
The Effect of Transaction Cost on the Performance of SMEs in Kenya

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Abstract: The astronomical transaction costs due to incomplete information and lack of economies of scale for SMEs contributed the failure of large portion of SMEs in Kenya. Unlike large corporations, transaction cost is a big component of SME expenses due to asymmetry of information and borrowing small amounts of fund at a time. Although virtual lending institutions reduced transaction cost by directly connecting the lender and the borrower, the interest rate charged by these institutions is higher than the mean profit rate for SMEs. The study used regression analysis, ANOVA, and correlation coefficient and the result indicated that transaction cost explained 22.8% of variations in market value ($R^2=0.228$), $f(6, 205)=2.181$, $p<.05$, ROA explained 18.0%, ($R^2=0.180$), $f(6, 204)=2.904$, $p<.05$, while sales growth explained 14.7% ($R^2=0.147$), $f(6, 206)=1.471$, $p=>.05$. It was found that transaction cost was significant in predicting market value and ROA, and null hypotheses were rejected. The correlation result showed that transaction cost was negatively and significantly correlated with SME performance $r(210)=-0.363$, $p<0.05$.

Keywords: Transaction Cost, Information Technology, Asymmetry of Information

1. Introduction

Nobel price winner in economics, Ronald Coase introduced the concept of transaction cost to business literature. He defined it as a set of inefficiencies that should be added to the price of a product or services to measure the performance of the markets relative to non-market or virtual firms. Transaction costs are expenses to buyers of commodities and services that intermediaries and brokers receive for their roles of a deal completion. The transaction costs include: search fees, appraisal fees, information about the product, commissions, closing costs, and the time as well as the labor associated with transporting commodities [1]. Different asset classes have different average transaction cost and fees, for example, the average annual transaction cost for mutual funds in US is 1.44%, while the same costs 3% in Kenya [2]. In financial sense, transaction cost is the fees paid to brokers, commission agents, and other intermediaries in the process of getting funds.

Asymmetry of information also referred to as information failure happens when one party to an economic transaction have more material knowledge than the other party [3]. Sales

personnel, agents, and marketers are employed to reduce or eliminate market asymmetry of information. When a seller comes to a market with a product or service, he needs someone with more information about the location of the buyer, prices, and government regulations to sell that product. On the other hand, the buyers need information about the location of the seller, quality, and the price of the commodity [4]. The overall transaction cost depends the information that the seller and the buyer have from each other.

Information Technology (IT) involves the development, use, and maintenance of computer systems, software, and networks for the purpose of processing and disseminating data [5]. A study was performed by Chen, Su, and Hiele about the relationship between transaction cost and IT, taking 'coordination cost of IT' as their mediating variable, and found that there is a strong negative relationship between IT usage of firms and the transaction cost they incur. This implies that when IT usage improves, transaction cost decreases and vice versa. In order to assess the equity, transactions will not be concluded successfully without the necessary information for the participating agents of exchange [6, 7]. This means that information search will be

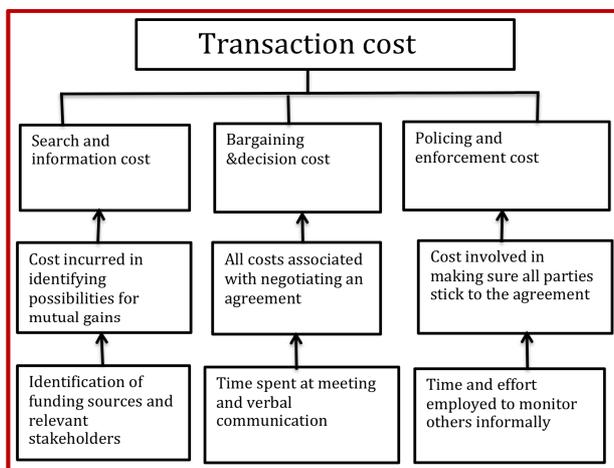
easier when IT is involved in the attainment of that information for the different parties in the transaction.

Age and size of the firm affects the transaction cost because old firms are well established and were used to the systems and processes of obtaining finance [8]. They have a lot of information about their target firm to seek finance, and this gives competitive advantage against startups as well as reduced cost of transaction. Transaction cost is associated with the effect of scale, scope, experience, and learning. Some researchers argued that SMEs have behavioral advantages in many activities, but they are disadvantaged in transaction costs because small firms generally produce small volumes of products and have not been in business long, thus have little benefit from economies of experience, scope, and scale [9]. The effect of firm size on the transaction cost is straightforward. Financial institutions may allocate employees to process the loan applications of big firms like safaricom due to the fact that they borrow large amounts of money and almost have zero risk of default.

2. Theoretical Framework and Hypotheses

2.1. Theoretical Framework

Ronald Coase initiated transaction cost theory (TCT), and was modified by Williamson [10]. Alchian, and Demsetz also contributed to the current understanding of TC theory by including internal transaction cost of the organization [11]. The theory is related to agency theory because it is based on the principle that cost will increase when you have to get someone else to perform your task. The TCT or Coase theory states that in the absence of transaction cost, the conflict of property rights can be negotiated with terms that accurately reflect the full cost of the property rights at issue. This means that in the absence of transaction cost, goods and services will have the price tag at production. Assumptions of the theory are that information must be free, perfect, symmetrical, and bargaining must be costless.



Source: Barzel, and Stephany (2017)

Figure 1. Transaction Cost.

Transaction costs is the charges incurred in negotiating trade agreement, cost of transferring ownership of goods and services, cost of monitoring trade conditions, and the cost of enforcing the stipulated terms and conditions through legal or social means [12]. Transaction cost is also defined as the non-interest expenses incurred by the lenders in the process of application evaluation, disbursement, and collecting the loan, while on borrowers' side, it's the non-interest expenses in the process of applying, getting, and repaying the loan [13].

Specific features of the theory include frequent ignorance and omitting of its existence, difficult in quantifying, treating it as side effect, and failure to account economically [14]. They divided transaction cost into market, intercompany, and public transaction costs. Market costs are concerned about information search and decision-making. Intercompany costs are the expenses incurred in transacting a parent company or within the specific company, while public transaction costs are associated with formal and informal maintaining of the society's functioning.

Transaction cost is influenced by the characteristics of the business, complexity of the transaction, activities involved, and the degree of uncertainty in the environment of the firm [15]. The movement of goods and services has to be planned, controlled, prepared, and delivered, and any of these activities cannot be free. Heald States that transaction costs are all costs except production cost, and they surge as the result of costly and asymmetrical information in the market [16]. It is stated that low rates of return and intense competition teach business firms to develop new ways of reducing transaction cost [17]. Strategies that emerged included conglomerates to take advantage of economies of scale, expanding product range, acquiring large market share, and greater control of diverse foundations of resources and distribution channels.

Transaction cost theory has been adopted in different spheres of business studies.

Borrower transaction costs and credit rationing in rural financial markets in Philippines was researched by [18]. The study used cross-sectional data from household survey with a sample of 176 household bank borrowers. Loan demand is determined by the cost of borrowing which is made up of interest, transaction cost, availability of collateral, borrower's liquidity requirement, and the level of education. Loan size, interest rate, value of the collateral, and the distance of the borrower from the bank are also the determinants of transaction cost. The study found that transaction cost accounted for 29.4% of the total financial cost for small loans, 17% for medium loans, and only 9% for large loans. The study recommended minimization of transaction costs for small borrowers by streamlining loan application processes and government provisions of improving infrastructure to improve their performance. SMEs are more prone to transaction cost than large and multinational firms because they borrow in small amounts and are not able to benefit from 'economies of scale.'

This theory is relevant to this study since it informs the

transaction cost variable. The theory is applied in this study in order to explain why transaction cost is one of the determinants of financial cost, a major component of financial cost, and the perceived gains of firm managers who are able to reduce transaction cost. A manager who is able to reduce transaction cost will be able to reduce the overall cost of finance, thus improving the performance of the business.

2.2. Hypothesis

Transaction costs are divided into informational and non-informational cost. Informational transaction cost includes; quality and quantity search of the product, location of the buyer and the seller, price of the product and government rules concerning the product. Non-informational transaction costs are transport to and from the location of the lender, food, paper work, and intermediaries.

Null Hypothesis 1 (H_1): Asymmetry of information does not affect the performance of SMEs in Kenya

Asymmetry of information also referred to as information failure happens when one party to an economic transaction have more material knowledge than the other party [19]. Sales personnel, agents, and marketers are employed to reduce or eliminate market asymmetry of information. When a seller comes to a market with a product or service, he needs someone with more information about the location of the buyer, prices, and government regulations to sell that product. On the other hand, the buyers need information about the location of the seller, quality, and the price of the commodity [20]. The overall transaction cost depends the information that the seller and the buyer have from each other.

Null Hypothesis 2 (H_2): information technology does not affect the performance of SMEs in Kenya.

Information Technology (IT) involves the development, use, and maintenance of computer systems, software, and networks for the purpose of processing and disseminating data [21]. Creswell, and Poth, performed a study about the relationship between transaction cost and IT, taking 'coordination cost of IT' as their mediating variable. They found that there is a strong negative relationship between IT usage of firms and the transaction cost they incur [22]. This implies that when IT usage improves, transaction cost decreases and vice versa. In order to assess the equity, transactions will not be concluded successfully without the necessary information for the participating agents of exchange. This means that information search will be easier when IT is involved in the attainment of that information for the different parties in the transaction.

Null Hypothesis 3 (H_3): age and size of the businesses affects the performance of SMEs in Kenya.

SMEs have behavioral advantages in many activities, but they are disadvantaged in transaction costs because small firms generally produce small volumes of products and have not been in business long, thus have little benefit from economies of experience, scope, and scale. The effect of firm size on the transaction cost is straightforward. Financial

institutions may allocate employees to process the loan applications of big firms like safaricom due to the fact that they borrow large amounts of money and almost have zero risk of default.

3. Research Methodology

3.1. Research Design

Research design refers to the strategy that the researcher chooses to integrate the different components of the study in coherent and logical way to ensure addressing research problem and questions [23]. It constitutes the blue print of data collection, measurement, and analysis to get reliable result. Chatterjee, and Hadi added that research design is the guide of selecting sources and types of information and specifying the relationship among the variable, [24]. This study used s descriptive correlation research design to investigate the effect of transaction cost on the performance of SMEs in Kenya.

3.2. Sampling Technique

This study adopted multistage probability sampling method, where the researcher had randomly designated 10 counties from the 47 counties of Kenya and arbitrarily selected 26 establishments from each of the 10 counties. The method was completely arbitrary and the sample selected from the population was random. Each member of the population had an equal chance of being selected as a subject and the entire process of sampling is done in a single step with each subject selected independently of the other members of the population. Multistage random sampling was relevant for the study because, with geographical distribution of the population, sampling frame requires proper representation, accuracy, and affordable cost of administering the research mechanism.

3.3. Sample Size

More representative sample size is characterized by an error margin of between one and five percent [25]. This margin of error will allow an accurate generalization of the result. The sample size of this study was determined by the proportion of registered SMEs to all small and medium enterprises in Kenya, (21 percent) and Cochran's Sample Size Formula (CSSF) for large and categorical data was used. The desired level of confidence was 95 percent. The CSSF formula is

$$N = z^2 p (1-p) / m^2,$$

Where;

N=required sample size

Z=confidence level at 95% (standard value of 1.96)

P=proportion of the target population to the larger elements in the same category

M=margin of error at 5% (standard value of 0.05)

$N = 1.96^2 \times 0.21 (1-0.21) / 0.05^2$. $N \approx 260$

4. Correlation Analysis

Correlation coefficient is a scale indicating the strength and direction of a relationship between variables when there is quantitative dependent and independent variables. The relationship is denoted by R, which ranges from -1.00 to +1.00, while the negative or positive sign indicates the direction of the relationship [25].

4.1. Analysis of Variance

Anova is a set of statistical methods used to compare the means of two or more samples in order to measure their variability [26] The key statistical tests of ANOVA are: F test, Friedman’s test, Kruska-wallis test, Latin square, and Chi-square. In this research, F test and Kruskal-wallis’s test were used to analyze the difference between the means of the research variables.

4.2. Regression Analysis Assumption Tests

Regression Analysis Tests make some assumptions about data and violation of these assumptions alters the findings, interpretation, and conclusion of the study. Each data point is assumed to have the same amount of information, thus if some had less information than others, then the study’s regression slope would be only attracted towards the data-rich information [27]. A research using the various tests must follow these assumptions for correct interpretation.

4.3. Multiple Linear Regression Analysis

Multiple linear regressions were used in order to account for

the effect of transaction cost on SMEs performance. The magnitude of the effect was given by the β while the sign of the coefficients gave the direction of the effect. The study estimated the following three immoderate models based on ordinary least square technique. The following models are for market value, ROA, and sales growth as a measure of SMEs performance.

$$MV = \beta_0 + \beta_1 AI + \beta_2 IT + \beta_3 BAS + e \tag{1}$$

The following model is Return on Asset (ROA) as measure of SMEs performance.

$$ROA = \beta_0 + \beta_1 AI + \beta_2 IT + \beta_3 BAS + e \tag{2}$$

The following model is Sales Growth (SG) as measure of SMEs performance.

$$SG = \beta_0 + \beta_1 AI + \beta_2 IT + \beta_3 BAS + e \tag{3}$$

Where;

MV denotes market value of the firm; AS denotes asymmetry of information, IT denotes information technology, BAS denotes business age and size, ROA denotes return on asset, and SG=sales growth, MV=market value, and e =error term.

5. Study Result

5.1. General Information of the Respondents

The study sought to establish the general information about the respondents. Table 1 below indicates the result.

Table 1. General Information of the Respondents.

Response Rate	82.3%							
Gender	Male			Female				
	Primary	Secondary	Certificate	Diploma	Bachelor	Masters		
Level of Education	8%	52%	11%	15%	11%	3%		
Business sector	Transport	Wholesales	Retail	General merchants	Energy	Agriculture	Manufacturing	Hospitality
	29.4%	13.1%	11.7%	11.7%	9.8%	8.4%	8.4%	7.5%

5.2. Descriptive Statistics for Transaction Cost

The study analyzed the mean and standard deviation of the components of transaction cost. Table 2 below shows the result.

Table 2. Descriptive Statistics for Transaction Cost.

Constructs	Number	Mean	Standard Deviation
Asymmetry of information affect transaction cost of my business	213	3.995	.9737
Information technology affect transaction cost of my business	213	3.9437	1.0125
Age and size of my business affect transaction cost of my business	212	4.142	1.042
To what extent does asymmetry of information affect the market value of your business	214	3.818	1.0744
To what extent does information technology affect the market value of your business	214	3.581	1.0144
To what extent does age and size of your business affect the market value of your business	212	3.6557	1.2196
To what extent does asymmetry of information affect the ROA of your business	214	3.0981	1.3548
To what extent does information technology affect the ROA of your business	213	3.8169	1.1972
To what extent does age and size of your business affect ROA of your business	213	3.1831	1.3244
To what extent does asymmetry of information affect the sales growth of your business	214	3.6869	1.1507
To what extent does information technology affect the sales growth of your business	214	3.6449	1.1070
To what extent does age and size of your business affect its sales growth	213	3.000	1.4439

The result revealed that the mean for “Asymmetry of information affect transaction cost of my business” (M=3.995, SD= .9737), and the mean for “To what extent does age and size of your business affect its sales growth” (M=3.000, SD=1.4439).

5.3. Chronbach's Alpha Test

In order to test the internal consistency of transaction cost constructs, the study-conducted chronbach's alpha test. The result is shown in table 3 below.

Table 3. Chronbach's Alpha.

Chronbach's Alpha	Number of items
.717	12

Chronbach's alpha was 0.717, which is above the acceptable 0.70. This means that the items in the construct have relatively high internal consistency.

5.4. Scree Plot for Transaction Cost

The Scree Plot for Transaction Cost results indicated that only one component had eigenvalues greater than one. The results are shown in Figure 2.

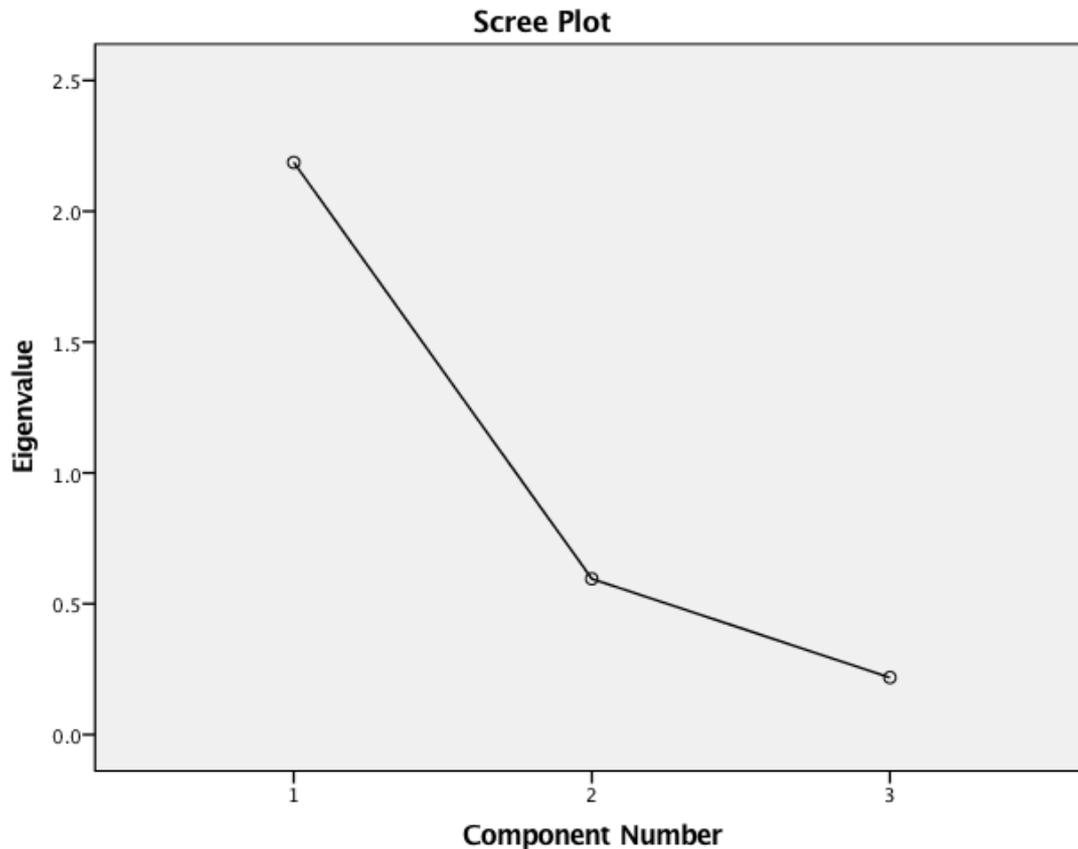


Figure 2. Scree plot for transaction cost.

5.5. Component Matrix for Transaction Cost

The study further assessed the factor loadings for the sub-variables under the transaction cost and SME performance.

The study used summated scores based on the three components to create an index of transaction cost. The result is indicated in Table 4.

Table 4. Component Matrix for Transaction Cost.

Construct	Component
	1
Asymmetry of information affect transaction cost of my business	.547
Information technology affect transaction cost of my business	.519
Age and size affect transaction cost of my business	.575

The result showed that the three components had a factor loadings greater than 0.5, thus they are strongly loaded to component one and none of the statements were dropped.

5.6. Correlation Between Transaction Cost and Business Performance

The study tested for correlation between transaction cost and performance sub-variables; market value, ROA, and sales growth. The results are shown in Table 5.

Table 5. Correlation Between Transaction Cost and Business Performance.

Constructs		Business performance		
		Market value	ROA	Sales growth
Asymmetry of information affect transaction cost of my business	Pearson Correlation	-0.232	-.087	-.244
	Sig. (2-tailed)	.001	.207	.521
	N	213	211	212
Information technology affect transaction cost of my business	Pearson Correlation	.022	.101	.149
	Sig. (2-tailed)	.755	.145	.030
	N	211	211	212
Age and size of my business affect transaction cost of my business	Pearson Correlation	-.079	-.113	-.323
	Sig. (2-tailed)	.255	.103	.075
	N	210	210	211

5.7. Summated Scores on the Three Components

Using Principal Components Analysis (PCA) the study summated scores on the three components and created an index of transaction cost, which was then correlated with SME performance. This finding is shown in Table 6 below.

Table 6. Correlation Between transaction cost and SME Performance.

		Business performance
Transaction cost	Pearson Correlation	-.363
	Sig. (2-tailed)	.000
	N	210

The results showed that transaction cost was negatively and significantly correlated with SME performance $r(210) = -0.363, p < 0.05$.

5.8. Regression Analysis and Hypotheses Testing

The study further sought to establish the effect of transaction cost on the dependent variable constructs, namely market value, return on assets, and sales growth.

5.9. Effect of Transaction Cost on Market Value

Multiple regressions were used to test if transaction cost significantly predicted market value. The result was shown in table 7 below.

(1) Model Summary for Market Value

The study findings revealed that the transaction cost explained insignificant proportion of variance in market value, $R^2 = .228$. The findings are hereby presented in Table 7.

Table 7. Model Summary*.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin Watson
1	.458	.210	.196	7.091	1.828
2	.478	.228	.204	7.018	1.870

The result implies that 22.8% of the changes in market value among the respondents can be explained by transaction cost in Kenya.

(2) ANOVA

Table 8 shows that transaction cost statistically significantly predicted market value, $f(3, 207) = 3.731, p < 0.05$.

Table 8. ANOVA*.

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	50.850	3	16.950	3.731	.012
	Residual	926.823	204	4.543		
	Total	977.673	207			
2	Regression	59.803	6	9.967	2.181	.046
	Residual	909.615	199	4.571		
	Total	969.417	205			

The results imply that transaction cost was a good predictor of market value of the business. The study concluded that the model was significant in explaining the relationship. Based on the insignificance of the F-statistic, the null hypotheses were rejected.

(3) Coefficients

The multiple linear regression results of the study showed

that, for the model without the moderator, transaction cost was significant in predicting market value, $\beta = -.209, t(207) = -3.009, p < .05$. For the model with the moderator, transaction cost significantly predicted market value, $\beta = -0.218, t(207) = -3.121, p < 0.05$. This means that a unit increase of transaction would decrease market value by 0.456. This result is shown in Table 9.

Table 9. Coefficients*.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	Constant	8.982	.912		9.853	.000
	Transaction cost	-.459	.153	-.209	-3.009	.003
2	Constant	9.565	1.597		5.990	.000
	Transaction cost	-.482	.154	-.218	-3.121	.002

The result implies that a unit increase of transaction cost moderated by insecurity would increase market value by .218 units.

5.10. Return on Assets

Multiple regressions were used to test if transaction cost significantly predicted return on assets. The results are shown

in three tables below, the Model Summary (Table 10), ANOVA (Table 11), and Coefficients (Table 12).

(1) Model Summary for Return on Assets

The multiple regression results in Table 10 indicate that transaction cost predicted 18 percent of variations in ROA ($R^2 = .180$). The result is in table 10.

Table 10. Model Summary*.

Model	R	R square	Adjusted R square	Std. Error of the Estimate	Durbin Watson
1	.435	.189	.177	19.114	1.302
2	.424	.180	.184	18.263	1.352

The result implies that 18% of the changes in ROA among the respondents can be explained by transaction cost in Kenya.

(2) ANOVA

Table below shows that transaction cost did statistically significantly predicted return on assets, $f(6, 204) = 1.815$, $p < .05$.

Table 11. ANOVA*.

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	32.254	3	10.751	1.999	.015
	Residual	1091.958	203	5.379		
	Total	1124.213	206			
2	Regression	42.451	6	7.075	1.815	.042
	Residual	1065.188	198	5.380		
	Total	1107.639	204			

(3) Coefficients

For the model with the moderator, transaction cost was significant in predicting ROA, $\beta = -.095$, $t(204) = -1.346$, $p < .05$. The result is shown in Table 12 below.

Table 12. Coefficients*.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	Constant	7.754	.995		7.793	.000
	Transaction cost	.197	.166	-.083	-1.185	.041
2	Constant	6.378	1.735		3.677	.000
	Transaction cost	-.226	.168	-.095	-1.346	.037

The result implies that a unit increase of transaction cost moderated by insecurity would decrease ROA by .226 units.

5.11. Sales Growth

Multiple regressions were used to test if transaction cost

significantly predicted sales growth. The results are shown in tables 13, 14, and 15.

(1) Model Summary for Sales Growth

Table 13 of multiple regression results showed that transaction cost explained 14.7 percent of variations in sales growth ($R^2 = 0.147$).

Table 13. Model Summary*.

Model	R	R square	Adjusted R square	Std. Error of the Estimate	Durbin Watson
1	.368	.135	.125	4.5207	1.974
2	.384	.147	.131	4.7377	2.015

(2) ANOVA

Table 14 shows that transaction cost did not statistically significantly predicted sales growth, $f(6, 206)=1.471$, $p=>.05$.

Table 14. ANOVA*.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.646	3	9.215	1.993	.116
	Residual	947.856	205	4.624		
	Total	975.502	208			
2	Regression	40.361	6	6.727	1.471	.190
	Residual	914.595	200	4.573		
	Total	954.957	206			

(3) Coefficients

Transaction cost was significant in predicting sales growth, $\beta=-0.131$, $t(208)=-0.440$, $p<.05$. The result is shown in Table 15 below.

Table 15. Coefficients*.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	Constant	8.338	.920		9.063	.000
	Transaction cost	-.047	.154	-.121	-.303	.042
2	Constant	6.266	1.599		3.919	.000
	Transaction cost	-.068	.155	-.131	-.440	.038

H_{02} : The transaction cost has a significant effect on the performance of small and medium enterprises in Kenya. The result led the rejection of the null hypotheses and accepting the alternate hypotheses.

6. Conclusions and Discussion

The relationship between transaction cost and SME performance was negative implying that increased transaction cost causes decline of SME performance. The factors influencing transaction costs are asymmetry of information, information technology, and age and size of the business. The better the improvement of these variables, the lesser the transaction cost that the business will incur thus improving their performance. Higher uncertainty of the three dimensions of asymmetry of information, information technology, and business size leads to higher transaction cost.

Depending on the situation, transaction costs can be independent of the quantity or value of goods transferred, while in other cases, transaction cost may be replaced by "economies of scale" where larger transactions incur relatively smaller costs on per cost unit basis. Large companies are able to avoid high transaction costs by employing their economies of scale and making the suppliers of goods or services to bear those expenses. From the prospective of asymmetry of information, knowledge about the rules and regulations of the state about markets as well as the different products should be availed by all market participants. From the perspective of information technology, online business transactions can reduce transaction cost of the enterprises by connecting the market participants virtually. The government should improve access to technology for SMEs in order to reduce transaction cost. From the perspective of business age and size, SMEs should form associations in borrowing to take advantage economies of scale and divide loans among themselves.

6.1. Policy Implications

In order to improve the efficiency of market transaction cost, the policy makers should establish equal access to the market information across market participants. The use of information technology can reduce transaction cost massively since it enables transaction to take place without physical convene of the participants. The government should improve access to technology for SMEs by increasing connection to the national grid and improving infrastructure to reduce transport fees. The SMEs should form SACCOs and associations to take advantage the economies of scale in borrowing. The government should form an institution that provides free loans for SMEs to reduce the ever-increasing influence of lending institutions that hinder access to credit for SMEs. The government should formulate policies of regulating charges of commercial banks on SME loans. Commercial banks evaluate recovery process and riskiness of the borrower in charging interest rate. The government should set easy recovery process for the lenders in order to reduce cost of finances for SMEs.

6.2. Discussion

The regression results in this study showed that transaction cost was significant in predicting market value and sales growth, but was not significant in predicting ROA. The study notes that large companies do not incur similar transaction costs as small businesses. Another name for transaction cost is "economies of scale" which SMEs lack, but medium and large corporations possess. How to precisely measure the transaction costs and decompose the transaction costs from production and other costs need to be further studied. Besides

asymmetry of information, information technology, and business size have impact on transaction cost, other variables like uncertainty, insecurity, and distribution channels need to be studied in transaction cost reduction.

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