



EFFECTS OF E-PROCUREMENT ON PROFITABILITY OF SMALL AND MEDIUM ENTERPRISES DURING COVID-19 PANDEMIC

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Abstract:

The purpose of this study was to examine the effect of e-procurement on business profitability of SMEs during Covid-19 pandemic. This study has employed cross section design using both quantitative and qualitative data. The population of study involved five business sectors which were Communication, Construction, Agriculture, Health and Education. The study used convenience sampling to capture quantitative data and purposive sampling to capture qualitative data. Quantitative data were captured by using structured questionnaires while qualitative data were collected by using interview guide. Quantitative data were analyzed by using descriptive and inferential statistics while qualitative data were analyzed by using content analysis. The result indicates that among the three variables tested ie (time, cost and risk) the variable of risk was significant with p-value of 0.03. In order to achieve the competitive advantage, SMEs should use e-procurement as a strategy to mitigate risks including Covid-19 pandemic to increase business profitability. The study provides insights of using e-procurement during Covid-19 to increase profitability of SMEs as a new concept in developing countries including Tanzania

Keywords:

E-procurement, Profitability, Covid-19 pandemic

1. Introduction

Business profitability is an essential element in performing business activities as it enables the organization to grow economically and achieve a competitive advantage particularly in the current days where competition is increasing from time to time (Frank et al, 2017). Increased business profitability is an important indicator of measuring organizational performance and the country at large because when organizations are operating in a profitable manner it contributes into increased revenues in the country and hence leading into increased Gross Domestic Product (Ellis, 2010). According to Venables (2015), in order for the country's economy to grow the business organizations must operate profitably to make them pay the statutory taxes and dues to the government. Following occurrence of the covid-19 pandemic, supply chain of goods and services have changed leading into minimal interactions between buyers and sellers in the market and consequently affecting the business sector particularly global product supply chain, financial markets, tourism, import and export business (Time.com, 2020). According to United Nations Economic Commission for Africa (2020) African countries have lost 29 billion US Dollars as a result of disruption in supply chain and it is estimated that African continent will get a loss of about 1.4% of its 2.1 trillion dollars of its GDP. This business disruption has necessitated some countries to take precautions including closure of factories and imposing lockdowns to the people which led into restrictions in movements of goods and people thus disrupting the supply chain of various products in different countries. The disrupted supply chain has led to shortages and consequently an increased demand of some essential goods and services. Worse still, as the days goes on different countries are taking strict control measures of preventing spreading of this fatal disease whereby people are subjected to testing and required to wait for a certain period for the results. Such measures increase the lead time period in supply of goods and services which consequently lead to hiked prices and threatening the business profitability of many organizations in the World. As such, restrictions on movement of people across the world have affected the business sector to a great extent by disconnecting the chain that connects between buyers and sellers of goods and services which consequently affects timely delivery of materials to the ending customers (Sonoiki and Sidi, 2020). According to UNECA (2020), the situation is worse in Africa whereby four out of five business organizations are in

business crisis due to disruption in supply chain. In addressing the consequences of Covid-19 on vaccines supply, Wong (2021) argued that, you cannot stop the global supply chain and no country can be self-sufficient. This means that no country is safe on its economy with regard to supply of goods and services. Given this challenge, business firms have been forced to devise ways of improving business profitability including use of e-procurement system to enhance wide communication between buyers and suppliers worldwide, minimize risks of pandemic and reduce transaction cost in procurement (Development Aid, 2020; Sonoiki & Sidi, 2020).

Scholars have reported that the use of e-procurement can decrease cost, speed up operations, increase security, accuracy and control of corruption in procurement (Harelimana, 2018; Ruzindana and Kalaskar, 2016). Although several studies have reported many benefits of e-procurement, a little has been done in developing countries including Tanzania to use e-procurement system as a tool to overcome some risks associated with procurement including the Covid-19 pandemic (Harelimana, 2018). Applicability of e-procurement practices and its effects on business profitability especially during crises such as the Covid-19 pandemic has not been widely researched upon in developing countries including Tanzania. Therefore, this study tries to examine the effect of E-procurement on business profitability during the Covid-19 Pandemic.

2. Literature Review

2.1. Theoretical Literature Review

This study was guided by the Technology Acceptance Model (TAM) given that e-procurement uses technology (Momani et al., 2017). This model is anchored on use of technological innovation for the aim of performing organizational activities in a more efficient and effective manner. The model postulates that in order for any technology to be accepted by staff in an organization, there are two factors that influence their adoption of such technology which include perceived usefulness and ease of using the technology. The use of computers, telephones and internet are part of technology usage that can enable the business enterprise to improve performance and thus increase profitability of SMEs.

2.2. Benefits Associated with E-procurement

Scholars have reported that the use of e-procurement practices in businesses has benefits such as increased transparency and accountability in the procurement process which leads to high possibility of preventing corruption (Harelimana, 2018). According to Ekrem et al (2015), information system including e-procurement facilitate in creating a unified supply networks by integrating the business processes of buyers and suppliers in a quick and economical manner in terms of reduced labor costs, paper work and better negotiation. In addition, the use of e-procurement can help business organizations to make market analysis, to sell products in a wider market, to reduce transactional cost and to connect with many potential suppliers. This means that by using e-procurement organizations are able to use their innovativeness and share information in a wider scope and with low cost thus mitigating supply chain uncertainty immediately (Ismail, 2015).

Ha1: The use of E-procurement has a significant effect on increase of business profitability of SMEs

Vaidya et al (2006), argued that business organizations can achieve significant saving in terms of time and cost because the system enables better information flows among the business partners at a fast speed involving paperless transactions. Under the traditional manual practices, procurement activities were fragmented which made many business organizations to delay in getting their supplies from distant suppliers thus making them lose customers as well as getting low profit in their business operations. The use of e-procurement can enable buyer track the ordered materials from supplier thereby creating chances of timely supply of goods in the organization.

Ha2: E-procurement enhances timely delivery of goods to buyers in the supply chain

2.3 Mitigation of Risks under use of E-procurement

The outbreak of covid-19 pandemic has resulted into economic crisis all over the world and consequently affected business profitability due to disrupted demand and supply operations (Donthu & Anders, 2020). In this case, sectors such as transport, trade and finance were put at high risk following disruption in movement of goods from upstream to downstream (UNDP, 2020). The Covid-19 pandemic leads to retardation of economic growth rate from 6% to 2.1% (Faria, 2021). The outbreak of covid-19 pandemic has caused business recession in most countries whereby SMEs were severely affected due to shortage of materials, increased cost of operations and coupled with reduced

revenues (UNDP, 2020; Donthu & Anders, 2020). In order to overcome the risk of Covid-19 pandemic, most business enterprises were forced to take strategies including use of e-procurement to mitigate the consequences on their business profitability. The systems including e-procurement facilitate the management of product flow in the supply chain thus making business firms improve their performance (Christopher et al, 2007).

Ha3: E-procurement has a significant role in mitigating risks associated with procurement

3. Methodology

This study has adopted a cross section design using descriptive and inferential statistics to analyze data from respondents. This design was preferred because it collects data at one point in time across different sectors of interest (Kothari, 2014). For the purpose of achieving the research objectives, both quantitative and qualitative data were used to ensure appropriateness and comprehensiveness of the data with regard to issues of business profitability under Covid-19 pandemic. In order to address business issues and determine profitability during Covid-19 pandemic, the population for this study involved Small and Medium Enterprises (SMEs) operating businesses in the largest business city of Dar es Salaam Tanzania. These SMEs included five different business sectors such as Communication, Agriculture, Education, Construction and Health on the basis that these SMEs were among firms with highest volume of direct or indirect importation of goods (URT, 2012). These SMEs in total employed about 200 staff who was computed by using Yamane's formula (1967) to arrive at a sample size of 134 respondents. In addition, some government representatives working in sectors where the SMEs fall were involved to give detailed information about issues of business operations under covid-19. This group of people were involved as key informants because they were experienced and more informed on issues of government policies in relation to business operations. The study has used convenience sampling to capture quantitative data from respondents while purposive sampling was used to capture qualitative data from interviewees. Structured questionnaires were used to collect quantitative data from respondents who involved administrators, accountants, procurement officers and salesmen while the interview guide was used to capture qualitative data from interviewees such as owners, co-owners and government representatives

The tools used in measurement of the variables were adopted from past studies where their psychometric properties have been tested and found valid. For the purpose of enabling measurement of variables, the questionnaires used a five-point Likert scale. With regard to data analysis, quantitative data were analyzed by using descriptive statistics and regression analysis with aid of SPSS software while content analysis was used in the analysis of qualitative data with aid of Nvivo software basing on emerging themes. The owners of SMEs and their employees selected were the unit of analysis for this study.

4. Results and Discussion

4.1 Validity and Reliability Testing

For the purpose of ensuring validity, the field enumerators were given training before going to the field also data collection tools were pre-tested to check their relevance and adequacy. This was done to ensure that the questions formulated are clear and understandable to respondents and really generates the required information. With regard to reliability, this was tested by using Cronbach's alpha technique to determine internal consistency of the data. Table I indicate that Cronbach's Alpha value is .827 thus confirming that the data used in this study were reliable.

Table I: Reliability Test

Cronbach's	N of
Alpha	items

.827	3
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4.2 Descriptive Analysis of Demographic Characteristics

This study has analyzed demographic characteristics to determine statistical distribution of respondents with regard to the variable of interest. The results are indicated in Table II below.

Table II: Descriptive Analysis of Demographic Characteristics

Variable	Frequency	Percent (%)
Sector of SMEs		
Communication	22	19.1
Agriculture	33	28.7
Construction	25	21.7
Health	27	23.5
Education	8	7
Total	115	100
Age		
Below 18 years	14	12.2
19-25 years	24	20.9
26-35 years	46	40.0
36-45 years	25	21.7
46-60 years	6	5.2
Total	115	100
Work experience		

1-5 years	13	11.3
6-10 years	25	21.7
11-15 years	31	27
16-20 years	37	32.2
Above 20 years	9	7.8
Total	115	100
Gender		
Male	65	56.5
Female	50	43.5
Total	115	100

Table II presents the results of demographic characteristics of respondents whereby on sector wise of SMEs two business sectors Agriculture (28.7%) and Health (23.5%) have the highest score compared to other sectors implying that majority of SMEs were involved in the business of agricultural and health products to make profit during Covid-19 pandemic. On age of respondents, a range of 26-35 years (40%) and 36-45 years (21.7%) in total (61.7%) have the highest score implying that this range of age was preferred by SMEs in the employment policy in the sense that this range includes young people who are energetic, creative and passionate in using new technology including e-procurement. With regard to work experience, a range of 11-15 years (27%) and 16-20 years (32.2%) in total (59.2%) have the highest score implying that most SMEs had experienced staff who could use e-procurement efficiently to increase profitability of SMEs. On gender, majority of respondents were male (56.5%) implying that males dominated the business to make profit during Covid-19 pandemic.

4.3 Results of the Regression Analysis

4.3.1 Testing of Model assumptions

The model fitness was tested by checking outliers whereby the results in the Table below indicates that data were within the acceptable range of -3 and 3 which implies that data were normally distributed thus justifying use of the Regression model in this study.

Table III: Scatterplot

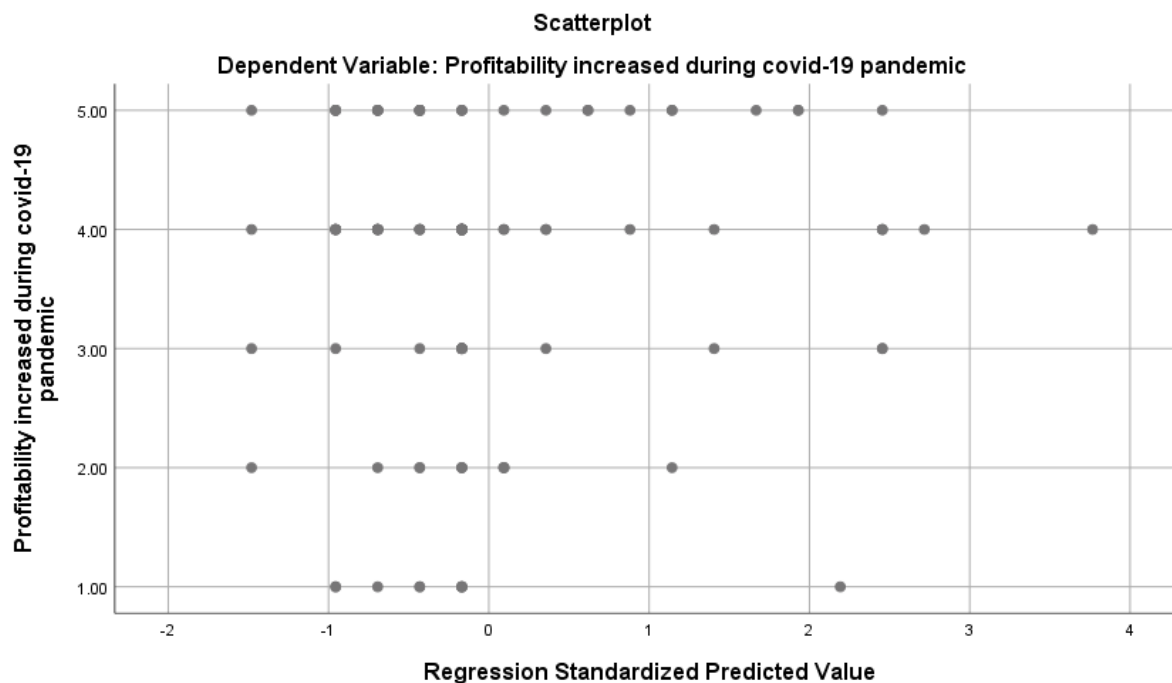


Table IV: Results of Regression Analysis

Model	Beta Coefficient	Std Error	Sig.	VIF
(Constant)	3.459	.679	.000	
AVT	.352	.211	.098	2.091
AVC	.007	.222	.973	2.032
AVR	.414	.189	.031	1.681

The findings presented in Table IV indicates that the variable of risk (AVR) has the largest beta coefficient of .414 implying that a unit change of this variable explains 41.4% improvement in business profitability of SMEs during Covid-19 pandemic. On testing relationships between independent and dependent variables, the result indicates that the variable of risk has a p-value of 0.031 ($p < 0.05$) implying that the use of e-procurement reduces risks in supply chain and thus making significant contribution to the business profitability of SMEs during Covid-19 pandemic. Following this result, an alternative hypothesis was accepted in the sense that the use of E-procurement has a significant role in mitigating risk of Covid-19 in supply chain of goods and thus increasing profitability of SMEs. The results also indicate that the variable of time has a beta coefficient of .352 meaning that a unit change of this variable contributes to 35.2% in speeding up the procurement process and hence improving business profitability of SMEs.

The results obtained in this study concur with the Technology Acceptance Model (TAM) that the application of various tools of e-procurement such as computers and internet are useful in improving organizational performance. According to Frank et al (2017), business organizations are required to take precautionary measures to protect their business against risk that can affect their profitability. The results are also supported by key informants whereby most of them supported that the outbreak of covid-19 has made them focus more on cost reduction through use of digital technology to mitigate the risks of conducting business in local and international markets. For example, three interviewees from different sectors had the following similar comments:

“Following restrictions and lockdowns across the world due to Covid-19 pandemic, supply chain was disrupted hence necessitating use of e-procurement system to make our business survive,”

Another key informant TGB from Health sector supported that:

“E-procurement has the ability to reduce unnecessary cost in supply chain and it has become a resourceful tool to increase business profitability particularly in the current competitive business environment of covid-19 pandemic.”

5. Conclusion

This study concludes that the use of e-procurement has a significant role in mitigating risk of Covid-19 and thus increasing business profitability of SMEs. This implies that during periods of tragedies including disease outbreaks which leads to disruption of supply chain, business organizations can use such technological resource to perform their routine operational activities online hence being able to reduce operational cost and achieve sustainable competitive advantages in the market.

6. Practical Implication

This study recommends that SMEs and other business organizations should use e-procurement strategically to mitigate risks including Covid-19 pandemic. This will enable them increase business profitability and thus achieve competitive advantage in the market.

References

- Chau, P.K. and Hui, K.L. (2001), Determinants of small business EDI adoption: an empirical investigation. *Journal of Organizational Computing and Electronic Commerce*, Vol.11 No.4, pp. 229–52.
- Christopher A. Boone; John R. Drake; Jeffrey A. Bohler and Christopher W. Craighead. (2007), Supply Chain Management Technology: A review of empirical literature and research agenda. *International Journal of Integrated Supply Management* Vol. 3 No. 2
- Development Aid. (2020), E-procurement in the development sector - getting aid online <https://www.developmentaid.org/#!/news-stream/post/75728/e-procurement-in-the-development-sector-getting-aid-online>.
- Donthu, N.and Anders, G. A. (2020), Effects of COVID-19 on Business and Research, *Journal of Business Research*, Vol. 117, pp. 284-289. <https://www.sciencedirect.com/science/article/pii/S0148296320303830>.
- Ekrem Tatoglu; Erkan Bayraktar; Ismail Golgeci; Lenny Koh; Mehmet Demirbag and Selim Zaim (2015), How do supply chain management and information systems practices influence operational performance? Evidence from emerging country SMEs, *International Journal of Logistics Research and Applications: A Leading Journal of Supply Chain Management* DOI: 10.1080/13675567.2015.1065802
- Ellis, K. (2010), *The Private Sector and Development*. Overseas Development Institute, Policy brief. 111 Westminster Bridge Road, London SE1 7JD. <http://www.odi.org.uk/themes/private-sector>.
- Faria, J. (2021), Impact of COVID-19 on Projected GDP Growth in Tanzania 2020-2022.Statistica.<https://www.statista.com/statistics/1139894/impact-of-covid-19-on-projected-gdp-growth-in-tanzania/>.
- Frank G. Adams and Kenneth W. Graham. (2017), Integration, Knowledge creation and B2B governance: The role of resource hierarchies in financial performance. *Industrial Marketing Management*, Vol.63 pp.179-191
DOI: 10.1016/j.indmarman.2016.10.009
- Harelimana, J. (2018), The Impact of E-Procurement on the Performance of Public Institutions in Rwanda, *Global Journal of Management and Business Research*, Vol.18

- Ismail Golgeci and Serhly Y. Ponomarov. (2015), How does firm innovativeness enable supply chain resilience? The moderating role of supply uncertainty and interdependence. *Journal of Technology Analysis and Strategic Management*, Vol. 27 No.3 pp.267-282
- Kishor Vaidya, A. S. M. Sajeev and Guy Callender. (2006), Critical factors that influence e-procurement implementation success in the public sector. *Journal of Public Procurement*, Vol. 6, No 1 & 3, pp.70-99
- Kothari, C. R. (2014), *Research Methodology*. New Delhi: New Age International (P) Ltd.
- Momani, A., Jamous, M., Hilles, S. (2017), Technology Acceptance Theories: Review and Classification. *International Journal of Cyber Behavior*, Vol.7 No.2 pp.1-14.
- Ruzindana, I., Kalaskar, P. (2016), The Adoption of e-Procurement and its Impact on the Procurement Performance of Selected Telecommunication Companies in Rwanda. *European Journal of Business and Management*, Vol.8, No.15.
- Sonoiki and Sidi. (2020), How Procurement is Navigating Through COVID-19. *Wavestone*.
<https://www.wavestone.com/en/insight/how-procurement-is-navigating-through-covid-19/>
- Tabachnick, B. G., and Fidell, L. S. (2001), *Using multivariate statistics* (4th edn). New York: HarperCollins.
- Time.com. (2020). Coronavirus Price Grouping Complaints Surge across U.S. <https://time.com/5807515/price-gouging-coronavirus/>
- UNDP. (2020), Support to the National Response to Contain the Impact of COVID-19: Situational Analysis. https://www.undp.org/COVID-19_CO-Response
- United Nations Economic Commission for Africa. (2020), *Economic Report on Africa 2020: Innovative Finance for Private Sector Development in Africa*. Economic Commission for Africa, Addis Ababa, Ethiopia.
- United Republic of Tanzania. (2012), *National Baseline Survey Report: Micro, Small and Medium Enterprises in Tanzania*.
www.fsdt.or.tz/fileadmin/downloads/MSME_National_Baseline_Survey_Report_2012.pdf
- Venables, T. (2015), *Making Cities Work for Development*. Growth Brief, London. International Growth Centre.
- Wong, C.Y. (2021), *How the battle against Covid-19 become a forever war*. The New statesman, UK International Edition.