Knowledge of other performance determinants could help the owners not to over concentrate on elements that do not yield desired result. Future studies should also consider the applicability of disaggregation of small manufacturing firms from medium-sized ones.

9. Limitations of the study

This study was unable to capture all manufacturing firms in Ghana but rather concentrated on only manufacturing SMEs. This may limit our understanding of the applicability of the study's constructs to large manufacturing firms. The study again failed to look at other variables that could affect the performance of manufacturing SMEs in Ghana. The nature of data obtained from NBSSI also made it inapplicable to disaggregate small manufacturing firms from medium-sized ones. Finally, the data collected was in 2014, and this could be seen as different from the current state of study units. However, the characteristics of the study units have not changed much to influence the results.

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