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E-Procurement Adoption, E-Marketplace Participation and Firm Performance: A Study of Manufacturing Companies in Cameroon

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Abstract

The study sought to examine the relationship between E-procurement adoption, E-marketplace participation, and performance of manufacturing companies in Cameroon. The study examined a population of 1,130 manufacturing companies in Cameroon and using the simple random sampling method, a sample size of 295 manufacturing companies was selected using the Yamane's formula. Data was analyzed using descriptive statistics, correlation and regression analysis methods. In order to establish the mediating role of E-marketplace participation in the relationship between e-procurement adoption and firm performance, a Sobel test was conducted. Evidence from the study found a strong positive association between e-market place participation and firm performance ($r = 0.433^{**}$, $p < 0.01$). Meaning that an increase in e-marketplace participation leads to enhanced firm performance. There is a significant positive association between procurement adoption and firm performance ($r = 0.304^{**}$, $p < 0.01$). Implying that any positive change in e-marketplace participation is related to a positive change in firm performance. E-marketplace participation appears to be a stronger predictor variable of firm performance (Beta = .506, sig. = .001) than e-procurement adoption (Beta = -.093, sig. = .533). Also, E-marketplace participation plays a partial mediating role in the relationship between e-procurement adoption and firm performance (β =.449 P=.000, Sobel test =16.645). Also, findings indicate that the independent variables positively predict 17.3% of the variations in strategy implementation in firm performance in manufacturing companies in Cameroon. The findings of this study can help management to prioritize and enhance both e-procurement adoption and e-marketplace participation to boost overall firm performance, as these factors are interconnected and positively impact business outcomes. For optimal results, firms should recognize the complementary nature of e-procurement and E-marketplace participation, emphasizing the need to effectively engage in E-markets alongside adopting e-procurement practices to drive improved performance. Firms in the global perspective are always in the lookout for new and better opportunities and strategies that can enhance their firm performance. However, in a developing country like Cameroon, manufacturing companies continue to register a deteriorating performance. This study contributes to research and practice given that it provides insight on the challenges manufacturing companies are facing and the best strategies that can be adopted to mitigate such challenges such as the adoption of e-procurement technologies and participation in e-market places.

Keywords: e-procurement adoption, e-marketplace participation, firm performance, manufacturing companies

1. Introduction

Globally, firms are faced with challenges and are always on the look for new opportunities that can enhance their firm performance (Noruzy *et al.,* 2019). This is because good firm performance strengthens the firms' position against competitors and helps them to reach new markets at the same time (Altuntas, Cinar & Kaynak, 2018). The global rating of different firms by Price Waterhouse Cooper in (2019) indicated that 70% of the

manufacturing firms continued to register a deteriorating performance. In a developing country context, particularly in Cameroon, the Cameroon Investment Authority Report (2021) documented that 59% of firms have registered a deteriorating performance of which 30% of these were in the manufacturing sector. Chang and Wong, (2016) asserts that firms can improve their over-all performance and facilitate inter-organizational relationships and transactions if they could adopt e-procurement as it also effectively solves the problem of asset specificity and product description. Mayer & Gavin, (2015) argue that e-procurement adoption and electronic market places changes the way the firms do business by reshaping traditional buyer-seller relationship which brings about improvement of core processes, and different ways to reach new markets.

Electronic marketplaces are getting more and more popular, being driven by globalization of economic activity (Grieger, 2013). As well they have become important players in the Internet economy because they promise to strongly enhance firm performance (Loro & Mangiaracina, 2022) and improve market efficiency by reducing costs, increasing speed to market and make procurement more efficient (Aboelmaged, 2016; Wang *et al.,* 2018). An e-marketplace entails a place for buyers and suppliers to conduct trade in a more efficient way. More firms are experiencing e-market place trading and due to its effectiveness and efficiency, most firms are satisfied because it increases its performance (Ratnasingam, 2015). Albrecht, Dean and Hansen, (2015) note that electronic market place participation entails efficiency, legitimacy and IT capability. As E-market participation adds an uncertainty and risk to a transaction, the largest concern for buyers and sellers is incomplete with distorted information which consequently affects E-procurement adoption. The huge opportunities offered as a result of e-marketplace participation have not been captured yet by several firms, hence calling for studies to explore this option.

E-Procurement adoption is understood in terms of cost and process conformation (Altuntas *et al.,* 2018). Moreover, market makers use e-procurement as a means of creating value and establishing relationships with their business partners especially in small and medium-sized enterprises (Soliman & Janz, 2016). Majority of studies on firm performance have been done within the procurement discipline, however, these have explored Inventory Management and Procurement Practices on Organization's Performance (Masudin, Kamara, Zulfikarijah, & Dewi, 2018), Adoption of e-procurement strategy and procurement performance (Muhia, & Afande, (2015), E-procurement, supplier integration and supply chain performance (Mafini, Dhurup & Madzimure, 2020), Role of e-procurement adoption on procurement performance (Osir, 2016), Adoption of E-procurement technology (Ahimbisibwe, Wilson & Ronald, 2018). The role of E-procurement adoption, E-market place participation and firm performance in Cameroon in particular in a single suit has been overlooked, making this study relevant.

In Cameroon, the quest for strong industrial growth, the import substitution policy of the Biya's regime and development is on an upward trajectory. According to Dun & Bradstreet (2025), Cameroon has 1,130 manufacturing companies in various sectors but doesn't provide a detail breakdown of companies per region. However, based on Dun & Bradstreet (2025) statistics, we can see that Littoral Region has several Manufacturing companies, including those in Douala, Dibombari, Ebone and Mbange. Centre Region has companies in Yaounde and Soa. Additionally, it's reported that 57% of companies in Cameroon are based in Yaounde and Douala indication a significant concentration of manufacturing companies in these two cities. In particular, Douala remains Cameroon's industrial hub with over 100 industries more than double the number of industries it had in earlier days (API Report, 2021). The national development plan III has three programs directly linked with industrialization that is manufacturing, innovation, technology transfer and development and private sector development. With such industrialization, the sector of recent has made attempts to engage in e-procurement adoption. However, report by Cameroon Investment Promotion Agency (2021) indicates that 60% of the costs incurred in e-procurement reduce firm revenue, hence affecting the firm performance. This may be evidenced with the poor sales performance estimated at about 40%, low customer satisfaction that accounts for 50 %, which may create poor relationship with them. This may further be attributed to receiving materials late that are used in the production process, due to the high costs involved in the purchase. This has been noted to affect firm performance by about 40% (API Report, 2021). As a result, firm participation in e-market has also become a challenge due to its inefficiency and IT challenges that account for 60% reduction in the performance of the firm (API Annual Report, 2022).

Despite the growing importance of e-procurement and e-marketplace participation in enhancing firm performance (Gunasekaram et al., 2009; Teo et al., 2009), may manufacturing companies in Cameroon still face challenges in adopting and leveraging these digital platforms (World Bank, 2020). The lack of understanding about the relationship between e-procurement adoption, e-marketplace participation, and firm performance in the Cameroon context hinders the development of effective strategies to improved competitiveness and operational efficiency and to realize the Cameroon government import substitution ambition (Porter, 2001). It is therefore upon this background that the researcher examined the relationship between e-procurement adoption, e-market participation and firm performance among manufacturing firm in Cameroon, providing insights to inform

business decisions and policy development.

The performance of firms is critical for their survival (Chang & Wong, 2016). The government of Cameroon has put up efforts to ensure that firms' performance is improved as they are a major contributor to the economy. However, their performance is seen to deteriorate and this is estimated at about 60% reduction in performance among firms in Cameroon (API Annual Report, 2022), which may possibly lead to their closure. This may be attributed to low e-market participation and low levels of e-procurement adoption. For instance, reports show that e-procurement adoption is costly and on average, the firm may spend. 81,200,000Million (approximately 140,000 USD) to use this technology given the many procedures it requires. This may account for 60% of the firm revenue hence becoming costly from the perspective of the firm. Accordingly, adapting to such a system is also a challenge, hence, affecting firm performance. Accordingly, firms have continued to register poor sales performance, and this is estimated at about 40% (API Annual Report, 2022). For instance, reports indicate that 30% of the firms that have attempted to use e-adoption have had a shortfall in their sales by about 18% (API Annual Report, 2022). Further, the participation in E-market is still low due to its inefficiency and IT challenges that may lead to a deterioration in performance of the firms (API annual Report, 2022). It is therefore against this state of affairs that the study sought to investigate E-procurement adoption, E-market place participation and firm performance of manufacturing companies in Uganda. Particularly, the study sought to examine;

i. The relationship between E-marketplace participation and firm performance of manufacturing companies in Cameroon.
ii. The relationship between E-procurement adoption and firm performance of manufacturing companies in Cameroon.
iii. The mediating effect of E-market place participation in the relationship between E-procurement adoption and firm performance of manufacturing firms in Cameroon.

Despite much efforts by Cameroonians in the manufacturing sector, the API annual Report (2022) indicates that 40% of these industries have collapsed in the last three years. This therefore intrigues the researcher to choose this context and test whether such challenges faced by these industries is attributed to E-procurement adoption, E-market Place Participation and Firm Performance which form the conceptualization of the study with their various dimensions as show in Figure 1.

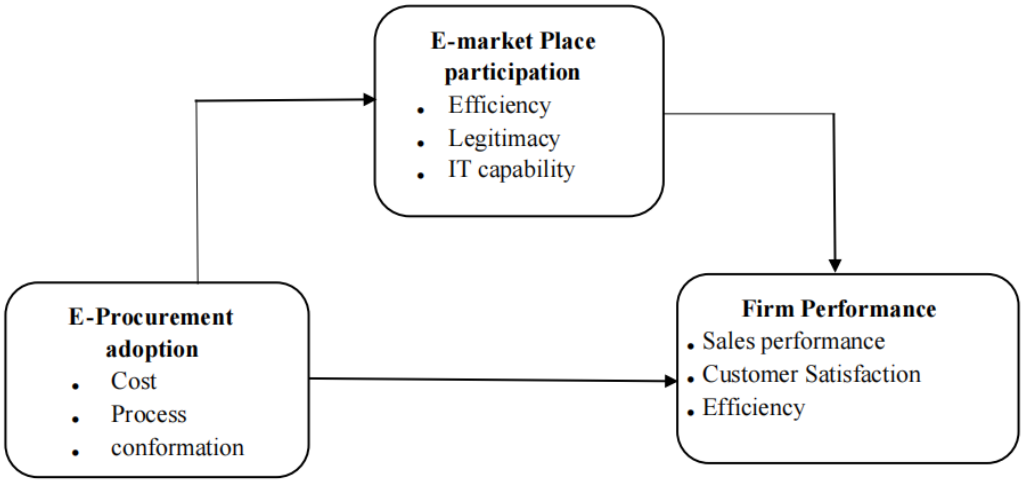

Figure 1. The Conceptual Framework

Source: Author (2024).

This conceptual framework provides a structure for investigating the relationship between e-marketplace participation, e-procurement adoption and firm performance in the context of manufacturing companies in Cameroon.

2. Literature Review

2.1 Theoretical Review

The study adopted Diffusion of Innovation (DOI) theory (Hsu, Kraemer & Dunkle, 2006) to explain the effect of

e-procurement adoption on firm performance in manufacturing firms. Diffusion of innovation theory by Rogers (2003) describes the process of spreading an innovation via communication channels overtime among the members of a social system.

Roger's theory details the stages of the innovation decision process (knowledge, persuasion, decision, implementation, and confirmation). The communication channels are mass media channels (e.g., radio and newspapers) and interpersonal, interactive channels (such as in face-to-face communication). Diffusion of innovation theory suggests that organizational structure (for instance centralization, complexity, and formalization) and organizational openness (links to other organizations) affect the rate of adoption and ultimate firm performance. Hence, the reason for using this theory to help explain link that exist and cause effect on the study variables.

2.2 Empirical Review

2.2.1 Relationship Between E-Marketplace Participation and Firm Performance

Recently, there have been many researches (Lee & Billington, 2017; Steerman, 2018; Sanders, 2017; Devaraj et al., 2017) regarding the impact E-market place participation on firm performance and these have reported consistent results. Lee and Billington (2017) documented that integrated supply chain gives a high-competitive advantage by improving firm performance through price and delivery improvement. Frohlich (2018) suggests that integration between companies over the internet brings shortened delivery times, a reduction in transaction costs, an improved inventory turnover which consequently improves firm performance. Similarly, Lee et al. (2017) affirms that today's most successful manufacturing companies act closely in order to send and receive information in real time and smooth the flow of inventory. This led to fast and reliable delivery and reduction of lead time due to the improved performance of companies. Steerman (2018) argues that highly cooperative firms actually reduce their inventories by 25 percent or more.

Sanders (2017) argues that cooperation between companies allows them to achieve performance targets by improving quality and delivery speed, and be faster to market new products. Devaraj *et al.* (2017) document that sharing information through the internet positively affects firm performance such as cost, quality, flexibility, delivery. Zhu and Benton (2017) also said that the degree and quality of information sharing between buyer and supplier positively influences planning, producing and delivering in a supply chain. Conclusively, in many studies, factors such as integration, collaboration, information sharing and communication have a positive impact on firm performance. At the same time, however, there are mixed results in information technology and the financial performance (Hu & Plant, 2018). Most of these studies have been done in developed countries and using panel data. This study intended to capture the perceptions of respondents using a questionnaire survey by testing this relationship in a developing country like Uganda that has a different Institutional environment. Hence the hypothesis;

H1. E-marketplace participation has a positive and significant link to firm performance of manufacturing companies.

2.2.2 Relationship Between E-Procurement Adoption and Firm Performance

Firm performance is a complete display showing the company's state during a particular period, which is the result of achievement influenced by its operational activities in utilizing its resources. Company performance involves efficiency, sales performance, customer satisfaction, and relationship development. According to Chang and Wong (2019), company performance, including efficiency, sales performance, customer satisfaction, and relationship development increases after participating in e-procurement. In previous studies by Suvanmanee et al. (2020) and Williams *et al.* (2015), e-procurement adoption is key to a firm's success. Similarly, Gasperz (1997) affirms that e-procurement dimensions of cost and process performance are precursors in improving the performance of the firm.

According to Colletti *et al.* (2017) company sales experience a life cycle in which sales will experience a decline at certain times, which may be due to a sales strategy no longer appropriate to market conditions. This situation encourages the company to implement new strategies of e-procurement adoption is key among them which consequently increases the sales revenue of a firm. Similar studies such as Croteau and Bergeron (2001) and Saldanha *et al.* (2022) assert that firm performance is as a result of implementing various technological strategies, including e-procurement. A study done by Mohd *et al.,* (2016) resonates with the above finding and affirms that some aspects of procurement such as sales and purchase activities, from searching, sourcing, negotiating, ordering, and receipt to post-purchase review, can be efficiently covered by e-procurement, consequently improving the performance of the firm. The above studies have used panel data in the context of developed countries. We thus extend this literature using a questionnaire to extend this discourse in Uganda. Hence the hypothesis:

H2. E-procurement adoption has a positive and significant link to firm performance of manufacturing

companies.

2.2.3 The Mediating Effect of E-Market Place Participation in the Relationship Between E-Procurement Adoption and Firm Performance

One of the major focuses of this study is to provide evidence on the mediating role of E-market place participation in the relationship between E-procurement Adoption and Firm performance. There is little empirical evidence that supports this argument except for Chang and Wong (2010) whose results revealed that firms that adopted e-procurement were more likely to participate in the e- marketplace and that the firm's performance was enhanced after such participation. Accordingly, since firm performance can be influenced by the behavior of E-procurement and E- market place adoption, it is possible to assume mediation by E-market place participation in the relationship between E-procurement adoption and Firm performance. Oh, Yang, and Kim, (2014) examined the moderating effect of certain e-procurement system types on the relationship between IT capabilities in e-procurement adoption and firm performance. The moderated regression analysis was used to test for interaction effects of e-procurement adoption, and firm performance. There was a stronger effect in the relationship between e-procurement adoption and firm performance. When e-procurement has a minimum-information sharing function and a high market-making function, collaboration capability has a greater contribution on firm's performance.

Chirchir (2018) carried out a study in Manufacturing Firms in Kenya and the results showed a total indirect effect of e-procurement on firm performance was 0.289 while the direct effect was 0.121 and therefore the total causal effect of e-procurement adoption on firm performance was (.121 + .289) = 0.410. E-market place participation partially mediated the relationship between e-procurement adoption and firm performance implying that the success of manufacturing firms was dependent on the level of supply chain management practices. The e-procurement adoption was found to make firm partner relationships and information sharing positively affects supply chain performance whereas integrated software improves firm performance. Hence, the hypothesis:

H3. E-market place participation mediates the relationship between E-procurement adoption and firm performance of manufacturing firms in Cameroon.

3. Methodology

3.1 Research Design and Population

This study adopted a cross-sectional research design because it enabled the researcher to collect data at a specific point in time. The study employed a quantitative methodology following a deductive approach. Quantitative research approach was used because it helped the researcher to present the data in numerical terms. Accordingly, with the quantitative approach, the researcher captured the objective perceptions of respondents through filling a survey instrument. The population of the study comprised of 1,130 manufacturing firms in Cameroon (Dun & Bradstreet, 2025). The manufacturing firms was the unit of analysis. The unit of inquiry was the procurement officer since he/she is deemed to have relevant and adequate knowledge in the subject matter of e-procurement adoption, e-market place participation and firm performance.

3.2 Sampling Procedure and Data Collection Tools

From the above population of 1,130 manufacturing firms, the study selected a sample size of 295 manufacturing firms based on Yamane's (1967) sample size determination. The researcher used a simple random sampling which is a sampling technique where every item in the population has an even chance and likelihood of being selected in the sample (West, 2016). The researcher recruited participants into the study by first preparing a list of all the population members and then each member was marked with a specific number; and secondly from this population, the researcher chose random samples using random number tables which is a method that involves numbering the population.

In order to collect data from the field, the researchers used a self-administered questionnaire tool as a data collection instrument which was distributed to respondents following systematic procedures. The questionnaire was anchored on a five-point Likert scale to measure the attitudes of the respondents by asking them to respond to a series of statements about E-procurement adoption, E-marketplace participation, and firm performance in terms of the extent to which they agree with them. A questionnaire was used because of the intent of the researcher to capture perceptions of the respondents about the study variables (Johns *et al.*, 2013). Data was collected by the researcher herself by reaching out to the respondents to minimize non-response rate. The study made use of 5-point Likert scale because of its simplicity to understand, it takes less time and energy to complete than higher point scales and respondents can make a choice of the answer without becoming overwhelmed (Croasmun & Ostrom, 2011).

3.3 Measurement of Study Variables, Validity and Reliability

The study utilized established measurement of items by earlier researchers to operationalize and measure the

variables under the study. E-Procurement adoption was measured in terms of cost and process conformation (Albrecht et al., 2005). These were anchored on a five-point Likert scale ranging from strongly Disagree (5) to strongly agree (1) and modified to suit the current study. E-market place participation was measured in terms of efficiency, legitimacy, and IT Capability (Harrison & Waite, 2006). These were anchored on a five-point Likert scale ranging from strongly Disagree (5) to strongly agree (1) and modified to suit the current study. Firm performance was measured in terms of sales performance, customer satisfaction, efficiency as emphasized by Mayer *et al.,* 2005). These were anchored on a five-point Likert scale ranging from strongly Disagree (5) to strongly agree (1) and modified to suit the current study.

In order to measure for validity of the research instrument, the researcher used content validity index (CVI). A questionnaire was printed and given to two people who are knowledge in the subject matter whose content validity indices were captured. All the CVIs were above a threshold of 0.7 as recommended by (Field, 2009). Reliability (internal consistency and stability) of the questionnaire instrument was tested using Cronbach's Alpha Coefficient after entering filled in questionnaires in SPSS V28. Just like many methodologists recommend, coefficients (α) of greater than 0.72 (Mugenda & Mugenda, 2003) was accepted while less than 0.7 was unacceptable.

3.4 Data Analysis

Statistical treatment of captured primary data involved prior sorting, editing, classified and coded into a coding sheet, processed and analysed using a Statistical Package for Social Scientist (SPSS) version 28.0 for descriptive and inferential analysis of measurable relationships between study variables. According to the study objectives, Pearson's correlation analysis was used for associations respectively and a regression analysis also was used to determine the predictive power of dependent variable on the dependent variables. Further, the mediation relationship was tested using Sobel Test procedure and MedGraph as recommended by Jose (2008).

4. Findings

4.1 Response Rate

The study evaluated the response rate of the responses to check if the collected data was sufficient enough to proceed with data analysis. Out of 295 issued out questionnaires, 258 of them were returned fully filled making 87.5% response rate. Holbrook *et al,* (2007), recommends that the response rate lower than 54% is minimally less accurate. Therefore, since 87.5% was above that, it was considered accurate are hence proceeded with data analysis.

4.2 Respondents Background Information

Using descriptive statistics, the researcher analyzed the background data of the respondents in terms of gender, age bracket and highest levels of education obtained. Findings indicated that majority of the respondents were male (66.3%) and (33.7%) were female, implying that since manufacturing most of the time tend to be associated with head loads, men were much preferred from the women in recruitment and placement at work. Findings also revealed that most of the respondents (35.7%) belonged to the age bracket between 30–40 years. This was followed (23.5%) who belonged to 41–50 years, less than 30 years were (14.3%) and the least belonged to the age bracket of 51 and above years. An indication that most manufacturing companies in Cameroon recruit and maintain employees with average working age who can be useful in improving firm's performance. Findings also revealed that most of the respondents (60.2%) had Postgraduate studies. This was flowed by (23.5%) who had bachelors' Degree and (16.3%) had completed Diplomas. This implies that all respondents had adequate education to read and understand the concepts captured in this study.

4.3 Correlation Analysis of the Study Variables

A Pearson correlation test was carried out to examine the relationship between e-marketplace participation, e-procurement adoption and firm performance of manufacturing companies in Cameroon. Results are shown in Table 1.

Table 1. Correlation analysis of the study variables

		1	2	3
E-procurement adoption (1)	Pearson Correlation	1		
	Sig. (2-tailed)			
E-market place participation (2)	Pearson Correlation	.786**	1	
	Sig. (2-tailed)	.000		

Firm performance (3)	Pearson Correlation	.304**	.433**	1
	Sig. (2-tailed)	.002	.000	
	N	98	98	98
**. Correlation is significant at the 0.01 level (2-tailed).				

Source: Field study (2024).

Correlations from Table 1 indicate a strong positive association between e-market place participation and firm performance ($r = 0.433^{**}$, $p < 0.01$). Meaning that an increase in e-marketplace participation leads to enhanced firm performance. Thus, *H1* is supported. Similarly, there is a significant positive association between procurement adoption and firm performance ($r = 0.304^{**,}$ $p < 0.01$). Implying that any positive change in e-marketplace participation is related to a positive change in firm performance. Thus, H2 is accepted.

4.4 Regression Analysis of the Study Variables

In order assess the predictive ability of the independent variables on firm performance and also as a precondition for mediation analysis, linear regression analysis was conducted particularly to establish how the variation in the independent variables caused a variation in firm performance.

The results from regression analysis are presented in Table 2.

Table 2. Coefficients[a] of linear regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.124	.249		12.538	.000		
	E-procurement adoption	-.065	.104	-.093	-.626	.533	.382	2.619
	E-market place participation	.319	.094	.506	3.388	.001	.382	2.619
	R = .436[a] **R^2 =** .190 **Adjusted R^2 =** .173 Std. Error of the Estimate = .419 **F = 11.177 Sig =** .000[b] b. Predictors: (Constant), E-market place participation, E-procurèrent adoption							
a. Dependent Variable: firm performance								

Source: Field study (2024).

Findings from Table 2 show that e-marketplace participation appears to be a stronger predictor variable of firm performance (Beta = .506, sig. = .001) than e-procurement adoption (Beta = -.093, sig. = .533). This implies that e-marketplace participation is key in successful firm performance in manufacturing companies in Cameroon while e-procurement has a positive but negative predictor. Also, findings indicate that the independent variables positively predict 17.3% of the variations in strategy implementation in firm performance in manufacturing companies in Cameroon. The remaining 82.7% can be explained by other factors not considered under this study.

4.5 Mediation Analysis of the Study Variables

In order to establish the Mediating role of E-marketplace participation in the relationship between e-procurement adoption and firm performance, a Sobel test was conducted. When the mediator was introduced and following the Sobel Test procedure, the results indicate that the direct paths was not significant and indirect paths was significant as shown in Figure 2.

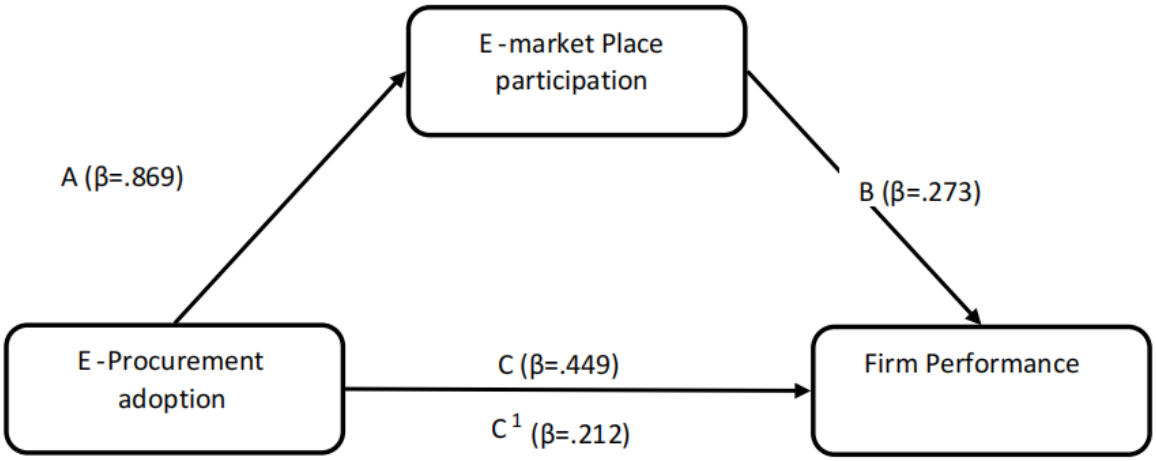

Figure 2. Mediating effect of E-market place participation in the relationship between E-procurement adoption and firm performance

Type of mediation = partial (β = .449, Sobel Test value = 16.645, P = .000)

Direct effect = .212 (not significant), Indirect effect =.352. (Significant)

Source: Field study (2024).

This implies that E-market place participation plays a partial mediating role in the relationship between e-procurement adoption and firm performance (β =.449 P=.000, Sobel test =16.645), hence achieving objective 3 of the study and *H3* is equally supported. It also means that E-procurement adoption does not significantly relate to firm performance, but it can go through E-market place participation to relate to firm performance implying that there is a stronger need for firms to participate in e- Markets when they adopt e-procurement so as to improve performance of the firm.

5. Discussion

The results reported in this research suggest that e-market place participation has an association with and is a significant predictor of firm performance. This implies that e-marketplace participation is key in successful firm performance of manufacturing companies in Cameroon. For instance, when firms have the efficiency, legitimacy and IT capability to participate in e-market places, this is likely to enhance firm performance of manufacturing firms in terms of sales performance, customer satisfaction and efficiency. This is consistent with studies that argue that e-marketplace participation particularly through integrated supply chain gives a high-competitive advantage by improving firm performance through marketplace price and delivery improvement (Billington, 2017). Similarly, Lee *et al.* (2017) affirms that today's most successful manufacturing companies act closely in order to send and receive information in real time and smooth the flow of inventory.

Further, whereas there was a significant positive association reported between e-procurement adoption and firm performance, it was not a strong predictor of firm performance. This implies that e-procurement adoption alone was could not lead to better firm performance unless when firms participate in e-market places. For instance, the cost, process and conformation of e-procurement was not enough to drive firm performance of manufacturing firms. These results however, are in contradiction with extant literature which suggest that company performance, including efficiency, sales performance, customer satisfaction, and relationship development increases after participating in e-procurement (Chang & Wong, 2019), e-procurement adoption is key to a firm's success (Suvanmanee *et al.*, 2020; Williams *et al.,* 2015), e-procurement dimensions of cost and process performance are precursors in improving the performance of the firm (Gasperz, 1997).

Results also indicate that there was a partial mediation effect of e-market place participation on the relationship between E-procurement adoption and firm performance. When the mediator was introduced and following the Sobel Test procedure, the direct paths was not significant but indirect paths was significant. This implies that E-procurement adoption did not significantly relate to firm performance, but it could relate indirectly through E-market place participation, implying that there is a stronger need for firms to participate in e- Markets in Cameroon when they adopt e-procurement so as to improve performance of the firm. For instance, the cost, process and conformation of e-procurement technology will not have any impact on the sales performance, customer satisfaction and efficiency of the firm if firms do not participate in e-market places. This is in line with Chang and Wong (2010) whose results revealed that firms that adopted e-procurement were more likely to

participate in the e-marketplace and that the firm's performance was enhanced after such participation. Similarly, Chirchir, (2018) in their study on Manufacturing Firms in Kenya found a partial mediation effect of E-market place participation on the relationship between e-procurement adoption and firm performance implying that the success of manufacturing firms was dependent on the level of supply chain management practices.

6. Conclusion

The purpose of this study is to examine the contribution made by e-market place participation and e-procurement adoption on firm performance of manufacturing firms in Cameroon. We surveyed 295 manufacturing firms and we found that e-market place participation is a significant predictor of firm performance and that e-market place participation partially mediates the relationship between e-procurement adoption and firm performance of manufacturing firms in Cameroon. Once the organization has the efficiency, legitimacy and IT capability to participate in e-market places, firm performance is likely to be enhanced.

This study offers several implications. The study explores the role played by e-market place participation in enhancing firm performance, meaning that firms with the efficiency, legitimacy and IT capability to participate in e-market places are likely to enhance the firm's sales performance, customer satisfaction and efficiency of the firm. This study has also established that e-procurement adoption does not significantly predict firm performance in Cameroon. Thus, if the adoption of e-procurement in terms of its cost, process and conformation is to have an impact on firm performance, there is need for the firm to effectively participate in e-market places.

For policy makers and policy influencers like Cameroon Investment Promotion Agency and Cameroon manufacturers association, the findings of this study will help them in coming up with measures that encourage manufacturing firms to participate in e-market places which in turn encourages the firms to adopt e-procurement technologies hence leading to enhanced firm performance. While the direct relationship between e-procurement adoption and firm performance was found to be non-significant, this doesn't necessarily mean that e-procurement is not valuable. The study suggests that the impact of e-procurement on firm performance is largely mediated by E-marketplace participation. Therefore, organizations should not neglect their e-procurement practices. It's crucial to optimize e-procurement processes, streamline procurement activities, and ensure the efficient utilization of e-procurement tools and technologies. This will lay the foundation for successful E-marketplace participation, which in turn contributes to improved firm performance.

Whereas this study makes considerable contributions and implications, this study focused on manufacturing companies in Cameroon to determine the contribution of e-market place participation and e-procurement adoption on firm performance of manufacturing firms. It is possible that these results are only applicable to manufacturing firms and particularly those in Cameroon. The study also relied on only quantitative data which leaves out certain important information the respondent's opinions on the study variables is limited. Whereas we tried to control for response bias, it is likely that this was not ruled out completely.

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Author Contributions

Ayuk Takemeyang Conceived the topic and manuscript. Henry Jong Ketuma and Tambi Andison Akpor reviewed and revised the manuscript, enhancing its content, clarity and accuracy met the highest standards.

Declaration of Funding

No funding.

Data Availability

The data set generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declaration of Competing Interest

The authors declare no competing interest.

Clinical Trial Number

Not applicable.

Ethics Consent to Participate and Consent to Publish Declaration

Not applicable.

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