The Financial Linkages as an Antecedent of Access to Debt Finance for Small and Medium Enterprises

Lwidiko Badi[1] and Esther Ishengoma[2]
[1]Department of Mathematics and Statistics, Faculty of Arts and Social Science, The Mwalimu Nyerere Memorial Academy, Tanzania.
[2] Department of Finance, Business School, University of Dar es Salaam, Tanzania.

Corresponding author email: lwidiko.badi@mnma.ac.tz

Abstract
The study examined the effectiveness of financial linkage on SMEs' access to debt finance. The study was motivated by the importance of SMEs in economic development and employment creation in the country; therefore, access to debt finance from formal financial institutions is vital for SMEs to play their roles effectively. Information asymmetry theory was used to guide the study. Data for the study were collected from the SMEs served by Private Agriculture Sector Support (PASS). The organization provided a list of 1000 SMEs and obtained a sample size of 278 SMEs using the Sample determination formula by Cochran (1963). Questionnaires were distributed to 278 SME managers, and 262 questionnaires were returned filled out. Data were coded into SPSS, checked for outliers and model fit, and analysed using a linear regression model. The correlation matrix indicated that financial linkage variables were correlated with access to debt finance variables, and the regression results showed that 2% of the change in access to debt finance was contributed by financial linkage. It also implied that financial linkages play a pivotal role in SME development through their connection to financial institutions. Therefore, the study recommends that the BDS providers extend and enhance financial linkage services to ease SMEs' access to debt finance.

Keywords: Financial linkages, access to debt finance, SMEs, PASS and BDS

1. Introduction

Access to debt financing from formal financial institutions is paramount to the economic performance of Small and Medium Enterprises (SMEs) around the globe (Kira, 2013). However, the lack of information and the complexity of financing by financial institutions (FFIs) to SMEs are the main setbacks to SMEs' growth. Financial institutions require information such as annual business turnover, audited financial records, credit history, collateral, and business profile (Chilembo, 2021; Saari, 2020; Asah et al.,2020) to approve financing to SMEs. Such information is usually not readily available to SMEs, which affects the SMEs' access to debt finance (Ndiege, Qin, Kazungu & Moshi, 2014).

The importance of SMEs in job creation and economic development (Chege & Wang, 2020; Abisuga-Oyekunle et al., 2020) has made governments design different programs to support financing for them. The support measures include establishing business development services to provide various services for developing SMEs (Mwaniki et al., 2022). Mwaniki et al. concur that business development services mainly contribute to the access to debt finance and the growth of SMEs. The BDS services include the financial linkages made by the BDS providers. Financial linkage is between formal financial institutions and SMEs (Wasiuzzaman et al., 2020). Pagura and Kirsten (2006) define financial linkages as any mutually beneficial partnerships that result in outreach expansion.

The BDS providers play a significant role in ensuring that SMEs are known to financial institutions. They provide things that the financial institutions need for loan approval to SMEs. These include preparing business plans, financial records, and business profiles that pave the way for SMEs to be known by financial institutions. In addition, BDS providers provide collateral for uncreditworthy SMEs (Adane, 2022; Badi & Ishengoma, 2021). This direct financial linkage helps SMEs access debt financing for expansion and growth. In a nutshell, financial linkages to SMEs play an essential role in the sensitivity of financial institutions to shocks (Luo, 2020). Pagura and Kristine (2006) emphasize that the increase in financial linkages by financial institutions aims to increase SMEs' access to debt finance.

In sub-Saharan Africa, many BDS providers aim to enhance SMEs' access to debt finance and performance. They lay the groundwork for intermediating between SMEs and financial institutions to improve the declining relationship due to information asymmetry (Muthoni et al., 2017). The BDS in financial

linkages aims to interconnect the two parties by balancing the information held by each party for mutual benefits (Fleischman et al., 2020). Despite many BDS providers providing financial linkages between SMEs and financial institutions, SMEs' access to debt finance from formal financial institutions is still low (Kamanga & Mwaikambo, 2020; Gassiah & Kikula, 2022). Studies by Magembe (2017), Mpofu and Sibindi (2022), and Justus (2023) confess that out of 2.7 million SMEs, only 15% have access to debt financing from formal financial institutions. Therefore, this study explores the effectiveness of BDS in financial linkages on the SME's access to debt finance from formal financial institutions

2. Theoretical framework

The study is guided by the information asymmetry theory propounded by Arkof and Spencer. It emphasizes that when two parties have a relationship, one must hold more information than the other (Agarwal & Sambamurthy, 2020). This creates an imbalance in the relationship that may cause adverse selection and moral hazard problems, which are the phenomena where there is a hidden characteristic problem and people on the informed side of the market self-select in a way that is harmful to the uninformed side of the market (Berg, 2021). In the study, the relationship between SMEs and formal financial institutions is characterized by an information imbalance. SMEs possess more details in the business environment than financial institutions when they apply for credit access. Hence, financial institutions can decide to approve loan applications to SMEs without knowing the intention of SME owners, ultimately resulting in the loss of principal and interest.

The BDS providers exist to mitigate the loss caused by information asymmetry. BDS providers provide a financial linkage to these two parties. They play the role of intermediaries to facilitate smooth access to debt finance for SMEs.

3. Materials and Methods

The study is a descriptive design because it aims to determine the characteristics of the population and identify and establish patterns of the population (Abbott & McKinney, 2012). The descriptive design research describes the phenomenon and its characteristics and concerns how and why something happens. Data for the study were corrected from SMEs served by the BDS provider Private Agriculture Sector Support (PASS). The organization was selected because it has been helping SMEs access debt finance from formal financial institutions. Although many organization provides BDS, PASS is dominant in the country for delivering financial linkages. The organization provided a list of 1000 SME owners. Using Cochran's (1963) formula to

calculate an adequate sample size at a 95% confidence interval, 278 SMEs were selected to form a sample. Questionnaires were distributed to the selected SMEs using the contact address provided by PASS in the list, and other questionnaires were given to SME owners on hand at their physical addresses. At last, 262 questionnaires were returned.

The data was entered into the computer, and SPSS version 27 was used in subsequent results processing. Before the data analysis, tests were done to determine whether the data conformed to the selected techniques. There are various data analysis techniques, but each requires data to fulfil certain conditions. The conditions include adequate sample size, normality, multicollinearity, linearity, and homogeneity (Davino et al., 2022). The conditions were tested to determine whether the collected data met the technique selected for data analysis, and it was found that it conformed.

4. Findings and Discussions

4.1 Demographic Characteristics of Respondents

In the study, 203(77.4 per cent) respondents were male, and about 59(22.6 per cent) were female. The domineering of males in the survey indicates that more males engage in business to sustain their lives compared to their female counterparts (Peck et al., 2020). The result also coincides with Ishengoma (2018), who argued that males are more empowered and encouraged to finance their families in African families. This attitude triggers aggressiveness and boosts risk-taking behaviour. In addition, 173(66.1 per cent) respondents were owner-managers, 73 (27.8 per cent) were employed managers, and 16(6.15 per cent) were others. Most SMEs are owner-managed; they prefer to run their business, and those few who have hired managers might have employees whom they cannot stand for their own business.

In terms of relationships, more than half of the respondents were married, 235(89.6 per cent), and singles were only 20(7.8 per cent), while others were divorced, widows, and widowers were only 7(2.6 per cent). Regarding age, 114(43.5 per cent) were between 41 and 50 years of age, 66 (25.2 per cent) were above 50, 62(23.5 per cent) were between 31 and 40, and 20(7.8 per cent) were below 30. The higher representation of respondents aged between 41 and 50 may be due to their families' responsibilities; hence, they must establish businesses to earn income and sustain their families.

The respondent's education indicated that 139 (52.9 per cent) were standard seven learners, 52 (20.1 per cent) were masters and above, 30(11.3 per cent)

were IV leavers, 25 (9.6 per cent) had a degree level, and 16 (6.1 per cent) had a diploma level of education. The most representative of the standard seven leaves is that the study surveyed people engaged in agribusiness. The survey was done among people involved in agribusiness activities such as farming, input supplies, animal fattening, fishing, piggery, horticulture, animal feeds, and paddy and maize processing. Table 6 summarizes the findings of this study.

Table 1: Demographic Characteristics of Respondents

S/No.	Details	Category	Frequency	Per cent
1	Sex	Male	203	77.4
		Female	59	22.6
		Total	**262**	**100.0**
2	Age	18 below	7	2.6
		18-30	13	5.2
		31-40	62	23.5
		41-50	114	43.5
		50 and above	66	25.2
		Total	**262**	**100.0**
3	Marital Status	Single	20	7.8
		Married	235	89.6
		Others	7	2.6
		Total	**262**	**100.0**
4	Educational Level	Masters and Above	54	20.9
		Degree	25	9.6
		Diploma	15	6.1
		Certificate	5	1.7
		"A" Level Education	5	1.7
		"O" Level Education	30	11.3
		Primary School	128	48.7
		Total	**262**	**100.0**
5	Category of respondents	Owner Managers	173	66.1
		Managers/operator	73	27.8
		Others (Secretary)	16	6.1
		Total	**262**	**100.0**

Source: Field Data 2018

4.2 SME characteristics

Out of 262 businesses, 116(44.3 per cent) were sole proprietorship businesses, 5 (1.7 per cent) were partnership businesses, 123 (47.0 per cent) were limited

companies, and 18(7.0 per cent) were Community-Based Organizations (CBOs). Although limited companies are overbearing, sole proprietorships are also in large numbers; this may be because the owners of these businesses are unaware of registering as limited companies. Most SMEs are engaged in different agribusiness activities. The study identified 118 food processors (45.2 per cent), 23(8.7 per cent), 30 oil extraction processors (11.3 per cent), and nine animal fattening processors (3.5 per cent). At the same time, 82(31.3 per cent) participants were engaged in butchery, cane cutting and growing, piggery, transport, horticulture, input supplies, milk processing, coffee export, fishing, and fruit processing.

Employment creation is a significant contributor to SMEs. This study found that more than half of the SMEs employed people between 5 and 49, and 5(1.7 per cent) employed people between 50 and 99, while those with more than 100 and others employed only 5(1.8 per cent). The results indicate that small and medium enterprises were overrepresented in this study because more employment opportunities were found in groups between 5 and 49, which is the primary characteristic of small and medium enterprises (SMEs) (URT, 2012).

Experience was ranked using an interval from 1976 to 2015 with a gap of 10 years. The results indicate that more than half, 200 (76.5 per cent), were established between 2006 and 2015, 34 (13.0per cent) between 1996 and 2005, 20(7.8 per cent) between 1986 and 1995, and 8(2.6 per cent) between 1976 and 1985. On average, the respondents had 12 years of business experience.

It was found that 246 (93.9 per cent) established businesses used their savings, 7 (2.6 per cent) used credit from financial institutions, 4(1.7 per cent) from family and friends, and 5 (1.8 per cent) were financed by buyers. The result concurs with Ishengoma (2018), who argued that SMEs are constrained to financial services, as only 30 % have access to financial services, and only 14% have a bank account.

The study also explored the average annual turnover of surveyed businesses. The results indicate that 134(51.3 per cent) had a turnover of up to 70 million, 66(25.2 per cent) had a turnover between 70 million and 500 million, 41(15.7 per cent) had more than 1 billion. Only 20(7.8 per cent) had a turnover between 500 million and 1 billion. Table 7 indicates the characteristics of the SMEs.

Table 2: SMEs Characteristics

S/No.	Details	Category	Frequency	Per cent
1	Geographical location (ZONAL OFFICE)	Morogoro	173	66
		Mbeya	63	24
		Mwanza	26	10
		Total	**262**	**100**
2	Business categories	Food processing	118	45.2
		Farming	23	8.7
		Oil Extraction	30	11.3
		Animal fattening	9	3.5
		Others	82	31.3
		Total	**262**	**100**
3	Ownership structure	Sole proprietorship	116	44.3
		Partnership	5	1.7
		Limited Company	123	47.0
		CBOs	18	7.0
		Total	**262**	**100**
4	Establishment period (years)	1976-1985	8	2.6
		1986-1995	20	7.8
		1996-2005	34	13.0
		2006-2015	200	76.5
		Total	**262**	**100.0**
5	Employment Contribution	Between 5 and 49	252	96.5
		Between 50 & 99	5	1.7
		Above 100	5	1.7
		Total	**262**	**100.0**
6	Financing modalities of SMEs	Own savings	246	93.9
		Family and friends	4	1.7
		Credit from Banks	7	2.6
		Buyers financing	5	1.7
		Total	**262**	**100**
7	SMEs turnover	Below 70 million	134	51.3
		Between 70 & 500 million	66	25.2
		Between 500 million and 1 billion	20	7.8
		Above 1 billion	41	15.7
		Total	**262**	**100**

Source: Field Survey, (2018)

4.3 Financial Linkages and Access to Debt Finance

The respondents were asked to express their opinions on the status of the financial linkages facilitated by BDS providers. The economic linkages had five measurement variables, which included information sharing and networking (FNK1), interaction with financial institutions (FNK2), interaction with

professional associations (FNK3), participation in trade fairs and seminars (FNK4), and membership in informal groupings (FNK5).

The findings indicate that 155 (59.1%) respondents ranked information-sharing and networking (FNK1) as important in accessing debt finance and improving business performance. The results concur with those of Le and Nguyen (2009), Leroy (2012), and Heshmati (2013), who found that networking positively affected access to debt finance and the performance of SMEs in Vietnam, South Africa, and Sweden. Furthermore, it was noted that 184 (70.1%) respondents agreed that interactions with financial institutions (FNK2) help SMEs to access debt finance. The response is similar to that of Kira (2013), who evaluated the factors influencing Tanzanian SMEs' access to debt financing. The evaluation of SMEs' interaction with professional associations indicated that more than half, 137(52.3%) respondents, strongly agreed that professional association groups(FNK 3) assist them in accessing debt finance from formal financial institutions. The results amplify the findings of Gamage (2011), who investigated SMEs' access to debt finance in Las Vegas, America. Professional associations significantly influence SMEs' access to debt finance from formal financial institutions. Participation in trade fairs and seminars (FNK4) was ranked low only by 126(48.1%). The results contradict those of Megersa (2020) and Nguyen et al. (2021), who found that trade fairs and seminars give awareness to SME owners to access debt finance from formal financial institutions. In addition, the ranking of membership in informal groups (FNK5) indicated that 102.4% (39.1%) agree that it helps in accessing debt finance by sharing information about the availability of services. On average, 53.7% of respondents concurred that financial linkage is essential in accessing debt finance.

Table 3: Financial Linkage and Access to Debt Finance

Code	Description	Agree	Neutral	Disagree	Total %
FNK1	Information-sharing and networking	155 (59.1%)	48 (18.3%)	59 (22.5%)	262 (100%)
FNK2	Interactions with financial institutions	184 (70.2%)	70 (26.1%)	8 (3.1%)	262 (100%)
FNK3	Interactions with professional association groups	137 (52.3%)	58 (22.1%)	67 (25.6%)	262 (100%)
FNK4	Participation in trade fairs and seminars	126 (48.1%)	94 (35.9%)	42 (16.0%)	262 (100%)
FNK5	Membership in informal groups	102 (39.1%)	35 (13.4%)	124 (47.6%)	262 (100%)

Source: Field Data (2018)

4.4 Multivariate Analysis: Correlation Matrix

The impact of financial linkage on SMEs' access to debt financing was analysed using the correlation matrix. The correlation matrix measures the strength of the association between variables. The variables tested were information sharing and networking (FNK1), interaction with financial institutions, professional association (FNK3), participation in trade fairs and seminars (FNK4), membership in informal groupings (FNK5), and access to debt finance, which was measured by affordability, timeliness and adequacy.

A person correlation analysis determines the correlation between the financial linkage construct and the access to debt finance variables. The correlation ranges from -1 to 1, which indicates perfect negative and perfect positive correlation, while 0 indicates no correlation. A variable correlated by itself always has a correlation coefficient of 1. The results suggest that the financial linkage variables positively correlate with access to debt finance variables. The study established that there is a positive correlation between the financial linkage variable and affordability ($r=.249^{**}$, $p<0.01$) and a positive correlation between financial linkages and timeliness ($r=.146^{**}$, $p<0.01$), as well as a weak correlation between financial linkage and adequate access to finance ($r=.017$, $p>0.05$). Regarding hypothesis (H1), the correlation results in Table 3 show a significant relationship between financial linkages and access to debt finance. With financial linkages, SMEs can access debt finance at an affordable, timely, and adequate cost.

Table 4: Correlations

Description		FNK1	FNK2	FNK3	FNK4	FNK5	AFF	TM	ADQ
FNK1	Pearson Correlation	1	.710**	.552**	.541**	.528**	.249**	.146**	.017
	Sig. (1-tailed)		.000	.000	.000	.000	.000	.009	.392
FNK2	Pearson Correlation	.710**	1	.533**	.491**	.536**	.277**	.070	.009
	Sig. (1-tailed)	.000		.000	.000	.000	.000	.129	.445
FNK3	Pearson Correlation	.552**	.533**	1	.669**	.575**	.229**	.071	.008
	Sig. (1-tailed)	.000	.000		.000	.000	.000	.127	.452
FNK4	Pearson Correlation	.541**	.491**	.669**	1	.613**	.215**	.103*	.023
	Sig. (1-tailed)	.000	.000	.000		.000	.000	.048	.357
FNK5	Pearson Correlation	.528**	.536**	.575**	.613**	1	.281**	.119*	.006
	Sig. (1-tailed)	.000	.000	.000	.000		.000	.027	.464
AFF	Pearson Correlation	.249**	.277**	.229**	.215**	.281**	1	.324**	.290**
	Sig. (1-tailed)	.000	.000	.000	.000	.000		.000	.000
TM	Pearson Correlation	.146**	.070	.071	.103*	.119*	.324**	1	.356**
	Sig. (1-tailed)	.009	.129	.127	.048	.027	.000		.000
ADQ	Pearson Correlation	.017	.009	.008	.023	.006	.290**	.356**	1
	Sig. (1-tailed)	.392	.445	.452	.357	.464	.000	.000	

**. Correlation is significant at the 0.01 level (1-tailed).

*. Correlation is significant at the 0.05 level (1-tailed).

4.5 Multivariate Analysis: Standard Multiple Regression

Tabachnick and Fidell (2001) contend that standard multiple regression can easily analyse ordinal scale data. In this study, a standard multiple regression analysis was done to determine the ability of the financial linkages to assess SMEs' access to debt finance. The study was built on the hypothesis (H_0) that financial linkages do not help SMEs access debt finance. The choice of standard multiple regression was based on the fact that the dependent and independent variables were ordinal scales.

The results of standard multiple regression always produce different tables for various purposes. The model summary table describes the relationship between independent variables and one dependent variable. This means it evaluates how closely the predicted values match the observed values and how much of the variation in the dependent variable is explained by the independent variables (Chicco, Warrens & Jurman, 2021; Peugh & Feldon, 2020). The results indicate that financial linkage variables explain 2% of the change in access to debt finance. This implies that information sharing and networking, interaction with financial institutions, interaction with professional associations, participation in trade fairs and seminars, and membership in informal groups contribute to access to debt finance by only 2%. The independent variables are statistically significant, but a low adjusted R-squared value indicates that independent variables correlate with the dependent variable and do not explain much of the variability in the dependent variable (Andersson et al., 2020). Ozili (2023) states that most of the variables included in social studies do not necessarily explain the outcome. Therefore, a low R-squared is not necessarily bad because most social science research modelling does not aim to predict human behaviour. However, the goal is often to assess whether specific predictors or explanatory variables significantly affect the dependent variable. Table 5 displays the model summary results of the regression equation.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.197[a]	.039	.020	.64112

a. Predictors: (Constant), ,FNK1, FNK2, FNK3, FNK4, FNK5

The analysis of variance (ANOVA) is a statistical method used to compare the means of two or more groups. The analysis of variance helps to drive meaningful conclusions from the data collected by allowing us to determine whether there are any significant differences between these groups (Kar & Dwivedi, 2020). The table indicates that $F(5,262) = 2.059$, $p = 0.071$, which

indicates a small F-value and a p-value greater than 0.05, implying no significant difference of means within and between the groups; therefore, we have insufficient evidence to reject the null hypothesis.

Table 6: Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.231	5	.846	**2.059**	**.071**[b]
	Residual	105.225	256	.411		
	Total	**109.456**	**261**			

a. Dependent Variable: ACCD

b. Predictors: (Constant), ,FNK1, FNK2, FNK3, FNK4, FNK5

The unstandardized and standardized coefficients are essential results in the regression model. Unstandardized coefficients reflect the expected linear change in the response with each unit change in the predictor. The coefficient FNK1 or B=0.056 implies that a 1 unit change in FNK1 (X) causes the access to debt finance (Y)to change by 0.056 on average. The unstandardized coefficients determine what effects a 1 unit change in X will have on Y or indicate how much the dependent variable varies with an independent variable when all other independent variables are held constant(Weisburd et al., 2022). The results displayed in the table suggest that FNK1, FNK2, FNK4, and FNK5 positively affect access to debt finance, while FNK3 has an adverse effect.

The standardized coefficients help determine which independent variables are more critical (Nieminen, 2022). The standardized coefficients explain the contribution of each independent variable; through these, you can choose which variable significantly contributes to access to debt finance. The study results imply that FNK1 has a significant contribution to the outcome because a 1 unit change in FNK1 causes a 0.103 shift in access to debt finance, and FNK3 has a negative contribution, which means a 1 unit change in FNK3 causes a decrease of access to debt finance by 0.012. Table 7 shows the regression results.

Table 7: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.715	.131		20.697	.000
	FNK1	.056	.050	.103	1.107	.269
	FNK2	.007	.044	.014	.151	.880
	FNK3	-.006	.042	-.012	-.135	.892
	FNK4	.014	.041	.031	.344	.731
	FNK5	.047	.042	.094	1.118	.265

a. Dependent Variable: ACCD

ACCD= 2.715 + 0.056FNK1+0.007FNK2-0.006FNK3+0.014FNK4 +0.047FNK5

5. Conclusions and Implications of the Findings

The study explored the contribution of financial linkages to SMEs' debt finance access. The findings imply that financial linkages contribute 2% of the change in access to debt finance, and other factors contribute 98%. Although the R-square is low, there is a connection between financial linkages and access to debt finance because using BDS providers helps SMEs access debt finance easily from formal financial institutions. Therefore, information sharing and networking, interactions with financial institutions, interactions with professional association groups, participation in trade fairs and seminars, and membership in informal groups are essential factors that help SMEs easily access debt finance from formal financial institutions. In conclusion, financial linkages bridge the information gap between SMEs and financial institutions by providing all the requirements for loan approval.

BDS providers should extend and enhance the financial linkages to SMEs. The current services provided for financial linkages do not suffice, and therefore, more services should be designed to ease SMEs' access to debt finance.

Due to low R-squared, the contribution of financial linkages to SMEs' access to debt finance poses a challenge. The quantitative study looked at the relationship of variables, including social science variables; some are included even though they have low effects on the outcome. Therefore, another mixed research study can add more value to the current findings. Future studies can be conducted to examine public BDS providers and extend the scope of SMEs.

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