



## The influence of Equity and Trade credit Finance structure on SME's Growth in Rwanda

Emmaboles Rubunda<sup>1</sup>, Gregory S.Namusonge<sup>2</sup>, Oluoch Oluoch<sup>3</sup>

1. erubunda@yahoo.co.uk

PhD candidate Jomo Kenyatta University of Agriculture and Technology Nairobi, Kenya

2. gnamusonge@jkuat.ac.ke

Lecturer Jomo Kenyatta University of Agriculture and Technology Nairobi, Kenya

3. oluochjoluoch@gmail.com

Lecturer, Jomo Kenyatta University of Agriculture and Technology Nairobi, Kenya

### Abstract

The study investigated the influence of equity and trade credit finance structures on the growth of manufacturing SMEs in Rwanda. Two objectives guided the study; to determine the influence of equity finance structure on the growth of manufacturing SMEs in Rwanda and to investigate the influence of trade credit finance structure on the growth of manufacturing SMEs in Rwanda. The study used a mixed research design approach for collecting and analyzing data using a target population of 868 SMEs registered with Rwanda Development Board as of November 2017. Stratified random sampling technique was utilized to draw a sample size of 273 SMEs. Close-ended questionnaires were employed in data collection and data was analyzed using Statistical Package for Social Science (SPSS) to generate descriptive statistics including percentages, frequency tables and mean scores. Multiple regression analysis was used to explore the relationship between trade credit, debt finance and growth of small and medium size manufacturing enterprises in Rwanda. Analysis of variance (ANOVA) was utilized to test the significance of the model.  $R^2$  indicted the extent of the goodness fit of the regression model. The study findings showed that equity finance had a positive and significant influence on growth of small and medium manufacturing enterprise in Rwanda. Trade credit finance was also found to have a positive and significant influence on growth of small and medium manufacturing enterprise in Rwanda. The study recommends that the management of SMEs should be trained on the use of accounts receivable and accounts payable to fully take advantage of trade credit finance structure. This will ensure the SMEs grow their operations even during time of low liquidity.

**Keywords:** Trade credit; Equity; Finance structure; Manufacturing SMEs.

### 1. Introduction

Equity financing method refers to the extent to which the company issues a certain portion of shares of its stock and in return receives money. Depending on how the SMEs raise the equity capital, the debtors have to relinquish a certain portion of the business often 25 to 75 % of the business (Covas and Haan, 2012). Hence, equities are issued in the form of common stocks which gives a claim to share in the net incomes after expenses and taxes. Equity holders are paid periodically in form of dividends and can be considered as a long-term security as there is no maturity date.

Other than equity and debt finance, trade credit has also been identified as an important source of finance for firms, especially when firms find it difficult to obtain external funding via credit institutions. Several researchers highlight trade credit as the most important alternative to bank loans as a source of external funding in the SME sector (Demirgiic-Kunt and Maksimovic, 2001). Moreover, some authors have demonstrated how trade credit provides a safety valve for firms facing distinctive liquidity shocks (Boissay and Gropp, 2007; Cunat, 2007). Rodriguez (2006) argued that through trade credit, suppliers can reduce the transaction costs associated with the insolvency of each

individual commercial exchange. Hence according to Wilner (2000), trade credit helps SMEs to establish a stable commercial relationship in long run.

On the demand side, trade credit can be considered as short-term debts in terms of accounts payable and it is an efficient approach to address SMEs' financial frictions in short term (Meltzer, 1960) as cited in Carbo, Fernandez and Udell (2012). This is because due to limited informational transparency, banks are reluctant to offer debts to SMEs or banks require high interest rates to compensate high risk (Guillaume, Stagliano, and Van der Zwan, 2015). Trade credit can therefore be more accessible, especially over the period of a tight monetary policy since customers switch to trade credit as effective loan interests exceed the effective costs of trade credits. This is associated with the relative stability of trade credit that makes implicit interest rate consistent. Meanwhile, the interest rates of bank loans are increasing during a tight monetary period, which leads to more expensive costs of bank loan than that of trade credit (Mateut, 2009). Hence, firms, reducing cost of raising capital, will earn more profitability.

Moreover, there is a positive relationship between trade credit and bank loan. Agostino, Sabrina and Trivieri (2014) investigate 4,543 firms in Italy and confirm a positive relationship arguing that if suppliers are willing to offer trade credit and then bear default risk, for banks, it would mean that suppliers have acquired information affirming that buyer firms have the ability to pay back the debts. Consequently, banks have a positive attitude towards buyers, and therefore provide debts to buyers. Hence, trade credit enables the private information of the seller to be used in the lending relationship, and this additional information can alleviate credit rationing due to adverse selection.

Despite the above benefits of the above financing options for SMEs, Rwandan Manufacturing SMEs still face wide ranging barriers in terms of access to finance for growth and expansion (Ndikubwimana, 2016). Moreover, according to Mahembe (2011), in Rwanda, as in other countries in the world, there is a misperception that a broad supply of debt financing to SMEs will overcome most growth and development barriers that SMEs face. Yet in practice, without a proven track record, SMEs face debt financing shortage. It is in light of such challenges that this study sought to explore equity and trade credit financing options as remedy for financing shortage that SMEs in Rwanda face.

## **1.1. Statement of the Problem**

Rwandan Manufacturing SMEs still face wide ranging barriers in terms of access to finance for growth and expansion (Ndikubwimana, 2016). Moreover, in Rwanda, as in other countries in the world, there is a misperception that a broad supply of debt financing to SMEs will overcome most development problems that SMEs face (Mahembe, 2011). Yet in practice, most SMEs lack a proven track record which aggravates the information asymmetry that precipitates the shortage of debt finance with reluctance of banks to undertake lending risks to SMEs (Mahembe, 2011). This situation however, leaves other financing options such as equity and trade credit open for SMEs. Yet there is little in terms of literature to explain how SMEs in Rwanda take advantage of equity and trade credit financing options to fill the financing gap or debt financing shortage to leverage growth and expansion opportunities. It is on such basis that this study sought to explore the effect of equity and trade credit on growth of manufacturing SMEs in Rwanda.

### **Specific objective**

- i. To investigate the influence of trade credit finance structure on the growth of small and medium manufacturing enterprises in Rwanda.
- ii. To examine the influence of equity finance structure on the growth of small and medium manufacturing enterprises in Rwanda.

### **Research Hypothesis**

**H0<sub>1</sub>:** There is no significant influence of trade credit finance structure on the growth of small and medium manufacturing enterprises in Rwanda

**H0<sub>2</sub>:** There is no significant influence of equity finance structure on the growth of small and medium manufacturing enterprises in Rwanda.

## **2. Review of Literature**

### **2.1 Theoretical Review**

#### **Credit Rationing Theory**

Credit rationing theory as propounded by Stiglitz and Weiss (1981) cited in Malhotra and Endres, (2015) elaborates a framework for analyzing financial market inefficiencies that affect credit financing. The theory asserts that,

information asymmetry is the main cause of financial market malfunctioning in developing countries which hinders credit allocation and leads to credit rationing. Lending institutions that advance credit to economic agents are not only interested in the interest income that accrues on credit facilities, but also the risks of such facilities (Helsen and Chmelar, 2014). According to these authors, the interest that banks charge on loans have the tendency to affect the risks of a pool of loans by either sorting potential borrowers (adverse selection effect) or affecting the behavior of borrowers (moral hazard effect). Low risk borrowers, faced with high interest rates, *ceteris paribus*, will be expecting negative returns and hence will not go for such loans. Terms of lending are thus designed by lending institutions in a manner that induces borrowers to take actions in the institutions' interest (Malhotra and Endres, 2015). According to Helsen and Chmeler, (2014), low risk borrowers are altogether eliminated from the stream of potential borrowers and banks may not be interested in granting loans to them particularly due to information asymmetry which is a source of market inefficiency in developing countries and leads to low risk borrowers such as SMEs being sidelined or even excluded from the stream of potential borrowers.

### **Pecking order theory**

The pecking order theory, which was propounded by Myers and Majluf, (1984) as cited in Jibrán, Wajid, Waheed, and Muhammad (2012) states that firms prefer internal equity to external debt. When a firm needs financial resources it can choose between internal financing and external financing. Thus, the theory asserts that capital structure is driven by firm's desire to finance new investments, first internally, then with low-risk debt, and finally if all fails, with equity. Therefore, the firms prefer internal financing to external financing (Tri Gunarsih, 2017). In the context of the study, pecking order theory demonstrates the dilemma of SMEs in providing accurate financial statement given the high cost. Consequently, SMEs prefer internal funding to external funding such as bank credit (Jibrán, Wajid, Waheed, and Muhammad, 2012).

## **2.2 Empirical Review**

### **Equity**

Equity financing is said to be the most important source of income and has a positive relationship with firm/business performance. Firms that use equity finance are able to perform better since there is direct control. Moreover, equity holders are residual claimant with interest in ensuring that resources are allocated efficiently (Caroline and Willy, 2015). Njagi, Maina and Kariuki (2017) argue that equity financing comprise of retained profits, own savings, contribution from board members, contribution from partners and friends, deferred income and cash flows of the business. Ibarahim (2008) cited in Njagi et al (2017) defines Angel Investors (business angels) are wealthy individuals who place equity in business that they believe have high growth and return prospects and are interested in supporting the entrepreneur. Many successful large companies which attracted venture capitalists or public equity relied first on angels (Njagi, et al, 2017).

Bell and Vos, (2009) argue that many small firms are established as family business which may not pursue growth strategies. Yet, if SMEs have unconstrained choice between external debt and internal resources, they will choose not to use debt financing because of a desire to retain control and independence (Bell and Vos, 2009). They further conceded that the owners of SMEs may show strong preference for the funding options, which have minimal or no intrusion into the business that is retained earnings and personal savings (Bell and Vos, 2009).

### **Trade credit**

Kapkiyai and Mugo (2015) observe that Trade credit has been indicated to be an important source of finance for SMEs, particularly to those SMEs with difficulties in obtaining external funding via credit institutions such as Banks. Recently, trade credit in the form of accounts payable and receivable of euro area non-financial firms have moved broadly in line with the business cycle. This confirms the typically pro-cyclical pattern of accounts payable and receivable, as they are closely linked to the exchange of goods and services and hence, to economic activity although for developing countries, this cycle has not been observed (Ferrando and Mulier, 2013).

Carvalho and Schiozer (2014) in their study argue that Operations involving trade credit represent 69% and 52% of assets and liabilities, respectively of Spanish micro and small enterprises. In the United Kingdom, the authors maintain that 41% of the total debt of medium-sized firms and 35% in the USA involve trade credit. In Brazil, Carvalho et al (2014) show that 75% of national micro and small enterprises (MSEs) make more than 50% of their purchases as forward purchases. Garcia and Martínez (2010) investigated the determinants of trade credit by small English firms and demonstrated that larger firms with better access to both internal and external financing at a lower cost require less trade credit from suppliers and that firms with larger growth opportunities make greater use of trade credit to fund additional sales volumes

According to Nanyondo (2017) in Egypt, most SMEs are inclined to use alternative finance in the form of trade credit (Nasr, 2013). Using secondary data from the Central Bank of Egypt (CBE), analysis indicated that 19% of SMEs use formal bank finance, compared to 81% usage by large enterprises. In addition, the descriptive statistics indicated that fewer than 50% of SMEs in Egypt sought formal bank finance in the period 2012 to 2013. The respondents indicated that SMEs dislike the bureaucracy that surrounds access to formal finance. Likewise, loan officers indicated that nearly 80% of SMEs lack accepted collateral to secure the loans and insufficient guarantors to secure the finance (Nasr, 2013). Amy and Lien (2017) maintain that in Australia, trade credit owed by Australian businesses (both listed and unlisted corporations) is estimated to have been over \$ 80 billion in March 2013, which accounted for around 8 per cent of their total liabilities. According to the Dun & Bradstreet financial database, data for unlisted (typically smaller) businesses suggest that trade credit is a particularly important source of debt funding for this segment of the business sector and accounted for around 40 per cent of their total liabilities.

### 3. Methodology

#### 3.1. Research Design

This study used mixed methods of research design. According to Elahi and Dehdashti (2011), the research design is appropriate when the research objectives involve: portraying features of a social or physical phenomenon and determining the frequency of occurrence; examining the degree to which the variables are associated and making predictions regarding the occurrence of social or physical phenomena. Both qualitative and quantitative research approach were used. According to Zikmund, Babin, Carr and Griffin (2010) qualitative research is concerned with understanding the social phenomenon from the participants' perspective while quantitative research is an inquiry into an identified problem, based on testing a theory, measured with numbers, and analyzed using statistical techniques. Combining the two approaches provides a richer presentation of the reality according to Silverman (2005). The study combined the two approaches to examine the influence of debt finance structure on the growth of small and medium size manufacturing enterprises in Rwanda.

#### 3.2 Target population

The target population of this study was 868 SMEs in the manufacturing sector licensed under the Rwanda Development Board (RDB, 2017). The SMEs provided information on constraints they face when attempting to access finance.

#### 3.3 Sampling Frame and Size

The sampling frame for the study was drawn from the ministry of Trade and Industry database (the line ministry for RDB) that promotes industry and entrepreneurial development through facilitation of SMEs to access markets and finance.

### 4. Data Analysis

The data was collected and analyzed, with respect to the study objectives, using both descriptive and inferential statistics. The tool of analysis adopted in this study was Statistical Package for Social Sciences (SPSS) version 21 for descriptive data and advanced Microsoft excel for quantitative data. The data was analyzed using descriptive statistics such as percentages, means, and standard deviation.

#### 4.1 Response Rate

In this study, a total of 273 questionnaires were administered to the selected respondents. The questionnaires that were dully filled and returned were 225 while 48 were not properly filled and some were not returned. The study recorded a response rate of 82% which according to Fosnacht (2013) is above the acceptable response rate of 75% considered as adequate for the study.

**Table 4.1 Response Rate**

	Frequency	Percentage
Returned Questionnaires	225	82%
Non Responses	48	18%
<b>Total</b>	<b>273</b>	<b>100</b>

#### 4.2. Gender of the Respondents

Figure 4.1 indicates that 55% of the respondents were male while 45% of the respondents were female. The study finding implies that information collected by the study was gender representative and further the findings implied that small business in manufacturing enterprises in Rwanda were operated by people from both gender. The findings further shows that women just like their male counterparts are stepping forward to be involved in

meaningful economic activities to generate income contrary to the past where economic activities were dominated by men.

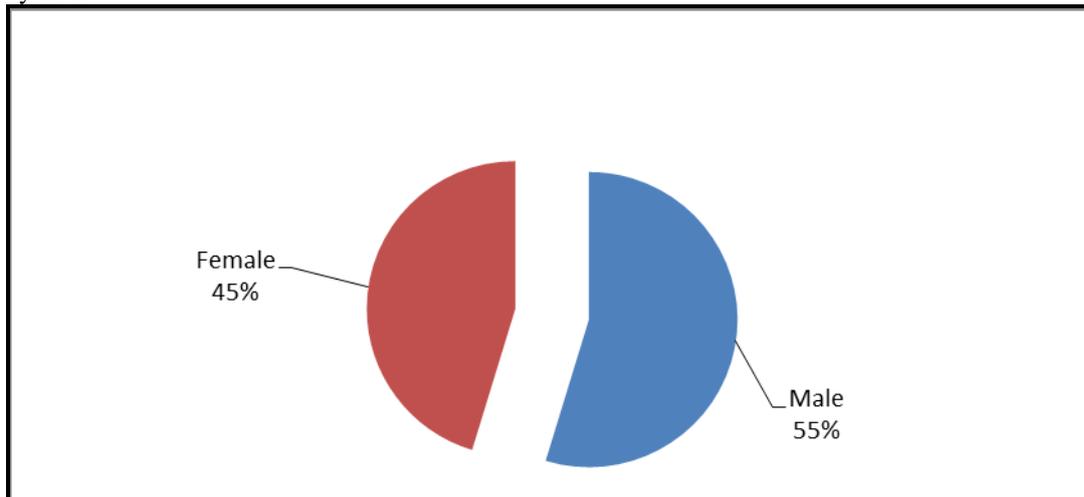


Figure 4.1 Gender of the Respondents

## 5. Results

### 5.1 Effect of Equity Finance structure on Manufacturing SMEs Growth

The first objective of the study was to determine the influence of equity finance structure on the growth of manufacturing SMEs in Rwanda. The study employed factors analysis, descriptive statistics and inferential statistics to test the effect of equity finance on growth of manufacturing SMEs in Rwanda.

#### 5.1.1 Factors Analysis for Equity Finance structure Indicators

The findings of factor analysis presented in Table 5.1 show that all the factors used to measure equity finance had factor loadings above the threshold of 0.4 adopted by the study. The finding implied that all the factors had significance in terms of explaining the equity finance structure hence none of the constructs was removed because they loaded appropriately. The factor loadings varied between 0.652 and 0.920.

Table 5.1 Factors Analysis for Equity Finance structure Indicators

Equity Finance Indicators	Factor Loadings
Personal savings contributed to the business growth success for the past years of operations	0.652
Own personal savings constitute a large share of my business capital finance to meet business investment obligations	0.770
The business relies on personal savings than other form of equity finance	0.687
I prefer employing angel investors' finance to sustain net value of the business	0.773
Use of angel investors' finance has led to steady growth in profits for my business	0.843
Angel investors' contributions to the business are in line with the firm's finance structure policy	0.887
The business mainly relies on family and friends contributions and reinvested profits to finance business operations	0.882
I prefer employing family and friends' capital to finance business operating activities because they carry less finance costs	0.920
Family and friends involvement in my business is important to achieving high profits	0.845

Extraction Method: Principal Component Analysis.

#### 5.1.2 Descriptive Results on Equity Finance structure

The study used percentages, mean and standard deviation to analyze how responses to various attributes used to measure the influence of equity finance structure on growth of small and medium manufacturing enterprises in Rwanda. Table 5.2 reveals details of descriptive analysis as follows.



Equity Finance	Pearson Correlation	1	.423**
	Sig. (2-tailed)		.000
	N	225	225
Growth of SMEs	Pearson Correlation	.423**	1
	Sig. (2-tailed)	.000	
	N	225	225

\*\*Correlation is significant at the 0.05 level (2-tailed).

#### 5.1.4. Univariate Regression Analysis Equity Finance structure and SMEs growth

The study also employed univariate regression analysis to test the effect of equity finance other factors held constant. The results for regression analysis between equity finance and growth of manufacturing SMEs are presented in Table 5.4 to 5.6.

**Table 5.4 Model Summary for Equity Finance and SMEs Growth**

Model	R	R-Square	Adjusted R Square	Std. Error of the Estimate
1	.423 <sup>a</sup>	.179	.175	.43540

a. Predictors: (Constant), Equity Finance

Table 5.4 shows that R-square for the model used to link equity finance and growth of manufacturing SMEs in Rwanda was 0.179. These results imply that other factors held constant, equity financing accounts for 17.9% of the growth of small and medium manufacturing enterprises in Rwanda. The findings further mean that equity finance influences growth of manufacturing SMEs in Rwanda.

**Table 5.5 ANOVA for Equity Finance structure and SMEs Growth**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.214	1	9.214	48.604	.000 <sup>b</sup>
	Residual	42.274	223	.190		
	Total	51.488	224			

a. Dependent Variable: Growth of SMEs

b. Predictors: (Constant), Equity Finance

Table 5.5 presents the findings on the analysis of the variance (ANOVA) of the model used to link equity finance and growth of manufacturing SMEs in Rwanda. The results of  $F=48.604$  with a corresponding  $p=0.000$  shows that the model was statistically significant, hence the study failed to reject the null hypothesis the goodness of fit. The finding further implied that equity finance significantly explains the variation in growth of manufacturing SMEs in Rwanda.

**Table 5.6 Regression Coefficients for Equity Finance structure and SMEs Growth**

	B	Std. Error	Beta	t	Sig.
(Constant)	2.554	0.143		17.909	0.000
Equity Finance	0.300	0.043	0.423	6.972	0.000

a Dependent Variable: Growth of SMEs

Table 5.6 reveals that  $\beta=0.300$ ,  $p=0.000 < 0.05$ . These findings imply that equity finance has a positive and significant effect on growth of the manufacturing SMEs in Rwanda other factors held constant. A unit increase in equity finance would result to increase on 0.300 units in growth of manufacturing SMEs.

## 5.2 Effect of Trade Credit Finance structure on SMEs Growth

The second objective of the study was to investigate the influence of trade credit finance structure on the growth of manufacturing SMEs in Rwanda. Similarly, the study employed various tests which include factor analysis, descriptive and inferential statistics to establish the influence of trade credit finance on growth of manufacturing SMEs in Rwanda.

**Factors Analysis for Trade Credit Finance structure Indicators**

The findings of factor analysis presented in Table 5.7 shows that all the factors used to measure trade credit finance had factor loadings above the threshold of 0.4 adopted by the study. The finding implied that all the factors had significance in terms of explaining the trade credit finance hence none of the constructs was removed.

**Table 5.7 Factors Analysis for Trade Credit Finance Indicators**

Trade Credit Finance Indicators	Factor Loadings
Customers always honor their commitment to make payment in agreed credit period	0.759
Appropriate credit period creates repeat business for my company	0.753
The business considers the length of credit period for the customer before trade credit approval	0.689
The business prefers giving favorable credit terms and standards to customers than cash sales in return of long-term relationship building	0.587
The business receives payments from suppliers based on contract credit terms and standards	0.728
Shorter and strict credit terms and standards reduce sales revenue for my business	0.695
Business trade discounts do not conflict with the liquidity demands of my firm	0.637
Customers' loyalty and goodwill increase whenever I offer favorable trade discount facilities	0.805
Business grants trade discount only to big organizations	0.726

**Extraction Method: Principal Component Analysis.**

**5.2.1. Descriptive Results on Trade Credit Finance structure**

Table 5.8 presents the descriptive results of trade credit finance. The study used percentages, mean and standard deviation to analyze the respondents' feedbacks on the statements used to measure the influence of trade credit finance on growth of small and medium manufacturing enterprises in Rwanda.

**Table 5.8 Descriptive Results on Trade Credit Finance structure**

	SD	D	NS	A	SA	Mean	Std Dev
Customers always honor their commitment to make payment in agreed credit period	2.7%	28.0%	6.7%	46.7%	16.0%	3	1.14
Appropriate credit period creates repeat business for my company	2.7%	37.3%	10.7%	44.0%	5.3%	3	1.06
The business considers the length of credit period for the customer before trade credit approval	2.7%	34.7%	5.3%	53.3%	4.0%	3	1.05
The business prefers giving favorable credit terms and standards to customers than cash sales in return of long-term relationship building	4.0%	34.7%	13.3%	41.3%	6.7%	3	1.09
The business receives payments from suppliers based on contract credit terms and standards	4.0%	16.0%	9.3%	64.0%	6.7%	4	0.97
Shorter and strict credit terms and standards reduce sales revenue for my business	10.7%	29.3%	12.0%	42.7%	5.3%	3	1.17
Business trade discounts do not conflict with the liquidity demands of my firm	8.0%	32.0%	1.3%	53.3%	5.3%	3	1.17
Customers' loyalty and goodwill increase whenever I offer favorable trade discount facilities	13.3%	24.0%	5.3%	53.3%	4.0%	3	1.21
Business grants trade discount only to big organizations	28.0%	32.0%	2.7%	33.3%	4.0%	3	1.31

As indicated I Table 5.8, the study sought to establish whether customers always honor their commitment to make payment in agreed credit period, the results show that respondent had varying opinions as indicated by 46.7% and 16.0% who agree and strongly agree respectively and 28.0% and 2.7% who disagree and strongly disagree respectively. The findings imply that in some small and medium manufacturing enterprises customers honor their commitment while in other others customer failed to honor their commitments.

The study further sought to establish whether appropriate credit period creates repeat business for my company, similarly some of the respondents agree (44.0%) while other disagree (37.3%). The findings implied that appropriate credit period created repeat business in some firms while in others it did not. On whether, manufacturing SMEs considered the length of credit period for the customers before trade credit approval, more than half (53.3%) of the respondents agree. The study further sought to establish whether manufacturing SMEs in Rwanda preferred giving favorable credit terms and standards to customers than cash sales in return of long-term relationship building. The findings show that some firms do as indicated by 41.3% who agree while others don't as indicated by 34.7% who disagree. The mean of 3 confirmed that respondent had varying views on use of favorable credit terms and standards to customers in return of long-term relationship building.

The study further sought to establish whether manufacturing SMEs receive payments from suppliers based on contract credit terms and standards, the study finding show that majority (64.0%) of the respondents agree. On whether shorter and strict credit terms and standards reduce sales revenue for my business 42.7% and 5.3% of the respondents agree and strongly agree respectively while 29.3% and 10.7% disagree and strongly disagree respectively. The findings confirmed that manufacturing SMEs in Rwanda used trade credit finance in their business. The main purpose trade credit is to build customer loyalty and increase repeat purchase from their customers which leads to growth of their businesses.

**5.2.2. Correlation Analysis for Trade Credit Finance structure and SMEs Growth**

The study further used correlation analysis to test the association between trade credit finance and growth of the manufacturing SMEs in Rwanda. Table 5.9 revealed trade credit finance has a weak positive association with growth of manufacturing SMEs in Rwanda as shown by the Pearson correlation value of  $r=0.428$  and  $p=0.000$ . The correlation is significant at the level of significance of 0.05. The results imply that increasing trade credit finance would lead to increase in growth of manufacturing SMEs in Rwanda.

**Table 5.9 Correlation Analysis for Trade Credit Finance structure and SMEs Growth**

		Trade Credit Finance	Growth SMEs
Trade Credit Finance	Pearson Correlation	1	.428**
	Sig. (2-tailed)		.000
	N	225	225
Growth of SMEs	Pearson Correlation	.428**	1
	Sig. (2-tailed)	.000	
	N	225	225

\*\* . Correlation is significant at the 0.05 level (2-tailed).

**5.2.3 Univariate Regression Analysis Trade Credit Finance structure and SMEs growth**

The study further also used univariate regression to test the influence of Trade Credit Finance on the growth of small and medium manufacturing enterprises in Rwanda. The results of the regression analysis are presented in table 5.10 to 5.12.

**Table 5.10 Model Summary Trade Credit and SMEs Growth**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.428 <sup>a</sup>	0.183	0.179	.43433

a. Predictors: (Constant), Trade Credit Finance

Table 5.10 shows coefficient of determination (R-square) =0.183 which implies that other factors held constant, trade credit finance accounts for 18.3% of the variation in growth of the manufacturing SMEs in Rwanda. The findings further means that trade credit finance is a good predictor's variable of growth of small and medium manufacturing enterprises in Rwanda. The results agree with Rodriguez (2006) who found that SMEs receive more capital from market, gaining more investment and growth opportunities through the use of trade credit finance structure.

**Table 5.11 ANOVA for Trade Credit Finance structure and SMEs Growth**

Model	Sum of Squares	df	Mean Square	F	Sig.
-------	----------------	----	-------------	---	------

	Regression	9.421	1	9.421	49.941	.000 <sup>b</sup>
1	Residual	42.067	223	.189		
	Total	51.488	224			

a. Dependent Variable: Growth of SMEs

b. Predictors: (Constant), Trade Credit Finance

Table 4.11 presents the findings from analysis of the variance (ANOVA) of the model used to link trade credit finance structure and growth of small and medium manufacturing enterprises in Rwanda. The results of  $F=49.941$  with a corresponding  $p=0.000$  shows that the model was statistically significant, hence the study failed to reject the null hypothesis the goodness of fit.

**Table 5.12 Regression Coefficients for Trade Credit Finance structure and SMEs Growth**

	$\beta$	Std. Error	Beta	t	Sig.
(Constant)	2.743	0.115		23.9	0.000
Trade Credit Finance	0.250	0.035	0.428	7.067	0.000

a Dependent Variable: Growth of SMEs

Table 5.12 presents the findings of regression coefficients of trade credit finance structure and growth of small and medium manufacturing enterprises. The study results reveal a beta value of  $\beta=0.250$ ,  $p=0.000 < 0.05$ . The findings imply that trade credit finance has a positive and significant effect on growth of small and medium manufacturing enterprises in Rwanda other factors held constant. A unit increase in trade credit finance would results to increase on 0.250 units in growth of small and medium manufacturing enterprises.

### 5.2.4 Multivariate Regression Analysis to assess the overall contribution of the model

A standard multiple linear regression (MLR) using the enter method was used to assess the ability of the study variables (Equity finance structure and trade credit) to explain variance in availability of pipe water in Kigali City. The results are portrayed in the model summary Table 5.13.

**Table 4.39 Multiple Regression Coefficients**

	$\beta$	Std. Error	Beta	t	Sig.
(Constant)	2.397	0.218		11.014	0.000
Trade Credit Finance	0.160	0.05	0.273	3.161	<b>0.002</b>
Equity Finance	0.187	0.052	0.263	3.554	<b>0.000</b>

a Dependent Variable: Growth of SMEs

This study sought to test the conceptual model  $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + e$

The general model after testing the hypotheses therefore became;

$$Y = 2.397 + 0.160(\text{Trade Credit Finance}) + 0.187(\text{Equity Finance}) + \varepsilon$$

#### **Hypothesis one: There is no significant influence of equity finance structure on the growth of manufacturing SMEs in Rwanda**

The study sought to test  $H_{01}$ . In the multivariate model, the coefficient for equity finance structure was  $\beta = 0.187$  which was significantly different from 0 with a p-value= 0.000 which was less than 0.05. The findings therefore imply that equity finance structure has a positive and significant influence on the growth of manufacturing SMEs in Rwanda. The study therefore, rejected null hypothesis  $H_{01}$  that there is no significant influence of equity finance structure on the growth of manufacturing SMEs in Rwanda and concluded that equity finance has significant influence on growth of manufacturing SMEs in Rwanda.

#### **Hypothesis two: There is no significant influence of trade credit finance structure on the growth of manufacturing SMEs in Rwanda.**

The study sought to test  $H_{02}$ . In the multivariate model, the coefficient for trade credit finance structure was  $\beta = 0.160$  which was significantly different from 0 with a p-value= 0.002 which was less than the traditional 0.05. The findings hence imply that trade credit finance structure has a positive and significant effect on growth of manufacturing SMEs in Rwanda. The study therefore, rejected null that hypothesis  $H_{02}$ : There is no significant influence of trade credit finance structure on the growth of manufacturing SMEs in Rwanda.

## 6. Discussion

The study also sought to determine the influence of equity finance structure on the growth of manufacturing SMEs in Rwanda. The first objective was to determine the influence of equity finance structure on the growth of manufacturing SMEs in Rwanda. The findings of correlation analysis to test the nature of association between equity finance and growth of manufacturing SMEs in Rwanda reveal that equity has a weak and positive correlation with growth of manufacturing SMEs in Rwanda. In the multivariate model, the coefficient for equity finance structure was significant which implied that equity finance structure had a positive and significant effect on growth of manufacturing SMEs in Rwanda. The study therefore rejected the null hypothesis  $H_{01}$  that there is no significant influence of equity finance structure on the growth of manufacturing SMEs in Rwanda and concluded that there is significant influence on equity finance on growth of manufacturing SMEs in Rwanda. This study finding concurs with proponents of pecking order theory who argue that majority of the firms relied first on equity financing before considering external finance. Similarly, Barclay and Smith (2005) posit that firms prefer internal financing to external financing. Internal financing are not subject to interest rates as compared to external financing.

The second objective of the study was to investigate the influence of trade credit finance structure on the growth of manufacturing SMEs in Rwanda. Results of correlation analysis revealed that trade credit finance had a weak positive association with growth of manufacturing SMEs in Rwanda. This implies that increasing trade credit finance would lead to increase in growth of manufacturing SMEs in Rwanda. The findings of regression analysis similarly indicate that trade credit finance has a positive and significant effect on growth of the manufacturing SMEs in Rwanda other factors held constant. Hence, the study, rejected the null hypothesis  $H_{02}$  that: There is no significant influence of trade credit finance structure on the growth of manufacturing SMEs in Rwanda.

The findings concur with Rodriguez (2006) who argues that through trade credit, suppliers can reduce the transaction costs associated with the insolvency of each individual commercial exchange. Trade credit helps SMEs to establish a stable commercial relationship in long run. SMEs receive more capital from market, gaining more investment and growth opportunities through the use of trade credit finance structure. Similarly, Boissay and Gropp, (2007) and Cunat (2007) demonstrate how trade credit provides a safety valve for firms facing distinctive liquidity shocks.

## 7. Conclusion

The study sought to investigate the influence of equity and debt finance structure on the growth of SMEs in Rwanda guided by two objectives; to determine the influence of equity finance structure on the growth of manufacturing SMEs in Rwanda and to investigate the influence of trade credit finance structure on the growth of manufacturing SMEs in Rwanda. A mixed research design approach was used for collecting and analyzing data using a target population of 868 SMEs registered with Rwanda Development Board as of November 2017. Stratified random sampling technique was used to draw a sample size of 273 SMEs. Close-ended questionnaires were employed in data collection and data was analyzed using Statistical Package for Social Science (SPSS) to generate descriptive statistics including percentages, frequency tables and mean scores. Correlation and regression analysis were used to explore relationship between equity finance, trade credit and growth of Manufacturing SMEs in Rwanda. Analysis of variance (ANOVA) was utilized to test the significance of the model. The study findings reveal that Trade credit and equity finance structure were both found to have a significant effect on the growth of manufacturing SMEs in Rwanda. The study recommends that the management of SMEs should be trained on the use of accounts receivable and accounts payable to fully take advantage of trade credit finance structure. This will ensure the SMEs continue producing or manufacturing during time of low liquidity.

## 8. References

- [1] Agostino, M., Sabrina, R.& Trivieri, F. (2015) Lasting lending relationships and technical efficiency. evidence on European SMEs\* Department of Economics, Statistics and Finance University of Calabria, Italy.
- [2] Amy, F. and Lien, B. (2013) The Use of Trade Credit by Businesses. Bulletin, Reserve Bank of Australia
- [3] Barclay, M. J., & Smith, C. W. (2005). The capital structure puzzle: The evidence revisited.
- [4] Bell, K. & Vos, E. (2009) SME Capital Structure: The Dominance of Demand Factors 22nd Australasian Finance and Banking Conference 2009. University of Waikato – Department of Economics and Finance.
- [5] Boissay, F and Gropp, R (2007) , Trade credit defaults and liquidity provision by firms. European Central Bank working paper series 753.
- [6] Carbo, V.S., Fernandez, R.F. and Udell, G.F (2012) Trade credit, the financial crisis and firm access to finance. Accessed online at: [www.ugr.es/~scarbo/TradeCredit2012.pdf](http://www.ugr.es/~scarbo/TradeCredit2012.pdf) on 10th/10/2018.

- [7] Carvalho C. J., & Schiozer, R.F. (2014) Determinants of Supply and Demand for Trade Credit by Micro, Small and Medium-Sized Enterprises. Federal University of Uberlândia.
- [8] Covas, Francisco, and Wouter J. Den Haan. 2012. "The Role of Debt and Equity Finance over the Business Cycle." *Economic Journal* 122 (December): 1,2.
- [9] Cuñat, V. (2007), "Trade credit: Suppliers as debt collectors and insurance providers," *Review of Financial Studies* 20(2) pp. 491-527.
- [10] Dermirguc-Kunt and Maksimovic (2001) argue that trade credit is the important alternative to bank loans as a source of external funding in the SME sector in developed and developing economy alike.
- [11] Elahia, M. & Dehdashti, M. (2011) Classification of Researches and Evolving a Consolidating Typology of Management Annual Conference on Innovations in Business & Management London, UK.
- [12] Fosnacht, K (2012, March) Undergraduates coping with financial stress; A latent class analysis . Paper presented at the annual meeting of the American College Personnel Association, Las Vegas, NV.
- [13] Garcia-Appendini, E., Montoriol-Garriga, J., 2013, Firms as liquidity providers: Evidence from the 2007-2008 financial crisis, *Journal of Financial Economics*, 109, 272-291.
- [14] Guillaume, A., Stagliano, R. and Van der Zwan, P. (2015) Bank Debt and Trade Credit for SMEs: International Evidence. Erasmus University Rotterdam (EUR) - Erasmus School of Economics (ESE).
- [15] Mateut, S., Bougheas, S. & Mizen, P. (2006) Trade credit, bank lending and monetary policy transmission *European Economic Review* 50 PP 603–629.
- [16] Nanyondo, M. (2017) Access to debt finance and its determinants in Uganda: An empirical investigation of Small and Medium-sized Enterprises (SMEs) PhD Thesis Bournemouth University.
- [17] Ndikubwimana P. . (2016). The role of financial institutions in promoting innovation of SMEs in Rwanda; An empirical review:. *British journal of Economics, Management and Trade* 14(2): 2016, article n0. *BJEMT.26746 ISSN: 2278-098X* , 1-14.
- [18] Njagi. K. I., Maina, K. E., Kariuki, S. (2017) Equity financing and financial performance of small and medium enterprises in Embu own, Kenya *International Academic Journal of Economics and Finance* | 2 (3) pp. 74-91.
- [19] Rodríguez, O. M (2006) Trade credit in small and medium size firms: an application of the system estimator with panel data. *Journal of Small Business Economics* 27 (2-3) PP 103 – 126.
- [20] Stiglitz, J., and A. Weiss. (1981). Credit Rationing in Markets with Imperfect Information to action for psychology. . *American Psychologist*, 62(6), 575. *to Stability and Prosperity in South Eastern Europe*.
- [21] Wilner, Benjamin S., (2000), The Exploitation of Relationships in Financial Distress: The Case of Trade Credit, *Journal of Finance* 55 (February), 153–78.
- [22] Zikmund, G.W., Babin, B.J., Carr, C.J., & Griffin, M . (2010). *Business Research Methods* 8th ed. South-Western, Cengage Learning.