# Effects of Accounting Information System on the Sustainability of SMEs in Lagos State, Nigeria

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#### Abstract

The paper investigates the effects of accounting information systems on the sustainability of SMEs in a competitive environment. SMEs are known for inconsistent information preparation and presentation due to their lack of accountability skills the paper adopted a survey research design. However, the objectives of the paper are the investigation the relationship between the accounting information technology and decision making of SMEs; establish the relationships between the manual accounting system and the sustainability of SMEs, and examine the influence of the manual accounting system on accounting information of SMEs. Two research hypotheses were formulated and tested statistics tools such as regression and correlation tests and research questions formulated in line with the objective stated were formulated to achieve the aim of the study. Two hundred and ten copies (210) of a purposely designed questionnaire were distributed to the selected SMEs in Lagos state as of 31 December 2021 and analyzed using regression and correlation tests. Findings showed that there is a significant relationship between accounting information technology and the decision-making of SMEs. Also, there exists a significant relationship between the manual accounting system and the sustainability of SMEs in a competitive environment. The paper concludes that the application of accounting information systems significantly enhances the survival of SMEs in a competitive environment and should be harmonized with manual accounting systems. It was however recommended that software and hardware technologies should be used complementarily to generate quality accounting information for SMEs' decisions in Lagos State, Nigeria.

**Keywords:** Accounting information system, Manual accounting system. Survival of SMEs, Decision making, and sustainability

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#### Background to the Study

According to the Lagos Ministry for Commerce, Industry, and Cooperatives, small and medium scale enterprises are regarded as businesses with less than three hundred employees and a turnover of less than one hundred million naira per annum (Vanguard, 2021). Small and medium scale enterprises (SMEs) play vital roles in the development of various industries in any growing economy. However, they are managed efficiently and effectively to influence the growth and development of the economy. SMEs have a great influence on employment generation, innovation, and industrial development as well as creating sources of revenue for the government of emerging countries of which Nigeria is included. They are the solid rock of any growing economy.

Jabali and Tawfeq (2014) in their study stated that an accounting information system is a computerized method for analyzing corporate financial activities in addition to other relevant information technology resources. In order for an organization to achieve its goals and objectives a good accounting information system is required as a means of gathering, storing, recording, processing, managing, controlling, and reporting relevant information for informed decision making. An accounting information system improves the investment ability of SMEs since information can be seen at a glance. It also enhances the decision-making of employees.

Prior empirical studies such as Hunton, (2002) and Hla and Teru, (2015), evidence showed that the relationship between accounting performance and accounting information systems has mainly focused on large companies rather than SMEs. A wide number of studies have been conducted on the accounting information systems of blue-chip companies. Also, Fagbemi and Olaoye, 2016; Beg, 2018) in their studies, observed that research within the realm of accounting information system and performance of SMEs have been conducted mostly among developed countries in Europe, compared to scant studies on accounting information system in SMEs in developing nations like Nigeria. It is the intention of this paper to fill this gap in the literature. This study examines the influence of the accounting information system on the performance of SMEs in Lagos State. It is also expected to provide information to decision-makers in SMEs with relevant techniques to aid the survival of their respective businesses.

#### Statement of the Problem

Generally, SMEs do not provide formal, consistent, and reliable accounting information to their stakeholders. This slows down decision-making effectiveness as well as engendering misleading decisions as a result of the apparent deficiency in the account skills displayed in financial reports in SME businesses (Dandago and Rufai, 2014). Some challenge associated with the use of a manual accounting information system is that the processing of customer information usually takes a long period of time (Ndubisi, Chidoziem and Chinyere, 2017). That is why in most SMEs in Nigeria, there is a large labour cost in terms of salaries and associated costs. Further, errors of omission and commission are very common in organizations (Ndubisi, Chidoziem and Chinyere, 2017). The manual operating system makes organizational transactions to be cumbersome. Nevertheless, manual accounting

information systems have certain benefits as ledgers can be easily reviewed and therefore the accountants can easily put in certain changes if needed but this advantage is not enough to make the electronic accounting system to be irrelevant.

Using computerized packages, processing and analysis are accomplished easily and faster with accuracy which meets the needs of managers for timely and accurate information for decision making. However, it is essential to note that the adoption of a computerized accounting information system in an SME is faced with its own problems of loss of labor in the accounting departments among other problems of low profitability in organizations. This form the milieu upon which the study is set out to establish links between accounting information system and the sustainability of SMEs in Lagos State. This would provide a lead way for the assessment of the current accounting information systems used in the SMEs and establishing relationships and comparisons between the adoption of technology and manual techniques in the quest to ensure the survival of SMEs in a competitive environment of the 21<sup>st</sup> century.

# Aim and Objectives of the Study

The aim of the study is to ascertain the effects of accounting information systems on the survival of SMEs so as to enhance the survival of SMEs in the 21<sup>st</sup>-century economy. The specific objectives of the study are to:

- 1. Assess the impact of accounting information systems on the decision-making of SMEs.
- 2. Measure the mediating effect of the manual accounting system of SMEs and the survival of SMEs.

#### **Relevant Research Questions**

The research questions the study seeks to answer are as follows:

- 1. How does accounting information technology influence the decision-making of SME stakeholders?
- 2. In what way has a manual accounting system hindered the sustainability of SMEs?

#### **Relevant Research Hypotheses**

The null and alternative hypotheses that were formulated for the study are as follows:

# Hypothesis 1

H<sub>o</sub>: There is no significant relationship between accounting information technology and the decision-making of SME stakeholders.

# Hypothesis 2

 $H_{o}$ : Manual accounting system does not hinder the sustainability of SMEs.

# Scope of the Study

This study examines the accounting information system on the sustainability of selected SMEs in Lagos between 2018-2020. The study examines the efficacy of the electronic system or computer-facilitated information system in comparison with the continuous usage of manual

accounting information techniques in predicting the survival of SMEs in the 21<sup>st</sup>-century business environment. This study was limited to Small and medium enterprises in Lagos State, Nigeria. Lagos is the business capital of Nigeria and many SMEs are well represented in the state, thereby facilitating the representativeness of the Nigerian business owners.

# Accounting Information System

Accounting information system represents approaches used in gathering and disseminating information about accounting practices of the organization to aid decision making. Whereas, financial performance indicators are metrics that show improvements or success in organizational transaction processes in terms of returns and profits. In this study, the accounting information system is proxied by accounting information technology, and manual information system and they are the independent variables in the study. The dependent variable is the performance of SMEs. Accounting is the act of measuring, communicating, and interpreting financial activities (Investopedia, 2021). It is a language practically employed by most SMEs in one form or another almost on daily basis. Accounting is a system that has information concerning the entity, The information is usually depended upon by the organizations' interested information users. Accounting information aims to assist the users to form informed judgments. Olusola, Olugbenga, Zacchaeus and Olugbemiga (2013), defined an accounting system (AIS) as a system for collecting and recording accounting information about events that have economic implications upon organizations and also maintaining, processing, and communicating the information to stakeholders.

# Factors that affect the Survival, Growth, and Development of SMEs in the 21st Century

Non-financial performance measures are considered in terms of survival, growth, and development of SMEs. Certain qualitative factors affect the survival, growth, and development of SMEs in the 21<sup>st</sup> century.

# **Unstable Government Policies**

The instability of government policies has led to the collapse of some SMEs. The owners of SMEs should be prepared for changes in government policies that could affect their business operations. The SMEs should strategize and make concrete plans in order to mitigate the risks of closure or collapse due to changes in government policies. Nwoye (1994) stated that for SMEs to survive in Nigeria, they must identify business opportunities, take risks, be innovative and be sensitive to changes in the industry in which they operate. The failure of SMEs to adopt appropriate planning and strategies could hinder their survival, growth, and development.

# Faulty Accounting Information System

Many SMEs are faced with the problem of having improper accounting records of their operations and activities. This creates loopholes for fraudulent activities to thrive and could lead to the collapse or fall of such establishments and hinder their survival, growth, and development in the 21<sup>st</sup> century.

#### **Competition from Larger Companies**

SMEs are faced with stiff competition from larger companies. Larger companies have more economic power to implement strategies that could affect the performance of SMEs. Many SMEs are innovative but are faced with the problem of capacity utilization. SMEs are faced with ineffective implementation of plans and strategies; this is not the same for larger corporations. This could lead to the collapse of SMEs and affect their performance, growth, and development as the larger corporations have an advantage over the SMEs.

# **Geographical Location**

Many SMEs are faced with the problem of location as they are unable to reach out to a wide variety of customers. This could lead to low sales and in turn affect the survival of SMEs in poor geographical locations. Many SMEs are confined to a particular geographical location as such are unable to reach out to their customers. Many large companies have an advantage here as they are able to open different outlets for their business operations.

# Theoretical Framework of the Study

In this section of the study, two theories were used to explain the relevant concepts to SMEs and accounting information systems. These are contingency theory and agency theory. The underpinnings of these theories are explained below.

# **Contingency** Theory

This theory was put forward by Gordon and Miller in 1976. Contingency theory assumes that there is no generally accepted accounting information system that is suitable for every situation and that the effectiveness of the accounting information system is affected by certain external factors. These factors are the environment, market, technology, and the strategy adopted. The SME's strategy must also conform with the accounting information system put in place in the organization. Certain studies support the assumptions of the contingency theory. Langfiled and Smith, (2017) suggest that an accounting information system is one of the consequences of strategy. Other studies such as Chenhall (2003) and Gerdin and Greve, (2014) claim that accounting information system plays a dynamic role in SMEs' strategic management. This theory is quite relevant and strategic in the current study.

#### **Agency Theory**

The theory originated from Stephen Ross (1973). Ezzamel and Watson 2014 in their study stated that agency theory aims at addressing the dispute that arises between the principal and the agent due to information asymmetries. Agrawal and Knoeber, (2015), in their study, claimed that agency problems arise as a result of managers having the motivation to go after their own interests at the expense of the shareholders.

Jensen and Meckling (1976), proposed that managers who have a stake in their organization are not likely to stray from the shareholder's wealth maximization by undertaking substandard projects to maximize their benefits. This is based on the presumption that the managers have adequate information compared to other stakeholders. This theory is also relevant and strategic in the current study.

# **Research Method**

The research design adopted is the survey, and specifically, the cross-sectional survey research design. The population of the study comprised all SMEs in Lagos State, Nigeria. In Nigeria, SMEs are regarded as businesses with less than three hundred employees and a turnover of less than One hundred million naira as per annum. According to the Lagos Ministry for Commerce, Industry, and Cooperatives, the estimated figure of SMEs in Lagos State is 3,2224,324 and over 11,663 SMEs operate in Lagos State (Vanguard, 2021).

The data collection instrument used for the study is the questionnaire and copies of these were distributed to respondents to collect primary data. The sample size selected for the study was two hundred and ten (210) SMEs using the purposive random sampling method. These were deemed useful for further analyses in this study.

# **Reliability of Instrument**

To ensure that the research instrument is reliable, a pilot test was conducted. The pilot test was carried out on some selected 20 SMEs. The result of the Cronbach Alpha's ( $\alpha$ ) Criterion showed that the tool was internally consistent, and the returned value was  $1 \le \alpha \le 0.947$ . The reliability analysis was shown below:

# Table 1: Questionnaire Reliability Statistics (Total Items)

	Cronbach's Alpha Based on	
Cronbach's Alpha	Standardized Items	No. of Items
.947	.947	14

# Method of Data Analysis

The data gathered from the respondents through the use of questionnaires were subjected to statistical analysis. Descriptive and inferential statistics were used to analyze the data. The regression model was used to analyze the data collected and hypotheses were tested. IBM's Statistical Package for Social Science (SPSS-23) was the software used to analyze the data.

#### Presentation and Analyses of Data According to Research Questions

This section contains the analysis of research questions and the respondent's bio-data and measured variables. Responses are presented according to gender, age, marital status, working experience, management cadre, and educational qualification of respondents. The independent variables are accounting information technology and manual information system, while the dependent variable is the performance of SMEs.

	<b>Bio-data</b>	Frequency	Percentage
		(N)	(%)
1	Gender		
	Male	101	48.1
	Female	109	51.9
	Total	210	100.0
2	Age Distribution of Respondents		
	20- 29 years	89	42.2
	30 - 39 years	76	36.2
	40-49 years	38	18.1
	50 years above	7	3.3
	Total	210	100.0
3	Marital Status		
	Single	90	42.9
	Married	111	52.9
	Divorce	9	4.3
	Total	210	100.0
4	Working Experience		
	1-5 years	94	44.8
	6-10 years	69	32.9
	11-15 years	31	14.8
	16 years above	16	7.6
	Total	210	100.0
5	Management Cadre		
	top-level	77	36.7
	middle level	89	42.4
	Supervisory	44	21.0
	Total	210	100.0
6	Educational Qualification		
	B.Sc.	95	45.2
	OND/HND	74	35.2
	MSc.	16	7.6
	SSCE	25	11.9
	Total	210	100.0

Source: Field Survey, 2021

	Items		SA	Α	D	SD	Total
			(%)	(%)	(%)	(%)	(%)
1	Software, such as Microsoft Excel, Peachtree,	F	153	55	2	-	210
	and other packages facilitate the inputs and	%	72.9	26.2	1.0	-	100
	processing of large financial data.						
2	The use of accounting technology enables	F	147	62	1	-	210
	managers to solve problems instantly.	%	70.0	29.5	0.5	-	100
3	A computerized accounting system can be used	F	94	110	6	-	210
	to prepare account statements in real-time.	%	44.8	52.4	2.9	-	100
4	Technology aids in the faster and more accurate	F	79	98	25	8	210
	data processing.	%	37.6	46.7	11.9	3.8	100
5	Accounting information technology aids the	F	127	80	1	2	210
	measurement, processing, and communication	%	60.5	38.1	0.5	1.8	100
	of financial information abouteconomic						
	entities.						

**Table 3:** Accounting Information Technology

Source: Field Survey, 2021

Table 3 describes Accounting Information Technology in the organization. The result on the first row of the table shows that 153 respondents constituting 72.9% strongly agree, 55 respondents constituting 26.2% agree, and 2 respondents constituting 1.0% disagreed that Software, such as Microsoft Excel, Peachtree, and other packages facilitate the inputs and processing of large financial data. Based on the direction of all responses received, it appears that there are many strong positive responses that support the utilization or deployment of accounting information technology in SMEs.

	Items		SA	Α	D	SD	Total
			(%)	(%)	(%)	(%)	(%)
1	Accountants often post business transactions	F	98	106	6	-	210
	manually.	%	46.7	50.5	2.9	-	100
2	Accountants often attend to customers'	F	106	95	7	2	210
	complaints and post transactions in ledgers	%	50.5	45.2	3.3	1.0	100
	where corrections are needed.						
3	Special journals are posted with more	F	121	86	3	-	210
	accuracy using a manual accounting system.	%	57.6	41.0	1.4	-	100
4	Invoices and other source documents such as	F	123	82	5	-	210
	notes are often created by hand in	%	58.6	39.0	2.4	-	100
	organizations.						

Source: Field Survey, 2021

Based on the direction of all responses received, it appears that there are many strong responses that suggest the positive use of manual accounting practices in SMEs.

#### Table 5: Sustainability of SMEs

	Items		SA	Α	D	SD	Total
			(%)	(%)	(%)	(%)	(%)
1	Reports of SMEs serve as sources of	F	103	101	5	1	210
	information for owners and managers to make	%	49.0	48.1	2.4	0.5	100
	effective decisions.						
2	Management achievements in SMEs are traced	F	113	84	10	3	210
	to quality accounting practices.	%	53.8	40.0	4.8	1.4	100
3	SMEs recruit accountants to monitor and keep	F	73	111	24	2	210
	records of all business transactions in line with	%	34.8	52.9	11.4	1.0	100
	acceptable accounting standards.						
4	Accounting practices in SMEs are less prone to	F	91	110	8	91	210
	fraud when compared to public accounting	%	43.3	52.4	52.4	43.3	100
	practices.						
5	The sustainability of SMEs in Nigeria is	F	147	62	-	1	210
	influenced by owners' drive for accountability,	%	70.0	29.5	-	0.5	100
	and business growth.						

Source: Field Survey, 2021

Based on the direction of all responses received, it appears that the SMEs observed had good performance in their business transactions.

#### **Test of Hypotheses**

The accounting information system which is the independent variable (X) was measured with proxies Accounting Information Technology (AIT), and Manual Accounting System (MAS) as proxies. On the other hand, the independent variable (Y) is the Sustainability of SMEs (SS). These are expressed below in the following functions:

$Y = F_0(x)$				 	 	1
Y = SS				 	 	2
X = AIT, MAS	5			 	 	3
IF Y = $F_0(x)$ , the function of the function of the second seco	nen:					
$SS = \beta_0 + \beta_1 AIT$	$\Gamma + \beta_2 M_2$	AS		 	 	4
The regression	modeli	s giver	ı by:			

The regression model is given by:			
$SS = \beta_0 + \beta_1 AIT + \beta_2 MAS + \alpha \dots$	 	•••	5

Table 6: Sustainability of SMEs

	Items		SA	Α	D	SD	Total
			(%)	(%)	(%)	(%)	(%)
1	Reports of SMEs serve as sources of	F	103	101	5	1	210
	information for owners and managers to make	%	49.0	48.1	2.4	0.5	100
	effective decisions.						
2	Management achievements in SMEs are traced	F	113	84	10	3	210
	to quality accounting practices.	%	53.8	40.0	4.8	1.4	100
3	SMEs recruit accountants to monitor and keep	F	73	111	24	2	210
	records of all business transactions in line with	%	34.8	52.9	11.4	1.0	100
	acceptable accounting standards.						
4	Accounting practices in SMEs are less prone to	F	91	110	8	91	210
	fraud when compared to public accounting	%	43.3	52.4	52.4	43.3	100
	practices.						
5	The sustainability of SMEs in Nigeria is	F	147	62	-	1	210
	influenced by owners' drive for accountability,	%	70.0	29.5	-	0.5	100
	and business growth.						

Table 7: Model Summary of Regression

-				Std. The error in the
Model	R	R Square	Adjusted R Square	Estimate
1	.420ª	.176	.172	.32400
2	.553 <sup>b</sup>	.306	.299	.29815

a. Predictors: (Constant), Accounting Information Technology

b. Predictors: (Constant), Accounting Information Technology, Manual Accounting System

The regression model measures the prediction of the dependent variables by the independent variables. From the result shown in the Table, if the manual accounting system is held constant, R = 0.420 and R Square = 0.176 at an error of 0.32400. This means that accounting information technology predicts the sustainability of SMEs by 17.6% when the manual accounting system is held constant. The Table further shows that sustainability of SMEs occurs at R = 0.553 and R Square = 0.306 at an error of 0.29815. This implies that the sustainability of SMEs increases to 30.6% when a manual accounting system is fitted into the model. Therefore, a manual accounting system has an increasing impact on the model.

Df Model Sum of Squares Mean Square F Sig. Regression 4.676 4.676 44.548 1 Residual 21.835 208 .105 Total 26.511 209 2 Regression 8.110 2 4.055 45.616 Residual 18.401 207 .089 26.511 209 Total

Table 8: ANOVA of Regression

a. Dependent Variable: Sustainability of SMEs

b. Predictors: (Constant), Accounting Information Technology

c. Predictors: (Constant), Accounting Information Technology, Manual Accounting System

Table: 6 measures the differences in prediction between the independent variables in their explanation of changes in the sustainability of the SMEs. According to the Table the F = 44.548, p-value = 0.000 < 0.01 when manual accounting system is not in the model, and F = 45.616, p-value = 0.000 < 0.01 when manual accounting system is fitted into the model. This implies that there are significant differences in the prediction of the independent variables on the dependent variable. Further, it implies that the predicted survival of SMEs through accounting practices such as the use of technology, and manual processes were significantly different.

#### Test of Hypothesis 1

 $H_{o}$ : There is no significant relationship between accounting information technology and the decision-making of SME stakeholders.

**Table 9:** Correlations between Accounting Information Technology and Decision making of SMEs

		Accounting Information Technology	Decision making of SMEs
Accounting Information	Pearson Correlation	1	.420**
Technology	Sig. (2-tailed)		.000
	Ν	210	210
Decision making of SMEs	Pearson Correlation	.420**	1
	Sig. (2-tailed)	.000	
	Ν	210	210

\*\*. Correlation is significant at the 0.01 level (2-tailed).

Table 9 shows a correlation value r = 0.420 < 1.00 and implies a positive relationship between the variables - Accounting Information Technology and Decision Making of SMEs. The result reveals that (r 0.420 < 1.00 at p-value 0.000 <  $\alpha = 0.01$ ). These results show a significant link between Accounting Information Technology and the Decision making of SMEs.

.000<sup>b</sup>

.000°

#### Test of Hypothesis 2

H<sub>o</sub>: Manual accounting system does not mediate the relationships between accounting information technology and the survival of SMEs.

**Table 10:** Mediating effects of Manual Accounting on accounting information technology and sustainability of SMEs.

Total effect of X on Y SE Effect .000 6.215 .062 .386 Direct effect of X on Y Effect SE р .0002 .3724 .0896 4.1557 Indirect effect of X on Y Effect Boot SE BootLLCI BootULCI Man Acc Sys .2257 .0737 .1059 .3980

Source: HAYES PROCESS on SPSS, 2021

Table 10 depicts the total, direct, and indirect effects of manual accounting systems on SME performance. According to the table, total effects of manual accounting system (X) on SMEs sustainability (Y) occurred at r = 0.386 < 1;  $p = 0.0001 < \alpha = 0.01$ . Direct effects of manual accounting system on SMEs sustainability occurred at r = 0.3724 < 1;  $p = 0.0002 < \alpha = 0.01$ . The result in the Table also shows that the difference between the bootstrapped confidence and upper and lower confidence intervals is not equivalent to Zero, and this shows the evidence of a mediated relationship. Therefore, it can be stated that the effect of accounting practices. Another evidence of mediation in the analysis is that the relationship between the manual accounting system (X) on the sustainability of SMEs (Y) was also statistically significant.

# Summary of Findings and Conclusion

This study investigates the effect of the accounting information system on survival so as to enhance the growth of SMEs in Lagos State, Nigeria. This was carried out to achieve the objectives and examined the relationships between the accounting information technology and the decision making of SMEs and to determine the mediating effects of manual accounting systems on accounting information technology and the survival of SMEs. The findings revealed a significant positive relationship between accounting information technology and the decision-making of SMEs. Such occurrence can be adduced to the fact accounting information systems are computer-based and are efficient for storage, processing, and dissemination of information about the stakeholders such as their creditors, customers, and debtors (Primchard and Cole, 2016). The findings relate to the agency theory discussed earlier in the study. The study also found that a manual accounting system mediates the relationships between accounting information technology and the sustainability of SMEs in the 21<sup>st</sup>-century environment. This implies that the use of an accounting information system is contingent upon the natural abilities of the record keeper on the hand, and computerization can be backed up with a manual process to prevent permanent data loss. In conclusion, the deployment of accounting information systems significantly impacts the survival of SMEs and should be supported with manual accounting systems.

#### Recommendations

The following recommendations were made:

- i. SMEs should not deal with the automatic system absolutely, dispensing with the manual system, but they should use the two systems complementarily.
- ii. SMEs should be innovative and sensitive to technological changes in the industry in which they operate, so as to ensure their survival, growth, and development in the 21<sup>st</sup>-century environment.

#### **Recommendation for further Research**

Another researcher should focus on the link between accounting information systems on the performance of SMEs in other states of Nigeria as this study is only limited to Lagos State.

# Contribution to Knowledge

The paper has been able to contribute to knowledge in the following ways:

- (i) It has been able to highlight the significance of the effectiveness and efficiency of accounting information systems as a tool for business decision-making for SMEs.
- (ii) It also serves as an avenue for information generation to eradicate the cumbersomeness of manual accounting systems.

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