# Financing options and productivity of micro- and small-sized firms in Cross River State, Nigeria

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## Abstract

This study examined the impact of financing options (internal, external, and debt-equity financing) on firm productivity using the Ordinary Least Squares (OLS) econometric approach with robust standard errors. Data was obtained through a face-to-face survey of 134 Micro and Small Enterprises (MSEs) in sectors such as commerce, manufacturing, services, agriculture, education, and health conducted in Calabar, Cross River State. The result showed that the correlation between the variables is neither perfect nor zero, and may be used for regression analysis. Among the financing choices examined, internal financing had a significant negative effect on firm productivity in Cross River State, Nigeria. Specifically, an increase in internal finance of the firm by one per cent results in a 25 per cent decrease in firm's productivity. Secondly, the study discovered that debt-equity financing had a significantly positive effect on productivity of firms in Cross River State, Nigeria. Specifically, debt-equity financing improved firm productivity by 12 per cent. Thus, debt-equity financing as against internal or external financing produced more robust result in its impact on firm productivity. Based on these findings, the study recommended that managers of firms should make financing decisions in such a manner as to spread the risk and minimize cost of funds such that their productivity and profitability is not adversely affected.

**Keywords:** Financing choices, Productivity. Small and Medium-Scale Enterprises

JEL Classification: D24, G23, G21

## Introduction

Financing is necessary for the productivity and growth of firms and by extension the growth of national economies. The differences in economic progress between the rich and poor economies can be attributed to the conditions associated with the financing of productive activities of firms which have implications on their performance. Globally, and, in developing and emerging economies in particular, firms, especially micro, small, and medium (MSMEs) enterprises are acknowledged not only as avenues for creating jobs but as important drivers of economic diversification and growth, youth and female empowerment and a channel for the supply of goods and services to the extreme poor. Gerlach-Kristen, O'Connell, and O'Toole (2015) believed that SMEs contributed about 50 percent of the world's gross domestic product (GDP) and sixty percent of global employment, while Deijl, Kok, and Essen (2013) found that in emerging economies, MSMEs created two-thirds of jobs and 80 percent of those in low-income countries. The world over, micro, Small, and Medium Enterprises assume very significant roles in socio-economic transformation, which includes the industrialization of many countries. MSMEs being ingrained presents an important platform that boosts technological, entrepreneurial, and technical capacities amongst vital segments of the populace. Some opportunities are also offered by MSMEs which drive the creation of wealth as well as re-distribution of income within the society. It is also through MSMEs that economies move from agriculture-based economies to modern or advanced ones, giving opportunities for a value chain linkage that brings about sustainable livelihoods for the bottom-of-the-pyramid citizenry. Most advancements in new products and improved or new processes are by-products of MSMEs providing most of the employment opportunities and overall performance of any economy (NBS, 2017)

It is acknowledged that MSMEs form over 95 percent of businesses in Africa, contributed 57 percent to GDP and created over 61 percent of jobs in South Africa alone. (World Bank, 2013; Abor & Quartey, 2010). In Nigeria, micro, small, and medium enterprises (MSMEs) constitute about 90 percent of all enterprises in the agricultural and industrial sub-sectors and together with SMEs in other sectors contribute about 50 percent of the nation's GDP

(Evbuomwan, Ikpi, Okoruwai & Akinyosoye, 2013). Micro firms constitute about 99.8 percent of the 41,543,028 MSMEs in Nigeria as of 2017 of which 0.2 percent are small and medium-sized firms (National Bureau of Statistics 2017).

One aspect of the business climate that has been identified as the main problem for micro, small, and medium-sized firms is financing. Given the crucial role that MSMEs play in national productivity and growth, this topic is the subject of constant discussion among government officials and policymakers. According to the World Bank Enterprise Survey (2014), the major challenges faced by SMEs were infrastructure and financing, both of which are related to innovation. In comparison to 18.1 percent in East Asia and the Pacific, 15.3 percent in the Caribbean and Latin America, and 14.2 percent in Central Asia and Europe, Africa had the largest percentage of SMEs that face this difficulty, at 21.4%. To address the financing challenges faced by MSMEs, the government implemented a number of initiatives, including the Central Bank of Nigeria credit guideline, which requires deposit money banks to lend to MSMEs at a rate of 20% (CBN, 1995), the Small and Medium Industries Equity Investment Scheme (SMIEIS) in 1999, the Bank of Industry in 2000, the Small and Medium Enterprises Development Agency (SMEDA) in 2003, and the Entrepreneurship Development Centres (EDC) in 2014.

This study, therefore, sought to investigate the impact of financing options on the productivity of firms in Cross River State, Nigeria. It examined the impact of internal, external, and the ratio of external to internal financing choices on the productivity of micro and small firms in Cross River State, Nigeria. The remaining part of the study is divided into five parts with section two as the theoretical and empirical review, section three as the methodology, and four and five as results and discussions, and conclusion, respectively.

## Theoretical and empirical review

### Theories of financing and firm performance

The relationship between finance and economic growth has for many decades, been the focus of continuous debate among economists and analysts of public policy (Becks et al, 2012, Favarra, 2003; Levine, 2005). Many analysts have proposed that one way for finance to influence economic development is via corporate productivity or performance (Gatti & Love, 2008; Chen, 2010). This necessitates research into the mechanism by which finance increases company performance or productivity since finance is seen as a critical link between business operations and general economic development (Chen, 2010; Becks et al, 2012).

The “pecking order” theory of capital structure developed by Myers and Majluf (1984) originates from corporate finance and is a leading theory for research on the finance of firms and is found applicable to small and micro firms. According to this theory, the financing of firms follows a pecking order in which firms initially use internal funds, then debt, and, if a project requires more funding, equity. Therefore, firms that are very profitable and generate sufficient cash flows will use less debt. Ohanga (2005) asserts that, from the borrower’s perspective, if faced with a cost of lending that is above the true risk-adjusted cost, the borrower will have incentives to seek out alternative sources of funding. Bank lending theory suggests that, where information asymmetry and moral hazard are prevalent, firms are likely to finance their operations firstly from retained earnings and then from bank debt rather than issuing equity.

The theory further suggests that the mix of debt and equity should be the cumulative result of hierarchical financing decisions over time. SMEs do not issue equity, but this theory applies because if their retained earnings are not enough to fund them then debt is supposed to be the next option. Myers (1984) extends this theory and states that firms will hierarchically

meet investment and financing requirements, preferring internal funds first, external debt next, and external equity as a last resort.

**Empirical review**

Various authors have used a range of methods and variables in tracing the effect of financing options on the performance of firms. In one such study in Africa, Regasa, Fielding, and Roberts (2017) investigated the link between financing and company development in Ethiopia. The research used a fractional logit model to evaluate access to financing, which was defined as a percentage or all firm's working capital from internal sources, as well as sales and employment growth. The research found a negative and substantial association between external financing and business growth, with companies that used external financing growing slower than those that used internal capital. However, the interaction impact of financing decisions on company performance was not examined.

Allen, Chakrabarti, De, Qian, and Qian (2012) studied the funding of 854 listed small and medium-sized private companies in India from 1995 to 2004. The research also performed a survey of 212 companies in the software, engineering, packaging, and chemical sectors to supplement the findings from secondary sources. Large manufacturing companies depend on equity financing the least, whereas tiny, non-manufacturing companies rely on equity financing the most. On the other hand, Indian businesses, especially major businesses, depend heavily on debt funding (bank loans and bonds). When stock and loan funding were merged, it found that listed Indian companies had a comparable reliance on external market and bank financing. Alternative forms of finance, such as trade credits and internal financing, were deemed to be the most significant routes for SME funding in India, according to the poll.

Mwangi (2014) used secondary panel data from 2006 to 2012 to explore the impact of funding choices on non-financial enterprises' performance with a focus on Nairobi stock market listed firms. The approach used was stepwise feasible generalized least square regression. Debt-equity ratios, total current liabilities to total current assets ratios, and dividend payout ratios were used to evaluate financing choices, while returns on assets (ROA) and returns on equity (ROE) were used to evaluate corporate performance (ROE). The research found an inverse association between the measures of financial leverage and performance. Even though the relationship was substantial for asset returns, it was inconsequential for equity returns. This research relied on secondary data and was primarily concerned with the financial performance of companies listed on Kenya's stock market. Quoted companies are often bigger than unquoted companies, and thus are less likely to encounter the financial restraints that tiny unquoted companies have.

Mensah (2004) investigated the efficiency of financing programs for small and medium-scale companies in Ghana, with an emphasis on equity and loan financing. The goal of the research was to see whether such programs helped SMEs achieve their financing requirements and if they were sustainable in terms of improving business profitability, investment, or the supply of money for future projects. The study discovered that a lack of long-term loans, combined with high interest rates, had a negative impact on SMEs' development and profitability, and suggested that other financing options, such as seed money, leasing, venture capital, and investment funding, be developed as a way to improve SMEs' profitability and performance in Ghana.

Mathenge and Nikolaidou (2018) investigated the impact of business financing decisions on total factor productivity as a proxy for firm performance. The research analyzed firm-level data from twenty-six African nations from 2005 to 2013, with five financing options of bank loan, equity, internal funds, hybrid and other forms of finance, and total factor

productivity. Firms with a higher share of investment backed by bank money were shown to be more productive than those with alternative sources of funding. Small and medium-sized businesses had a greater variance in productivity by source of capital than big businesses. This research primarily looked at manufacturing companies, therefore it didn't look at how financing decisions differed by industry and how it affected business performance.

To study SMEs financing, Kuntchev, Ramalho, Rodrguez-Meza, and Yang (2012) utilized data from the Enterprise Survey produced by World Bank, including thirteen thousand, six hundred and eighty-five enterprises from thirty-eight counties within sub-Saharan African. The authors discovered a clear link between a company's size and its credit accessibility, with small-scale companies having a higher propensity to be credit 'restricted,' illustrating the challenges experienced by owners of small firms in obtaining commercial loans. They also discovered that this category of firms in Sub-Saharan Africa region received external funding to the tune of 27.8 percent informal financing, 6.3 percent equity, 17.4 percent semi-formal financing and 48.5 percent formal foreign loans,

Rupeika-Apoga (2014) reviewed alternative financing, which is a source of external financing such as business angels, government support financing schemes, venture capital, and seed funding, as it affects the performance of SMEs in Lithuania, Latvia, and Estonia in a similar study on financing of SMEs in the Baltic States. The research discovered that the availability of these new and creative forms of funding was highly dependent on the organization's stage of growth, and that the larger and more well-known the firm was, the more financing options it had. Funding derived from venture capital, business angels, seed grants and assistance programs from government, were determined to be more readily available and accessible than bank loans for young businesses. In terms of particular nation examples, Estonia came out on top, with more local venture capitalists, investments and angel investors than the other countries in the Baltic region, which could be described partly by the strides of firms like Skype and Micro Task. As a result, according to this report, these nations should adopt regulatory business reforms such as eliminating administrative barriers and expanding financing options, and lobbying for unhindered entry into foreign markets as a means to enhance SMEs' performance in the Baltic area.

Rajan and Zingales (1998) performed a study of 41 enterprises in 41 countries from 1980 to 1990 to see whether sectors that rely on external finance had significantly higher growth rates in countries with more developed financial markets. This research also used regression analysis, and the results demonstrated that the development financial framework has a significant impact on the pace of economic growth, in part by lowering the cost of external funding for financially reliant enterprises.

This study did not only investigate the effect of internal and external financing on firm performance but uses a third measure of financing option which is a hybrid measure that combines the ratio of external to internal financing options. The study by King and Levine (1993) used time series data while that by Adegboye and Iweriebor (2018), which used firm-level data, did not investigate the effect of hybrid measure of financing options on firm's performance but rather focused on the effect of access to finance on firm productivity. The empirical literature on the effects of the ratio external to internal financing based on the pecking order theory on a firm's performance is enriched by this study. Apart from addressing the issue of the direct effect of these financing options, finance literature in this area of study is extended by investigating the effect of the ratio of these financing options on a firm's productivity.

## Methodology

### Study area

The study collected data from micro (firms with less than 10 employees) and small firms in Calabar Municipality in Cross River State, Nigeria. The data was collected evenly from firms across the 20 political council wards in the Municipal Council. A multi-stage, multiple-sampling technique which entails a mix of random, stratified, and purposive sampling techniques was applied in the study. Calabar Municipal Local Government Area was randomly selected from Calabar which consists of two Local Government Areas. There are 10 council wards in the Calabar Municipal Local Government Area, which has its administrative center in the city of Calabar and is located in the state's Southern Senatorial District. The LGA's administrative center and the state capital are both located in the Calabar Municipal Local Government Area. The vast Kwa River and the Odukpani Local Government Area form its northern and northern-eastern borders, respectively. The Calabar River and the Calabar South Local Government Area define its southern banks. The LGA had 555, 732 residents in 2022 and a land area of 147.2 square kilometers. In the second stage, a total of fifteen micro and small firms were randomly selected from each of the ten council wards making a total of 150 firms, with 134 firms providing complete and usable information. Consent was obtained from the firm owner or senior management staff who also provided information about the firm. They were made to understand that participation was optional and could withdraw at any point during the interview. Participating firms were provided with phone contacts for further concerns and letters of introduction to authenticate the validity of the study. The firms were identified as those with legal status, had at least one employee, and had been operational for a minimum of one year. Firms that denied consent were excluded from the study. The survey was conducted between December 2021 and March 2022.

### Research design

The study is based on a survey research design and used a descriptive and quantitative research approach to analyze the features, incidence, distribution, and interrelationships between the dependent and independent variables of interest in Cross River State's Micro and Small Enterprises (MSEs). Data was collected by Research Assistants, coded, and entered using Excel spreadsheets. The survey was conducted face-to-face using a questionnaire. The questionnaire consisted of both closed and open-ended questions in four sections. Section “A" dealt with the background of both the firm and owner such as legal status, year of establishment, number of full-time staff, sex distribution of employees, sex and highest education of the firm owner, as well as the sector of operation. Financing options of the firm, primary sources of loan, sources of initial start-up capital, the value of assets and capital, and yearly sales revenue were elicited in section “B”. In section “C”, the questionnaire focused on sales revenue and cost items such as labour, raw materials, electricity, and security costs.

### Model specification and measures of dependent, independent and control variables

Following the works of Regasa et al (2017) and Mathenge and Nikolaidou (2018), with extensions, the model for the effect of financing options on firm productivity was estimated for three measures of firm financing options (internal, external, and the ratio of external-internal financing) thus:

For internal and external financing

$$PROD_i = (FINT, FENT, FAGE, FSIZE, ACORRP, POUT, CAPU, ASECU) \quad (1)$$

For ratio of external to internal financing

$$PROD_i = (DEQR, FAGE, FSIZE, ACORRP, POUT, CAPU, ASECU) \quad (2)$$

Equations (1) and (2) is transformed into an estimable form and error term included in equations (3) and (4) thus:

$$logPROD_i = \beta_o + \beta_1 FINT_i, + \beta_2 FENT_i + \beta_3 FAGE_i + \beta_4 FSIZE_i + \beta_5 logACORRP_i + \beta_6 POUT_i + \beta_7 CAPU, + \beta_8 logASECU_i + U_i \quad (3)$$

$$logPROD_i = \beta_o + \beta_1 DEQR_i + \beta_2 FAGE_i + \beta_3 FSIZE_i + \beta_4 logACORRP_i + \beta_5 POUT_i + \beta_6 CAPU_i, + \beta_7 logASECU_i + U_i \quad (4)$$

a priori in equation 3, $\beta_1, \beta_3, \beta_4$ and $\beta_7 > 0$, $\beta_2$, $\beta_5$, $\beta_6$, $\beta_8 < 0$, and in equation 4, $\beta_2$, $\beta_3$, $\beta_6 > 0$; $\beta_4$, $\beta_5$, $\beta_7 < 0$, $\beta_1 >$ or $< 0$

In deciding the financing choice variables, the study modifies the variables used by other researchers such as Regasa et al (2017) and Mathenge and Nikolaidou (2018) who used working capital or fixed capital (investment) only as measures of financing choices. The three measures of financing choices used in this study combine both working capital and fixed capital in each category thus: Internal financing ($FINT_I$) is that proportion of the firm's working capital and fixed capital financed from internal sources. It is based on the response to the question which asked for an estimate of the proportion of the establishment's working capital and fixed capital that was financed from internal funds/retained earnings and owners' contributions. External financing ($FENT_I$) is that proportion of the firm's working capital and fixed capital financed through external sources. It is based on the response to the question which asked for an estimate of the proportion of the establishment's working capital and fixed capital that was financed from borrowing from non-bank financial institutions, private commercial banks, state-owned banks, and government agencies, family and friends, and internal sources e.g. moneylenders. The $DEQR_I$ is the proportion of the firm's external financing to its internal financing sources. This financing option is used separately given that firms use a combination of internal and external financing in their investment and working capital decisions as enunciated by the pecking order theory.

Other variables, backed by theory and empirical investigation, found to affect firm productivity have been included as control variables and include the size of the firm (FSIZE) measured by the total number of initial employees in a firm. Age of the firm (FAGE) is the age of the firm i (in years), obtained by subtracting the reported year of establishment from the survey year. Existing research evidence in the literature suggests that young firms grow faster even though it may be more difficult for them to secure external funding Coad et al. (2014) and Haltiwanger et al. (2013). On the other hand, some researchers believe that older firms, which are more established and have survived several challenges, may be more productive than younger firms that are still bugged by development problems (Mathenge & Nikolaidou, 2018). Power outage ($POUT_I$) is the number of times in a typical month that the firm experienced a power outage. Thus, firms that experienced frequent electricity outages are more likely to experience a decline in both sales and employment growth than those who have a regular electricity supply (Okafor, 2017). Security ($SECU_I$) is the percentage of the total amount spent on securing enterprise premises. This is a cost to the firm that negatively impacts the productivity of the firm. Thus, all forms of insecurity including political instability, terrorism, and theft will trigger expending more sales revenue when compared to firms in relatively more secure environments. (Adewuyi & Emmanuel, 2019). Corruption ($CORRP_I$) is measured by informal gifts/payments expected or requested for electricity, water connection, and related government services. These informal gifts, especially for essential services such as electricity and water connection, reduce the funds available for investment in more productive ventures, with a resulting negative effect on the productivity of the firm. Capacity Utilization (CAPU) measures the output produced relative to the maximum amount that could be produced by the firm.

**Data analysis techniques**

The data analysis for this study was undertaken using STATA version 14.0. A multiple regression analysis predicated on the ordinary least squares (OLS) framework was the

econometric modeling technique used for data analysis. The study was based on the use of several pre-estimation and post-estimation econometric tests and methods which include summary/descriptive statistics. Pairwise correlation matrix, Variance Inflation Factor, for multicollinearity, Breusch Pagan/Cook-Weisberg test for heteroskedasticity, and Ramsey test for model specification. Descriptive statistics are used to show the characteristics of the study variables. The summary statistics considered in this study include the maximum and minimum values and the mean and standard deviation of the variables. However, the pairwise correlation matrix shows the degree and direction of association between the study variables. This is used to check the correlation between the variables and to determine whether such correlations are perfect or not. Variables with coefficients above 50 percent were dropped as they have the tendency to cause multicollinearity among study variables. Variance Inflation Factor (VIF) was used to measure the level of multicollinearity in the variables of the study. This is the ratio of overall model variance to the variance of a model with only that single independent variable. It is recommended that a VIF of greater than 10 indicates multicollinearity. The Breusch-Pagan test was used to check for heteroskedasticity in a linear regression model in this investigation. The error terms are assumed to be regularly distributed. The Breush-Pagan test generates a chi-square distributed statistic. The p-value is the outcome of the chi-squared test, and the null hypothesis is generally rejected when the p-value is less than 0.05. The null hypothesis states that variance is constant. The Ramsey test for the model i.e. a general specification test for the linear regression model was used to test if the model was correctly specified. It tests whether the core variables were excluded if the model has a suitable form and has no measurement error. The null hypothesis is that the model specification is correct and has no omitted variables. If the F-Statistics is significant then the null hypothesis is rejected, and we accept that there are omitted variables. If the p-value is low. it shows that the model is mis-specified.

## Results and discussions

### Results

The descriptive statistics revealed that one hundred and fifty questionnaires were administered, and 134 were recovered and used for analytical purposes. A breakdown shows that firms engaged in trading were the highest (30.6%), followed by services (29.9%) and Agriculture (14.9%). The descriptive statistics for both the dependent and independent variables are shown in Table 2. The average log of the firm's productivity was 4.9 units, and the standard deviation is 0.4, suggesting little variability. Internal funding was utilized by 63 percent of businesses, while external financing was used by 29 percent. The business ratio of external to internal financing is 47 percent, ranges from 0 to 1, and accounted for 89 percent of the variation in (the use of) financing options.

**Table 1: Percentage distribution of firms by sector**

| Sector | Number of firms | % of total |
|---|---|---|
| Trade | 41 | 30.6 |
| Manufacturing | 18 | 13.4 |
| Services | 40 | 29.9 |
| Agriculture | 20 | 14.9 |
| Education | 3 | 2.2 |
| Health | 12 | 9.0 |
| Total | 134 | 100.0 |

Source: Authors' computation, 2022

Firms had an average of 16 employees, with a range of four, with the smallest employing one person and the biggest employing 20. The businesses were on average 12 years old, with the youngest being two years old and the oldest being 41 years old. Firms reported an

average of 13 power outages in a normal month, which is about two per day, with the potential of 33 power outages in a month. In terms of security, the enterprises spent an average of 4% of their yearly sales income on safeguarding their company premises, while roughly 3% of the firms reported giving money for informal payments to be connected to electric power, sanitation, and other services. Most businesses used up to 77 percent of the capacity of their resources, and nearly half of the businesses are controlled by women.

**Table 2: Descriptive statistics of study variables**

| Variable | No. Observations | Mean | Std deviation | Minimum | Maximum |
|---|---|---|---|---|---|
| Log PROD | 134 | 4.97 | 0.41 | 4.24 | 6.39 |
| FINT | 134 | 0.48 | 0.39 | 0 | 1.5 |
| FENT | 134 | 0.29 | 0.35 | 0 | 1 |
| DEQR | 134 | 0.46 | 0.89 | 0 | 1 |
| FAGE | 134 | 12.32 | 7.29 | 2 | 41 |
| FSIZE | 134 | 6.38 | 4.22 | 1 | 20 |
| CORRP | 129 | 0.75 | 0.43 | 0 | 1 |
| LogACCORP | 134 | 2.88 | 1.96 | 0 | 5.54 |
| LogASECU | 134 | 3.51 | 1.30 | 0 | -4.77 |
| POUT | 134 | 12.66 | 7.64 | 0 | 33 |
| CAPU | 134 | 0.76 | 0.17 | 0 | 1 |

Source: Authors' computation, 2022

The estimated correlation coefficients, as shown in Table 3, demonstrate that the correlation between the dependent variables is neither perfect nor zero It demonstrates that PROD (productivity) is performance indicator that is correlated with the independent variables.

**Table 3: Pairwise correlation matrix**

| | PROD | FINT | FENT | DEQR | FAGE | FSIZE | CORRP | ACORRP | ASECU | POUT | CAPU |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PROD | 1.00 | | | | | | | | | | |
| FINT | -0.12 | 1.00 | | | | | | | | | |
| FENT | 0.02 | -0.43 | 1.00 | | | | | | | | |
| DEQR | 0.02 | -0.13 | 0.47 | 1.00 | | | | | | | |
| FAGE | 0.14 | -0.14 | -0.02 | -0.17 | 1.00 | | | | | | |
| FSIZE | 0.01 | -0.36 | 0.12 | -0.07 | 0.39 | 1.00 | | | | | |
| ACORRP | 0.12 | -0.29 | 0.01 | -0.15 | 0.15 | 0.44 | 0.25 | 1.00 | | | |
| ASECU | 0.56 | -0.32 | 0.25 | 0.24 | 0.20 | 0.30 | -0.01 | 0.14 | 1.00 | | |
| POUT | -0.11 | 0.01 | 0.37 | 0.27 | -0.01 | 0.11 | -0.15 | -0.05 | 0.25 | 1,00 | |
| CAPU | 0.13 | 0.14 | -0.05 | -0.18 | 0.18 | 0.01 | 0.44 | 0.17 | -0.09 | -0.07 | 1.00 |

Source: Authors' computation using survey data, 2022

FINT and POUT have a negative correlation with PROD, but FENT, DEQR, FAGE, FSIZE, ACORRP, and ASECU and CAPU have a positive association with PROD. PROD has the poorest correlation with FENT. SECU, which has a positive link with both dependent variables, has the strongest relationship with both PROD. Also. the Variance Inflation Factors (VIF) were used to test for multicollinearity Table 4 shows that the mean VIF is 1.43, which is less than 10, indicating that the research data do not display the problem of multicollinearity, as indicated by Field (2009). As a result, all variables based on VIF indicators do not display multicollinearity and may be utilized for regression analysis with ease.

**Table 4: Test for multicollinearity**

| Variable | VIF | 1/VIF |
|---|---|---|
| FINT | 1.70 | 0.58 |
| FENT | 1.57 | 0.63 |
| DEQR | 1.54 | 0.65 |
| LogACCORP | 1.51 | 0.66 |
| FSIZE | 1.47 | 0.68 |
| POUT | 1.36 | 0.73 |
| CAPU | 1.31 | 0.76 |
| FAGE | 1.30 | 0.76 |
| logASECU | 1.18 | 0.84 |
| **Mean VIF** | **1.43** | |

Source: Authors' computation, 2022

The alternative hypothesis of no constant variance in the models is rejected, whereas the null hypothesis of constant variance in the models is supported.

The impact of different funding alternatives on the productivity of a company

Table 5 shows the findings of the impact of internal and external financing alternatives on productivity. Internal finance, business size, and power outage were all shown to be adversely connected to productivity in the regression results. Productivity was positively associated to external finance, company age, corruption, capacity use, and security. Internal finance option coefficients, corruption, capital utilization, and the constant term all had statistically significant effects on productivity. The results showed that increasing the firm's internal finance reduces productivity by 0.25 percent, while increasing corruption (informal gifts or payments for electricity connections), capacity utilization, and security increases productivity by 0.07 percent, 0.33 percent, and 0.66 percent, respectively. Company size had a negative and negligible influence on productivity, whereas external financing and firm age had a positive and non-significant effect.

**Table 5: Effect of internal and external financing on firm productivity**

| Variable | Co-efficient | Robust standard error | t-statistics | p-value |
|---|---|---|---|---|
| FINT | -0.25 | 0.10 | -2.33 | 0.021 |
| FENT | 0.04 | 0.12 | 0.35 | 0.724 |
| FAGE | 0.01 | 0.00 | 0.02 | 0.986 |
| FSIZE | -0.01 | 0.01 | -1.08 | 0.280 |
| LogACCORP | 0.07 | 0.01 | 3.71 | 0.000 |
| POUT | -0.00 | 0.00 | -0.79 | 0.433 |
| CAPU | 0.33 | 0.19 | 1.72 | 0,.088 |
| logASECU | 0.06 | 0.02 | 2.62 | 0.010 |
| Constant | 4.51 | 0.18 | 24.86 | 0.000 |
| Dependent variable: logPROD | | | | |
| Number of obs = 134 F(8, 125) = 6.99 Prob > F = 0.0000 R-squared = 0.2845 | | | | |

Source: Author's computation, 2022

The debt-to-equity ratio was shown to have a positive and substantial link with productivity in the second regression study (Table 6). The findings revealed that when companies raise their debt-to-equity ratio, or external funding to internal financing, their productivity tends to climb. Specifically, increasing the debt-to-equity ratio by one percent boosts business productivity by roughly 12%. Corruption, capacity utilization, and security were among the other characteristics that had a positive and substantial impact on firm production because of the study. The findings found that there is a substantial association between the number of informal payments made by enterprises for power and water

connections and the firm's productivity, with each additional naira increasing the firm's output by around 0.07 points. Additionally, when more naira is spent on safeguarding the firm's facilities, productivity rises by 0.07 points. In contrast, power outages had a negative impact on company productivity, with each extra power outage resulting in a 0.01 loss in firm productivity during the research period.

**Table 6: Effect of debt-equity financing on firm productivity**

| Variable | Co-efficient | Robust standard error | t-statistics | p-value |
|---|---|---|---|---|
| DEQR | 0.12 | 0.04 | 2.93 | 0.004 |
| FAGE | 0.02 | 0.00 | 0.45 | 0.654 |
| FSIZE | -0.01 | 0.00 | -0.09 | 0.931 |
| LogACCORP | 0.07 | 0.01 | 4.91 | 0.000 |
| POUT | -0.01 | 0.00 | -2.15 | 0.033 |
| CAPU | 0.32 | 0.17 | 1.84 | 0.069 |
| logASECU | 0.07 | 0.02 | 2.83 | 0.005 |
| Constant | 4.26 | 0.14 | 28.87 | 0.000 |
| Dependent variable: logPROD | | | | |
| Number of obs = 134 F(8, 125) = 9.70 Prob > F = 0.0000 R-squared = 0.2876 | | | | |

Source: Author's computation, 2022

## Discussion of findings

The study's primary goal was to look at the influence of various financing sources on business performance. In Cross River State, Nigeria, this goal was investigated using four hypotheses: the influence of internal and external financing options on business productivity, debt-equity ratio on firm productivity. Internal funding, corruption, and capacity utilization coefficients all had statistically significant effects on productivity. The results showed that increasing the firm's internal finance reduces productivity by 0.25 percent, while increasing corruption (informal gifts or payments for electricity connections), capacity utilization, and security increases productivity by 0.07 percent, 0.33 percent, and 0.66 percent, respectively.

Internal finance has a detrimental impact on business performance, which contradicts previous research that established a favorable association between internal financing and firm performance (Matherge & Nikolaidun, 2018; Regesa Fielding & Roberts, 2017; Onubedo & Yusuf, 2018; Liu, Li & Xu 2018). The fact that in developing nations like Nigeria, where high funding prices, severe collateral demands, and other financial institution conditions make it exceedingly difficult for MSMEs to receive capital from these external sources, supports this conclusion. Furthermore, foreign funding is allocated to politically well-connected enterprises with poor marginal returns on capital, and these firms, in most circumstances, lack the capacity to manage and spend these funds in initiatives that would provide positive results. Furthermore, since internal financing is insufficient to fund investments that will enable the business to compete with its rivals in both local and export markets, the firm's performance may suffer. The disparities in these research findings might be attributed to variances in the macroeconomic environments in which enterprises operate in Nigeria and other countries. For example, the macroeconomic climate in Nigeria is unfavorable to SMEs, as they struggle to get financing and suffer from low local patronage owing to consumers' insatiable hunger for imported products, resulting in a lack of local patronage.

The debt-equity financing had a good and substantial influence on business productivity and profit, according to the findings. This means that when the business replaces more of its funding from internal sources with external financing sources, it will perform better in terms of productivity and profitability. This supports the pecking order idea, according to which a company's finance moves from internal to external to equity financing. Internal financing may

be substituted for external financing in the second stage in this situation due to the detrimental impact of internal financing on company productivity. When a result, as organizations use a mix of internal and external finance, and as internal financing replaces external financing more often, the firm's productivity and profit tend to increase.

Monthly power outages had a negative and minor influence on company production, according to other findings. The conclusions of research by Emmanuel and Anga (2020), Okafor (2017), and Adewuyi and Emmanuel all point to a negative link between power outages and company performance (2019). Firms that endure frequent power outages are more inclined to produce below capacity or spend a lot of money on alternative energy, which will hurt their development. The indicator of corruption was shown to be positively connected to production. This was an unexpected result because corruption, which is the payment for electricity/water connections, diverts monies that should be invested back into the company for development and instead puts them in the hands of people who work in such public utilities, starving the firm of revenue. Bribe money is a drain on the company's revenue and has a negative impact on its productivity.

Firm size and capacity utilization were shown to be positively and substantially connected to firm profitability in the profit equation. This means that as the number of workers and capacity utilization of the companies increased, so did their profits. This demonstrates that there is some amount of efficiency, since it suggests that a greater number of individuals are gainfully employed, resulting in enhanced production and, as a result, higher profit margins for the companies.

**Conclusion and policy recommendations**

This empirical, policy-oriented study examined the impact of financing options (internal, external, and debt-equity financing) on firm productivity using the Ordinary Least Squares (OLS) econometric approach with robust standard errors. In a survey performed between December 2021 and March 2022, Micro and Small Enterprises (MSEs) in Calabar, Cross River State, provided the main survey data. Data were obtained from 134 MSEs in sectors such as commerce, manufacturing, services, agriculture, education, and health via a face-to-face survey utilizing a questionnaire.

First, empirical findings revealed that the internal financing alternative reduces firm productivity. Internal funding and business productivity have a statistically significant and unfavorable association, according to the research. Second, the research found that debt-equity financing had a considerable beneficial impact on firm productivity in Cross River State. Hence, debt-internal financing, as opposed to internal or external financing, has been demonstrated to have a more stable influence on firm productivity. The study concludes that internal financing has a significantly negative impact on firm productivity in Cross River State, Nigeria, and that using a hybrid financing option (a combination of debt and internal financing) has proven to be more beneficial to the firm in terms of increasing productivity than using only one financing option (internal or external).

Based on the results, the paper provides the following recommendations; first, that the government, via the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN), creates alternative financing channels for MSEs that are affordable and accessible. Second, firm managers should make financing choices in such a way that they disperse risk and reduce the cost of money so that the productivity of MSEs is not harmed. Third, Government entities that finance SMEs, such as the Bank of Industry, NIRSAL, and the Bank of Agriculture, should be well-funded and regularly to ensure that they fulfill their purpose.

## Limitations

This type of survey data, especially one in which sensitive questions are asked, is likely to suffer from both item and survey non-response. These data suffered from both in varying degrees. To deal with the issue of item non-response, a separate response of refusal to respond was included. This sought to differentiate item non-response from the fact that the respondent may not know. In the case of survey non-response, there were repeated contacts with the firm, and if they still declined then a substitute firm with similar characteristics was selected and studied.

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