# The effect of short-term bank loan financing on financial performance of manufacturing Small and Medium Enterprises (SMEs) in Rwanda

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## *Abstract*

*Short-term loan financing is one of ways used to fasten financial performance and growth of firms mainly those operating in manufacturing domain. It is an important source of finance to small and medium enterprises (SMEs) all over the World where it has financed almost half of the businesses done by SMEs in United States of America (USA), many businesses are financed by short-term loan European countries, Africa and Asia. Despite its importance all over the world, short-term loan financing in terms of line of credit and overdraft facilities have not been given much attentions in different literatures all over the World and mainly in Rwandan context. Being a great source of finance to SMEs, there is no clear indication about the level at which it contributes to the financial performance and growth of SMEs. At policy level there are not much rules, laws, regulations and guidelines about short term loan financing in Rwanda. Based on a population of 382 manufacturing SMEs operating in Kigali, a sample of 196 SMEs was drawn and a survey study was conducted using self-administered questionnaires to collect primary data from SME holders. The research was guided by the pecking order theory, which set an order of preferences between sources of finance. Descriptive and inferential statistics were used to analyze collected data. Using a binary logistic model the findings revealed that there is significant and positive relationship between short term loan financing in terms of line of credit finance, overdraft financing facilities, contract finance, working experience and organization types financial performance of manufacturing SMEs in terms profit. In summary short term, loan financing is a powerful tool to finance manufacturing firms and it must inform policy makers in Rwanda to think about ways of empowering SMEs owners with financial literacy.*

**Key words**: Overdraft facilities, line of credit, return on sales, and return on investment

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## 1. Introduction

Small and Medium Enterprises (SMEs) are important engine in the development of each country; they play a vital role in economic growth, and job creation (L. Castillo & Guasch, 2012). SMEs have became an important pillar in the African economy and served in fighting the everlasting problem of unemployment. Dispite their importance SMEs operating environment is facing huge challenges related to finance. This paper aims to find out the importance of differents short term bank loan debt finance on financial performance of manufacturing SMEs. Overdraft financing and line of credit are the key important source of finance which were examined to see their support for the growth and advancement of SMEs prospectively. Short term bank loan debt finance has been viewed as an important source to business finance and it has contributed to the growth and impacted positively SMEs performance (Eniola & Entebang, 2015)

SME Rwanda have found themselves with the challenges of accessing finance due to bank credits structural, viability, and maintainable quality. The country's industrial sector is dominated by small size organisation where 98% are SME, with a big number of micro entreprises which are not able to meet the requirement of financial intitutions (Esho & Verhoef, 2018). On the supply side collateral guarantee is the main standards for loan approval. This process of loan application and collateral issues have abstracted SMEs to have access to needed finance. Small and Medium-sized financial establishments are not many, as far as the current state of affairs of financial establishments in relation to SMEs, and face numerous issues and challenges in its further advancement, hence are unable to content the SMEs. The not strong credit financing, and non - subjective or mortgage asset resources, considered by banks makes it more significantly challenging in raising financing provision. Likewise, the no third-party undertakings with enough credit rating assessment to offer guarantees, making it reliable for funds obtainable from banks (Eniola & Entebang, 2015)

The SMEs sector has been the focus of recent academic and policy debate. On the one hand, the SME sector has been the target of systemic and targeted intervention by governments and international aid organizations around the world. Supporting this view are findings from recent studies that emphasize the role played by SMEs in employment generation and recovery from recessions in developing countries. For instance, Ayyagari et al. (2014) find that SMEs in the formal sector account for 50 percent of employees in developing countries. They also find that SMEs create a greater share of jobs and highest sales growth and employment growth (Ayyagari et al., 2011). There is a strong positive association between the share of SME labor in the total manufacturing labor force of a country and GDP per capita growth (Ayyagari, Demirgüç-Kunt, & Maksimovic, 2019). It is important to understand the determinants of their access to credit because SMEs create the majority of jobs (Wit & de Kok, 2014).

All over the World, SMEs have contributed too much to the overall Gross Domestic Product (GDP) of countries. SMEs contributed 60% in china, 57% in Germany, 55% in Japan and 48 % in USA.

In the same way, they contributed to the creation of employment where SMEs account for between 55 per cent and 80 per cent of total employment in Western Europe, Japan and USA (Ngui & Thomas, 2013). In Kenya SMEs represent 90% of all entrprises, the GDP of 18% and employs 60% of the workforce (Muriithi, 2017). In Uganda SMEs employ more than 90 % of the private sector and contribute over 18% to total GDP ("Ministry of Trade, Industry and Cooperatives (Uganda)," 2018). While in Rwanda SMEs comprise 98% of the businesses and 60% of all private sector employment sectors, and contribute around 55% of the GDP. It has a potential to lower in Rwanda's trade imbalance and generate off farm employment(Marc, 2016).

Access to finance has been identified as the first constraint of SME growth (Esho & Verhoef, 2018), SMEs have been portrayed as not able to access to bank credit because of conditions which are difficult to fulfill for most SMEs have been viewed as too small, risky, or costly for traditional commercial banks (Njue & Mbogo, 2017). Lack of access to finance has a great impact on firm growth and that the smallest firms were the most affected by lack of finance. Small firms identify access to financing as a severe obstacle compared to the percentage of large firms. Access to a targeted lending program show that many SMEs are credit-constrained and that expansion of credit leads to higher growth in sales and profit(Banerjee & Duflo, 2014)

Despite the importance of short-term bank loan debt finance, its influence on financial performance has not attracted the attention of researchers in Rwanda. There is also lack of short-term debt financing research because it is difficult to identify the times when short-term financing needs are high. Moreover, in spite of the support from the government of Rwanda a majority of SMEs are still facing internal and external challenges for their growth(van Klyton & Rutabayiro-Ngoga, 2018). SMEs operating in manufacturing have shown slow growth compared to those operating in services. They remained stagnant in the past decade and accounted for 14% of GDP in 2010 and shown a slow growth compared to their fellow in neighboring countries(Kamarudeen & Söderbom, 2013)

It is acknowledged that lack of access to finance is the most critical constraints to the growth of SMEs(Kamunge et al., 2014). Access to finance has been ranked number one challenge, which SMEs are facing in their development in Rwanda. SMEs are still financially disadvantaged due to lack of collateral required by financial institutions(van Klyton & Rutabayiro-Ngoga, 2018). Though a number of studies have been conducted in Rwanda there is still a shortage of research in the domain of debt financing and financial performance of SMEs. This creates an opportunity for the current study to fill in the information gap.

## 2. Literature review

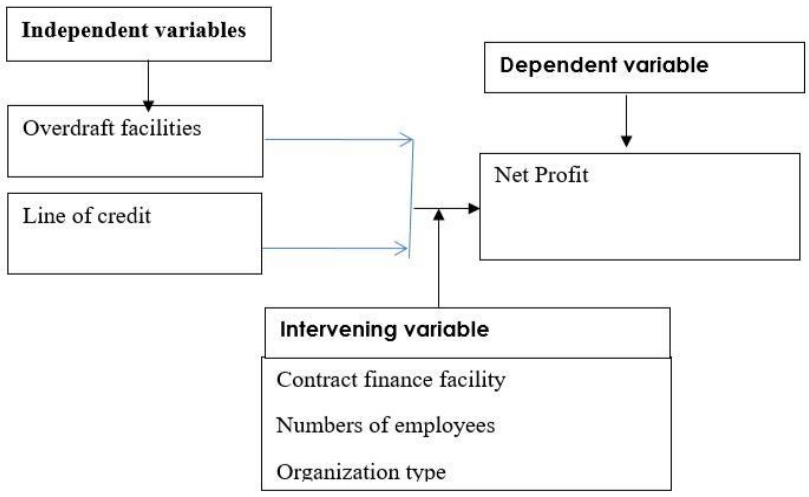
Pecking order theory had been proponed by(Donaldson, 2012) and it was suggesting that the order of financing sources takes precedence over their weight. The introduction of an extended version of the theory where asymmetric information available to managers and investors causes adverse

costs of selection(Myers, 1984). In 1984 the theory was developed in the way that it was suggested that internal financing must take precedence to other source of finance (Myers & Majluf , 1984). The preference for internal financing, followed by debt financing and equity issuance as a last resort, represents the "pecking order of financing" new projects, as firms recur to self-financing under asymmetric information conditions. In has been pointed out that firms have to identify the source of finance taking into account their life cycle, where young firm are willing to finance their operations into own capital and then capital market will come as the last option (Kira, 2013).

The concept of this theory lays in the principles of asymmetric information and it assumes that people do not have the same information, at a certain level lenders and managers have different information about the firm and access to finance. The theory posits that the firm will prefer internal financing and that, should external resources be necessary, it will select the appropriate financing methods based on the risk level involved. This being an issue many firms mainly SMEs prefer to use informal finance and then other debt finance. The buyer sees the average of the whole market while the seller has more intimate knowledge of a specific item.

Firms have different preference and can be informal debt to formal debt, short-term debt over long-term debt and debt over equity and this will have also to deal with the size of the firm. In some cases if the firms issue no new security but only use informal debt finance to support the investment opportunities, the information asymmetric can be resolved. The theory is very much close to the work taking into account that for SMEs find themselves caught in the trap of using certain types of finance and in a certain way they have to make a certain journey from on source to another. Due to the information, asymmetric business people prefer to go to short-term bank loan debt finance instead of long-term finance. This theory alone deals with all the two objective of this research and it shows the preference order of finance, from overdraft to line of credit.

**The conceptual framework**



Studying capital structurre on finacial performance of SMEs in Malaysia, it was found out that both long term debt finance and short term debt finance have a negative effect on financial performance of SMEs(Salim & Yadav, 2012). In the research on the effect of debt finance on firm's financial performance in pakistan, it was found out that there is a nonlinear relationsip between return on equity and debt ratio asset ratio (Tauseef et al., 2015) . Short-term bank loan financing mainly has played a key role in the development of SMEs, Access to finance to SMEs is a very determinant element on the survival of organizations. In the study on the impact of bank loan on profitability, using empirical data and method of generalized momenets in France, it was found out that debt does not have any impact on the profitability of SMEs(Kebewar, 2012). In the research on bank loan finance on financial perfromance of Sweden firms it was found out that trade credit, short term loan and long term loan affect negatively the performance of SMEs(Yazdanfar & Öhman, 2015). It was stipulated that the lower leverage level, the lower agency cost of external debt and the high the profitability. In USA there has been a decrease of debt maturity where SMEs are willing to take loan with short term period maturity. New firms tend to use more short term debt than old firms and it is most affected by both supply and demand side(Custodio et al., 2012)

Access to finance is a fundamental challenge at the heart of a country's financial and economic development. Development theory emphasizes the role of finance in achieving growth and income equality. However, one of the most important issues facing SME is their difficulty in accessing finance. Given market imperfections, the role of state policy is critical from promoting an enabling environment to more active market interventions(*World Bank Group 2019*). Many other researchers on African continent have also carried their researches on debt bank loan finance and have found significant result which have contributed to the body of knowledge. In the research on debt bank loan on financial performance of SMEs; the missing role of debt maturity structure in Egypt it found out that short term debt and long term debt have different results on financial performnce of SMEs. It was found that long term finance affect positively the financial performance of SMEs when short term debt finance affect negativelly the financial performance of SMEs ( Wahba, 2013). In the same way, in the research on the impact of debt structure on performance of Nigerian quoted firms using secondary data have found out that debt structure is negatively correlated with firm performance and that it contributed negatively to the firm performance(Nwude et al., 2016).

Debt financing and performance of small and medium size entreprises: Evidence from Kenya. The study used 4122 SMEs in Eldoret town. Stratified sampling technique was used to select a sample size of 50 SME firms. The study collected quantitative secondary data from SMEs' financial statements for three consecutive years (2011-2013). Multiple Regression analysis was used to test the study hypothesis. The findings revealed that Short-term debt ratio was negatively and significantly correlated to profit margin ratio, and return on asset and long-term debts had negative influence on performance and liquidity ratio, however, there was no evidence to suggest

relationship between long-term debts, ROA and profit margin ratio. The conclusion was that long term and short-term loans reduce financial performance of SMEs(Githaiga, 2015). This study wants to investigate the case of Rwanda and see if there is a relationship between short term finance and SMEs profitability.

A research on the effect of access to finance on financial performance of manufacturing firms in Kenya shown that there was a positive influence on the financial performance of manufacturing firms and a significant linear relationship between access to finance and financial performance of manufacturing firms(Wamiori et al., 2016). In the same way in a research on the impact of debt bank loan financing on financial on productivity of SMEs in Zimbabwe found out that debt finance has played a big role in financial performance of SMEs(Dube, 2013). In their studies to examine the role of credit financing on performance of SMEs in Lira Municipality in Uganda, it was found out that providing credit to SMEs give them a room of a high-level productivity

The study on the role of access to finance for small and medium enterprises (SMEs) performance within a period from 2012-2015 using data from 2128 SMEs: stipulates that access finance improves profitability, improve firm efficiency, prevent liquidity problems, and improve firm solvency and increase of assets quality (Harelimana, 2016). Short-term debt financing had played a big role in funding many business projects in Rwanda and it was noticed loan bank are among the main source of finance to SMEs.

The study on the effect of debt financing on firm performance a comparative case study of I&M and Bank of Kigali: found out that there is positive relationship between debt level and profitability for both I&M Bank and Bank of Kigali since debt tends to be less expensive and increasing it with a relatively low interest rate which leads to the increase in profit levels and hence performance (Harelimana, 2017). In the same way Credit Terms, Credit Accessibility and Performance of Agricultural Cooperatives in Rwanda using a random sample of 196 active agricultural cooperatives in different district in Southern Province, a correlation and regression model was used to test whether the performance of agriculture cooperative is affected by credit term and it was found out that there is positive and significant relationship between credit terms, credit accessibility and the performance of agricultural cooperatives. It was revealed that debt availability to SMEs is the catalyst of performance of agricultural cooperatives(Byaruhanga, 2012)

The study done on Small New Firms and the Return to Alternative Sources of Finance analysis the returns to alternative sources of finance, using data from 650 single plant independently owned firms in the north-east of England from 1970-1980: found out that various forms of finance used differ in terms of the return on capital employed they are associated with. Sources of bank finance for small new firms are associated with higher returns than other available sources of finance. It was found out that sources of bank finance for small new firms are associated with higher returns than other sources of finance. One interpretation of this result is that the various sources of finance

are equally costly but not used with equal efficiency. If this interpretation is correct, then it implies that those small new firms depending on sources of finance other than bank finance will not perform as well as if bank finance had been used. This interpretation suggests that small new firms are more efficient in their use of funds when they are answerable to, and are monitored by, private sector banks (Keasey & McGuinness, 1990).

The study on the effect of bank loan to SMEs on manufacturing output in Nigeria for the period spanning 1992 to 2010, and employed an error correction modeling technique: observed that banks loan to the SME sector had insignificant impact on manufacturing output both in the long and short run. It was observed that the effect of bank loan to the SME sector on manufacturing output was insignificant both in the long and short run. This simply implied that the purpose and objective of this loan to stimulate output has not been successful. Based on the findings, the study recommended the need for greater deliberation and conscious effort by the government in ensuring that loans are given to ultimate users. There is also the need for moderation of collaterals and interest rate attached to banks loan to SMEs, to make it more attractive to stakeholders in the SMEs sector(Ifeakachukwu & Oseni, 2013).

In many countries, it has been discovered that bank overdraft is among external source of finance to SMES and it was pledged to contribute too much to the financial performance of SMES. They are looking at sectors of industry, SMEs in industry and construction consider bank overdraft more often relevant than SMEs in trade and services(Kwaak et al., 2014). Overdraft facility offered to firms mainly manufacturing one facilitate investment in research development which results in growth and productivity (L. L. Castillo & Guasch, 2012).

In the research on the effect of bank financing on financial performance of SMEs in Nairobi County from (2009-2013). It was found that SMEs bank financing in Nairobi County had a positive effect on the performance of the SMEs in Nairobi County since access to bank financing is an important ingredient to the developmental and eventual growth and performance. The overdraft agreements and trade credits were also found to affect business operations. This was because the short term debt finance adapted easily to the firm's financial need, they required no collateral in order to obtain the funds and they were repaid over a short period thus no or minimal interest rate was charged. (Salim & Yadav, 2012).

It was again found that The bank' loans and overdrafts are the most widespread debt financing methods for SMEs, but that alternative sources like leasing and factoring have also a high relevance. Small and medium size enterprises (SME) are more financially constrained therefore they use less formal finance than larger firms. Reasons not only includes lack of collateral, credit history, credit rating, tax policies, high growth vulnerability, other formal requirement of lending institutes but also financial institutions. Performance of firms is of vital importance for investors, stakeholders and economy at large. For investors the return on their investments is highly valuable,

and a well performing business can bring high and long-term returns for their investors. Furthermore, financial profitability of a firm will boost the income of its employees, bring better quality products for its customers, and have better environment friendly production units (Muchiri & Shukla, 2017).

It was noticed that SMEs, which used bank finance, had developed much better that others, which used other forms of finance, in spite of the fact that bank financing is more expensive in comparison to other sources of finance; it generates a higher rate of return for SMEs. It had been found out that bank finance is not only a byproduct of the development process but an engine propelling improving performance of small and medium enterprises (SMEs), (Mohd Shariff et al., 2010).

According to ( Giang , Trung , Yoshida , & Que, 2019) in the Causal Effect of Access to Finance on Productivity of Small and Medium Enterprises in Vietnam found out that overdraft facility have a positive and significant impact on productivity of SMEs and improved between 12.3% and 15.7% of the value.

Quantitative measures of firm performance include profitability measures such as gross margin, net margin for example return on sales, return on equity, economic value added, return on equity less cost of equity and return on capital employed. Other measures of performance include cash flow measures such as free cash flow over sales and growth measures for example historical revenue growth. Ideally, forward-looking measures such as expected profitability, cash flow and growth should be used to measure a firm's performance(Kiaritha, 2015). Profitability refers to the ability of a company to earn income. Net income is the single most significant measure of profitability. These ratios include: gross profit margin which is equal to gross profit/net sales. Net operating income which is equal to operating income/net sales. Return on total assets (ROA) which is equal to net income/average total assets, return on equity (ROE) which is equal to net income/shareholders' equity, return on investment (ROI) which is equal to net income/average total assets. When dealing with the financial performance of SMEs different measures must be used differently to those which can be used while assessing large firms, as pointed out by Van Horne & Wachowicz, (2010) SMEs due to their related problem like few resource, customers and not enough means play on the ground with different tactic to protect themselves against failure at the same time willing to attract a big number of customers. They must ensure that customer satisfaction remains high and that they can be flexible enough to respond rapidly to changes in the market(Horne & Wachowicz, 2010).

Return on sales (ROS) is computed by dividing profits by total operating revenue and thus it expresses profits as a percentage of total operating revenue or sales. Net profit on sales is determined by the ratio between net profit and net sales, and measures the difference between what the business takes in and what it spends in the process of doing business (Cohen, 1989). This measure will help the research predict the financial perfomance of SMEs in the reseach.

Profit can also be used to measure the performance of firms. Meaning that profit is used to measure the financial performance of the firms the same as promise for the company to remain a going concern in the business.

## 3. Methodology

The research design is a descriptive survey which uses both qualitative and quantitative methods for triangulation. The target population is all manufacturing SMEs operating in Kigali City meaning that all SMEs in the three districts of Gasabo, Kicukiro and Nyarugenge which equals to 382. These firms are classified according to their areas of operation. The selection of Kigali City was based on the evidence that it covers more than half of the total number of SMEs in Rwanda. Manufacturing SMEs were also selected because the sector has the biggest number of SMEs. The main repondents are SMEs owners and other people in the leadership position of the SMEs. The period of study was from 2012 to 2017 (NISR, 2018). The study used Slovin's formula of sample size determination, and stratified random sampling technique and simple random sampling to select a sample of 196 SMEs required by the research.

Data analysis was done by use of Pearson correlation coefficient and to determine the relationship between short-term debt finance and financial performance.

Linear multiple regressions were used to establish and explain the relationship between business domain, overdraft finance, line of credit and profitability (financial performance). The relationship between the study variables and SMEs financial performance was developed into binary logistic model. The model was formulated as:

$$= \frac{1+ -( 0+ 1\ 1+ 2\ 2+ 3\ 3+ 5\ 4+ 5\ 5)}{0+ 1\ 1+ 2\ 2+ 3\ 3+ 5\ 4+ 5\ 5}$$

**Where** P is the probability that the dependent variable is equivalent to 1, meaning high growth. Regression coefficients , = 1,2, … . , ,.Y = SMEs Financial performance (profit) was a binary variable; β0= Intercept of the model, a constant. It is the value of Y when β1= β2= β3= β4= β5= 0, β1, β2, β3, β4and β5 are the slopes of the model $x_1$ overdraft , $x_2$ line of credit $x_3$ contract finance, $x_4$ number of employees, $x_5$ type of organization, e: error term.

## 4. Findings and discussions

Discussion of the findings was done in three levels, first demographic analysis to give the general information about business activities, descriptive to show the mean and standard deviation and the estimation of the model to show the relationship between dependents and independent variables.

### 4.1 Demographic Statistics

**Table 1: Position of respondents**

| Position | Frequency | % |
|---|---|---|
| Business owner | 130 | 66.3 |
| Manager | 62 | 31.6 |
| Chief accountant | 3 | 1.5 |
| Sales manager | 1 | .5 |
| Total | 196 | 100.0 |

***Source: Research primary data (2019)***

Frequencies have been generated to give explanation about the respondents and it was found out that 66.3% of the respondents were business owners, 31.6% managers, 1.5% chief accountants and 0.5% of the respondents were sales managers. This gives a positive result because more than 50% questionnaire was from the owners of the business and once these people answer the questionnaire they are likely willing to give the total information of the business because they do not fear to disclose information.

**Table 2: Education level of respondents**

| Level | | Total |
|---|---|---|
| Education | Informal (home based) education | 1.5% |
| | Primary education | 11.7% |
| | Secondary education | 44.9% |
| | Undergraduate education | 37.2% |
| | post graduate education | 4.6% |
| Total | | 100.0% |

***Source: Research primary data (2019)***

From the table above, a big proportion of interviewed persons had secondary level education (advanced level). 37.2% had university level at bachelor level.

**Table 3: Experience and number of employees**

| Experience | | Total |
|---|---|---|
| | 1-5 years ago | 63.3% |
| | 6-10 years ago | 22.4% |
| | 11-15 years ago | 5.1% |
| | 16-20 years ago | 6.6% |
| | 21 years and beyond | 2.6% |
| Total | | 100.0% |

***Source: Research primary data (2019)***

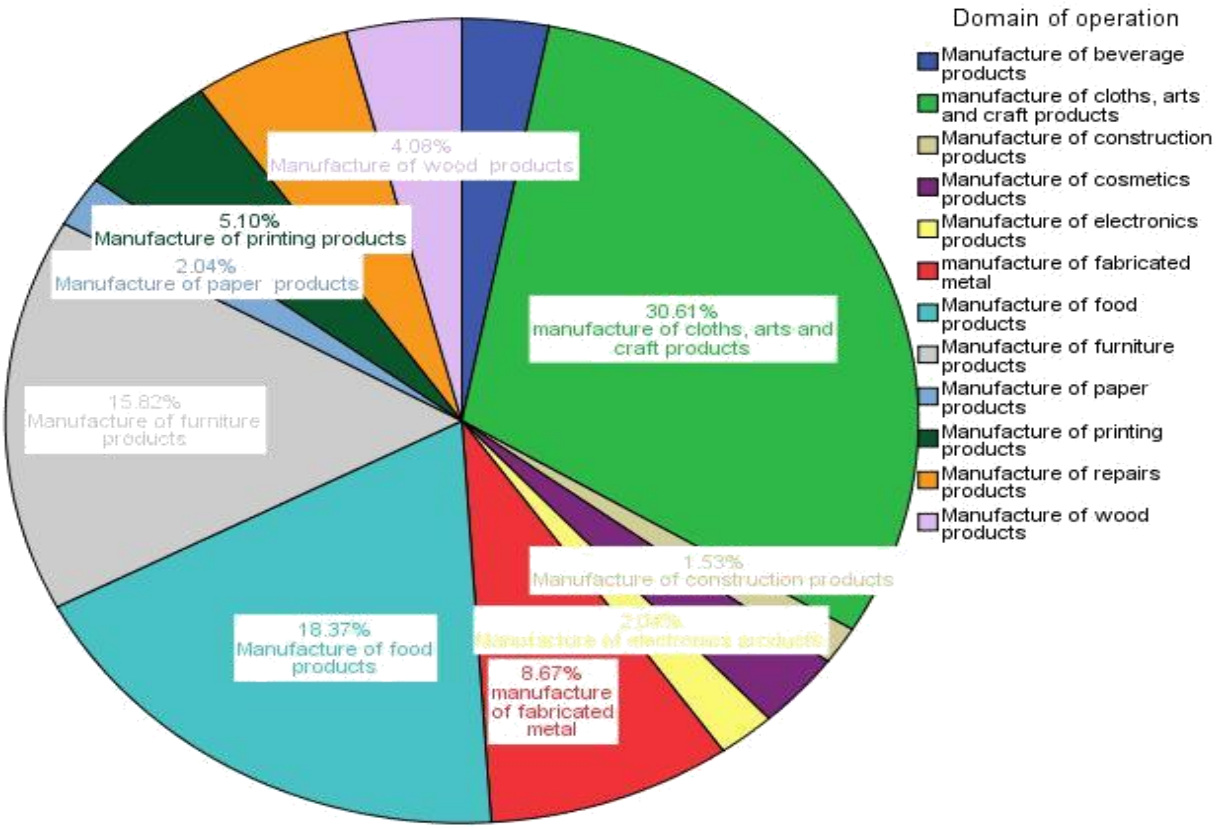
From the table above, 63.3% of the total respondents had a work experience of between 1 and 5 years. 2.6% had 21 years and beyond of working experience. This shows that SMEs employs more newly recruited staff.

**Table 4: Organization type and number of employees.**

| Organizational types | | Total |
|---|---|---|
| | Other limited companies | 1.5% |
| | Cooperative | 1.0% |
| | Sole proprietorship | 90.8% |
| | Partnership | 6.6% |
| Total | | 100.0% |

***Source: Research primary data (2019)***

From the table above, most of SMEs visited, were with type of sole proprietorship, 6% were partnerships (Joint ventures) and 1% were cooperatives.




***Graph 1: Sub sector of the surveyed manufacturing SMEs***

Manufacturing domain where classified in different domains and 3.1% where manufacturing of beverages products and manufacture of cosmetics products, 30.6% were from manufacturing of cloths, arts and crafts products, 1.5% manufacturing of construction products, 2% manufacture of electronics and paper products, 8.7% of the respondents were from manufacture of fabricated metals, 18.4% were manufacture of food products, 15.8% of manufacture of furniture products, 5.1% of manufacture of printing products, 5.6% of manufacturing of repairs and 4.1% from manufacture of wood products. From the findings, it was clear that a big number of respondents were from manufacturing of cloths, arts, and crafts products, manufacturing of food products, and manufacturing of furniture products

**Table 5: Level of use of the short term bank loan debt finance**

| | Frequency | % |
|---|---|---|
| Yes | 93 | 47.4 |
| No | 103 | 52.6 |
| Total | 196 | 100.0 |

***Source: Research primary data (2019)***

From the findings 47.4% of the respondents claimed that they use short term bank loan debt finance in their activities and 52.6% of the respondents said that they do not use short term bank loan debt finance in their activities. As the result show less than 50% are those which use short term bank loan debt finance and it can be due to many reason, one being that SMEs finance from bank is very competitive and requirement are very high for small firms to qualify. Other reasons being that new and small firms prefer to use other sources of finance which are easily available in their area of operation.

**Table 6: Descriptive Statistics**

| | N | Mean | Std. Deviation |
|---|---|---|---|
| Short term bank loan finance is important to your business | 196 | 2.94 | 1.984 |
| Short term bank loan finance is easy to access | 196 | 2.93 | 1.983 |
| Short term bank loan finance helps my business perform better | 196 | 2.87 | 1.983 |
| I receive overdraft finance from my financial institutions | 196 | 2.66 | 1.956 |
| Overdraft finance helps my business perform better | 196 | 2.52 | 1.925 |
| I receive a line of credit finance | 196 | 1.30 | 1.011 |
| The line of credit makes my business perform better | 196 | 1.30 | 1.015 |
| Valid N (listwise) | 196 | | |

***Source: Research primary data (2019)***

Findings reveals that short-term finance with the mean of 2.94 and the standard deviation of 1.984. It was also found that short-term finance is easy to find with the mean of 2.93 and 1.983 standard deviation. Short-term finance help business perform better with the mean of 2.87 and the standard deviation of 1.983. Those who receive overdraft facility have a mean of 2.66 and the standard deviation of 1.956 and overdraft facility of 1.30 mean and 1.015 standard deviation.

**Table 7: Overdraft facilities as a way of financing business activities**

| | Frequency | % |
|---|---|---|
| Strongly disagree | 113 | 57.7 |
| Neutral | 1 | .5 |
| Agree | 4 | 2.0 |
| Strongly agree | 78 | 39.8 |
| Total | 196 | 100.0 |

***Source: Research primary data (2019)***

Respondents were asked whether they receive overdraft finance from financial institutions and 57.7% respondents strongly disagreed that they do not receive any overdraft finance from bank, when 0.5% of the respondents manifested a neutral position to receiving overdraft finance from bank, this was justified by the fact that many employees while responding to the questions of the

research, when it came to confidential information mainly related to cash and loan, they were in the position of being neutral fearing that providing company's information could result in some negative consequences. 2% of the respondents agreed that they received overdraft finance from the financial institutions, and 39.8% respondents strongly agreed that they receive overdraft finance form financial institutions.

**Table 8: level of receiving line of credit from financial institutions**

| | **Frequency** | **%** |
|---|---|---|
| Strongly disagree | 178 | 90.8 |
| Disagree | 3 | 1.5 |
| Neutral | 1 | .5 |
| Agree | 2 | 1.0 |
| Strongly agree | 12 | 6.1 |
| Total | 196 | 100.0 |

***Source: Research primary data (2019)***

The findings reveal that 90.8% respondents strongly disagreed that they do not receive line of credit from financial institutions, 1.5% of the respondents disagreed that they do not receive line of credit from financial institutions, 0.5% of the respondents had a neutral position to receiving line of credit from financial institutions, 1% agreed that they receive line of credit from financial institutions, while 6.1% of the respondents strongly agreed that they receive line of credit from financial institutions.

### 4.2. Model estimation and interpretation of results

To estimate the relationship between the dependent variable and the independents variables, a binary logistic regression was designed to estimate the contribution of the model.

Bloc 0 Beginning bloc

**Table 9: Classification Table[a,b]**

| Observed | | | Predicted | | |
|---|---|---|---|---|---|
| | | | Profit made through short term bank finance | | Percentage Correct |
| | | | Yes | 2 | |
| Step 0 | Profit made through short term bank finance | Yes | 0 | 54 | .0 |
| | | 2 | 0 | 117 | 100.0 |
| | Overall Percentage | | | | 68.4 |

***Source: Research primary data (2019)***

The estimation of the model is equal to the null hypothesis ($H_0$) which the estimation before inserting any dependent variable. It supports the $H_0$ that financial performance in terms of profit 68.4% will not be to independent variables, which will be incorporated in the model. The developed model will be compared to the bloc 0 one and for it to be good; it has to increase the value of the existing model.

**Table 10: Variables not in the Equation**

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 0 | Variables | I receive overdraft finance from financial institutions | 35.011 | 1 | .000 |
| | | I receive line of credit finance from financial institutions | 10.747 | 1 | .001 |
| | Overall Statistics | | 42.256 | 2 | .000 |

***Source: Research primary data (2019)***

By checking the validity of independent variable vis-a-vis to the model, it is estimated that all variables with the P value less than 0.05 are statistically significant. From the table finding it is very clear that all values of both overdraft finance and line of credit are statistically significant to the model. The omnibus test coefficient model with the P value also less than 0.05 show how strong the model will be.

**Table 11: Model Summary**

| Step | -2 Log likelihood | Cox & Snell R Square | Nagelkerke R Square |
|---|---|---|---|
| 1 | 176.769[a] | .192 | .270 |
| 2 | 168.527[a] | .230 | .323 |

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

***Source: Research primary data (2019)***

The Negelkerke R square which similar to R square in the linear regression, which aims to show how dependent variable is affected by the independent variable. Show that 32.3% of the outcome have been predicted or affected by out predictor variables (Overdraft and line of credit). The research is consistent with previous researches ( Custodio, Ferreira, & Laureano, 2012), (Wamiori, Namusonge, & Sakwa, 2016), ( Dube, 2013), ( Harelimana, 2017), (Muneza, 2016), (Ende, 2017), ( IRENE, 2014), (McGuinness & Hogan, 2016), ( Ifeakachukwu & Olasunkanmi, 2013), found that short term finance has contributed to financial performance of SMEs.

**Table 12: Hosmer and Lemeshow Test**

| Step | Chi-square | df | Sig. |
|---|---|---|---|
| 1 | 5.092 | 2 | .078 |

***Source: Research primary data (2019)***

The Hosmer and Lemeshow test greater than 0.05 indicate the prediction of a good model, again the model has 0.78 which is the good indication of the model.

**Table 13: Classification Table[a]**

| Observed | | | Predicted | | |
|---|---|---|---|---|---|
| | | | Profit made through short term bank finance | | % Correct |
| | | | Yes | 2 | |
| Step 1 | Profit made through short term bank finance | Yes | 42 | 12 | 77.8 |
| | | 2 | 34 | 83 | 70.9 |
| | Overall Percentage | | | | 73.1 |

***Source: Research primary data (2019)***

The classification per table show us how our model predicted actual outcome. In the model, it clear that 73.1% of the outcomes was predicted by the model. Which great than the null hypothesis, which is 68.2%, meaning that 5% of the variable in the model was due to overdraft facilities and line of credit. To test the goodness of fit, by adding another variable to the model, which is contract finance to test the fitness of it, the model summary, moved from 32.3% to 41.6% and the classification of the model compared to the null hypothesis also was increased from 73.1% to 74.9%, this really is a good indication of the input of contract finance facility to the model. Work experience being also an intervening variable contributed to the model in increasing the value of the classification table from 74.9% to 78.9%. The closer the value is equal to 100% the better the model is. By adding the types of organizations, the value of the classification table moved from 78.9% to 79.5% which is really making the model very good.

## 5. Conclusion

Frequencies have been generated to give explanation about the respondents, the researcher wanted to find out who responded to the questionnaire and it was found out that 66.3% of the respondents were business owners. This give a positive results because more than 50% questionnaire was from the owners of the business and once these people answer the questionnaire they are likely willing to give the total information of the business because they do not fear to disclose information. The education level of the respondent, more that 80% have a level of education which beyond secondary education. Among respondents, 52.6% were male and 47.4% were female, as manufacturing is more about risk taking. Males are more risk takers than females and it can be seen in the ways they want to venture in new businesses. From the findings above it is very clear that a big number of respondents 63.3% have less than ten years of working experience in their business.

From the findings, it was clear that a big number of respondents were from manufacturing of cloths, arts, and crafts products 30.6%, manufacturing of food products 18.4%, and manufacturing of furniture products 15.8%. From the findings 47.4% of the respondents claimed that they use short-term debt finance in their activities and 52.6% of the respondents said that they do not use short-term debt finance in their activities. As the result show less than 50% are those which use short term debt finance and it can be due to many reason, one being that SMEs finance from bank is very competitive and requirement are very high for small firms to qualify. Other reasons being that new and small firms prefer to use other sources of finance, which are easily available in their area of operation.

Only 41% of the respondents who confirmed that they receive overdraft finance form financial institutions and 7.1% confirmed that they receive line of credit from financial institutions. It was found out with the null hypothesis of 68.3% there was an increase of 5% from it and it moved up to 73.2%. By adding other intervening variable, the model was good and classification values

moved up to 79.5%. Which is a good sign about how independent variable are contributing to the model. In general short term finance facilities have contributed to financial performance of manufacturing SMEs in Rwanda.

## 6. Recommendations

a. The study draws the following recommendations; government of Rwanda through the National Bank of Rwanda (BNR), the Ministry of Trade and Industry (MINICOM) and the Private Sector Federation (PSF) should set measures to strengthen financial literacy among SMEs.

b. Financial institutions should put in place loan requirements, which are affordable to many people mainly start-ups and young firms

## 7. Limitations of the study

This study is limited by the fact that it took a one-dimensional measure firm financial performance hence, when dealing with financial performance the study only referred to profit and return on sales using primary data, there was also a need of using secondary in the research.

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