



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

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**How to cite this paper:** Badi, L. and Ishengoma, E. (2024) The Financial Linkages as an Antecedent of Access to Debt Finance for Small and Medium Enterprises in Tanzania. *Open Access Library Journal*, 11: e12621. <https://doi.org/10.4236/oalib.1112621>

**Received:** November 12, 2024

**Accepted:** December 23, 2024

**Published:** December 26, 2024

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## Abstract

The study examined the effectiveness of financial linkages 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 analyzed 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 Business Development Services (BDS) providers extend and enhance financial linkages to ease SMEs' access to debt finance.

## Subject Areas

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 financial performance of Small and Medium Enterprises (SMEs) around the globe (Kira, 2013) [1]. However, the lack of information and complexity of financing by financial institutions (FFIs) to SMEs is the main setback to SMEs' growth. Financial institutions require information such as annual business turnover, audited financial records, credit history, collateral, and business profile (Chilembo, 2021 [2]; Saari, 2020 [3]; Asah *et al.*, 2020 [4]) 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) [5].

The importance of SMEs in job creation and economic development (Chege & Wang, 2020 [6]; Abisuga-Oyekunle *et al.*, 2020 [7]) has made governments design different programs to support financing them. The support measures include establishing business development services to provide various services for developing SMEs (Mwaniki *et al.*, 2022) [8]. Mwaniki *et al.* concur that business development services mainly contribute to the access to debt finance and growth of SMEs. The BDS services include the financial linkages made by the BDS providers. A financial linkage connects formal financial institutions and SMEs (Wasiuzzaman *et al.*, 2020 [9]). Pagura and Kirsten (2006) [10] 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 the preparation of 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) [11]. 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) [12]. Pagura and Kristine (2006 [10]) emphasize that the increase in the use of financial linkages by financial institutions targets to increase SMEs' access to debt finance.

In sub-Saharan Africa, many BDS providers target to enhance SMEs' access to debt finance and performance. They play the groundwork of intermediating between SMEs and financial institutions to improve the declining relationship due to information asymmetry (Muthoni, Mutuku & Riro, 2017) [13]. The BDS in financial linkages aims to interconnect the two parties by balancing the information held by each party for mutual benefits (Fleischman, Dini & Littera, 2020) [14]. Despite the existence of 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 [15]; Gassiah & Kikula, 2022 [16]). Studies by Magembe (2017) [17], Mpofu and Sibindi (2022) [18], and Justus (2023) [19] confess that out of 2.7 million SMEs, only 15% have access to debt financing from formal financial institutions. The low access to debt finance

of SMEs is a challenge to the effectiveness of BDS providers, whether they play their role or not, and also whether the program is effective or not. 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 and Empirical Literature Review

### 2.1. Theoretical Review

The information asymmetry theory propounded by Akerlof (1978) [20] guides the study. It emphasizes that when two parties have a relationship, one must hold more information than the other (Agarwal & Sambamurthy, 2020) [21]. This creates an imbalance in the relationship that may cause adverse selection and moral hazard problems, which are the phenomenon 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) [22]. 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, which ultimately ends with the entire 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 intermediates to facilitate smooth access to debt finance for SMEs.

### 2.2. Empirical Literature Review

Financial linkage is the connections between economies through the SMEs and financial institutions. Financial linkage aims to reduce costs in terms of access to debt finance. However, Ishengoma (2010) [23] contends that financial linkages increase cost margins and inefficiency in access to debt finance from formal financial institutions. In addition, Pagura and Kirsten (2006) [10] emphasize that financial linkages are promising but difficult to set up and manage, require strong BDS providers and formal financial institutions, and seldom result in a significant expansion of financial services beyond credit.

Chan-Lau *et al.* (2009) [24] assessed the systematic implication of financial linkages to Small businesses. The emphasis was that the rise of complexity and globalization of financial services has contributed to stronger interconnections or linkages. The study results were that financial linkages contribute to economic growth by smoothing credit allocation and allowing greater risk diversification; they also increase the potential for disruptions to spread swiftly across markets and borders and have enabled risk transfers that financial regulators or institutions did not fully recognize.

The study by Fitriasari and Dalimunthe (2019) [25] in Indonesia explored the effectiveness of the financial linkage program and found that linkage programs

had a positive impact, especially on improving the affordability of outreach in small and medium-sized businesses and suggested that SMEs should employ financial linkage program to facilitate access to debt finance by providing incentives to formal financial institutions and reduce barriers for SMEs to participate in the program.

The study by Ndiege *et al.* (2014) [5] investigated the financial linkages to savings and credit association (SACCOS) in Tanzania. The panel data from 2004-2011 were used in the analysis, and the results indicated that the higher the financial linkages to SACCOS, the more the SACCOS became unsustainable. The results imply that for the SACCOS to be sustainable, it should avoid using external finance.

The empirical literature reviews explored have mixed results on the significance of financial linkages. Some studies indicate that financial linkages have a negative impact and confirm that they seldom increase business expansion and cause unsustainability to SACCOS (Ndiege *et al.*, 2014 [5]; Ishengoma, 2010 [23]; Pagura & Kirsten (2006 [10]). Other studies' results indicate that financial linkages program has a positive impact, especially in improving the affordability of outreach to SMEs, contributing to economic growth by smoothening the credit allocation and allowing significant risk diversification (Chan-Lau *et al.* 2009 [24]; Fitriasari & Dalimunthe, 2019 [25]). Besides the contradiction in the results, most of the studies conducted outside Tanzania and those undertaken in Tanzania specifically explored financial linkages with respect to cooperatives and SACCOS, but little has been done to examine the effectiveness of financial linkages on the 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) [26]. 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 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 other organizations provide BDS, PASS is dominant in the country for providing financial linkages.

Other BDS providers include KAKUTE, Tanzania Associations of Professional Business Development Services (TAPBDS), SMEs Impact Fund, AKILIMALI, African Trading Insurance (AFI) and African Guarantee Fund (AGF). Besides all these organisations providing BDS, Private Agriculture Sector Support (PASS) is the only organization with wide coverage in the country.

PASS provided a list of 1000 SME owners. Using Cochran's (1963) [27] formula to calculate an adequate sample size at a 95% confidence interval, 278 SMEs sample size was determined. 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 received and filled.

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 fulfill certain conditions. The conditions include adequate sample size, normality, multicollinearity, linearity, and homogeneity (Davino, Romano & Vistocco, 2022) [28]. The adequate sample size, normality, linearity, and homogeneity were tested to determine whether the collected data met the technique selected for data analysis, and it was found that it conformed.

## 4. Results and Discussion

### 4.1. Demographic Characteristics of Respondents

In the study, 203 (77.4 per cent) respondents were male, and 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, Sockol & Hancock, 2020) [29]. The result also coincides with Ishengoma (2018) [30], who argued that males are more empowered and encouraged to finance their families in African families, an attitude that 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 stand for their business, and those few who have hired managers might have employment that 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 single 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) formed IV leavers, 25 (9.6 per cent) had a degree level, and 16 (6.1 per cent) had a diploma level of education. The more representative of standard seven leaves is that the study surveyed people engaged in agribusiness. The survey was done to people involved in agribusiness activities such as farming, input supplies, animal fattening, fishing, piggery, horticulture, animal feeds, and paddy and maize processing. **Table 1** summarizes the demographic findings of this study.

The composition of age, gender, marital status, and education level of the re-

spondents identifies the trends and connections tied to them and provides deeper insight into the research results. According to the study results, most respondents were between 41 and 51, the age group of mature and married people. This implies that the active group struggles to live and has a vast knowledge of access to debt finance from formal financial institutions. This is confirmed by the study of Kariuki (2018) [31], who found that age predicts an individual's indebtedness. Kariuki also noted that debt literacy, which implies the respondents' education, is related to access to debt finance from formal financial institutions. Therefore, the age and education level of the respondents are among the determinants of access to debt finance from formal financial institutions.

**Table 1.** Demographic characteristics of respondents.

S/No.	Details	Category	Frequency	Per cent %
1	Sex	Male	203	77.4
		Female	59	22.6
		<b>Total</b>	<b>262</b>	<b>100.0</b>
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
		<b>Total</b>	<b>262</b>	<b>100.0</b>
3	Marital status	Single	20	7.8
		Married	235	89.6
		Others	7	2.6
		<b>Total</b>	<b>262</b>	<b>100.0</b>
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
		<b>Total</b>	<b>262</b>	<b>100.0</b>
6	Category of respondents	Owner managers	173	66.1
		Managers/operator	73	27.8
		Others (secretary)	16	6.1
		<b>Total</b>	<b>262</b>	<b>100</b>

Source: Field data 2018.

## 4.2. SMEs 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 engaged in different agribusiness activities. The study identified 118 food processors (45.2 per cent) as food processors, 23 (8.7 per cent), 30 oil extraction processors (11.3 per cent), and 9 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 above 100 and others employed only 5 (1.8 per cent). The results indicate that small and medium enterprises were overbearing 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) [32].

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 (13.0 per 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 using 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) [33], 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, and only 20 (7.8 per cent) had a turnover between 500 million and 1 billion. **Table 2** 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
		<b>Total</b>	<b>262</b>	<b>100</b>

## Continued

		Food processing	118	45.2
		Farming	23	8.7
2	Business categories	Oil extraction	30	11.3
		Animal fattening	9	3.5
		Others	82	31.3
		<b>Total</b>	<b>262</b>	<b>100</b>
		sole proprietorship	116	44.3
		Partnership	5	1.7
3	Ownership structure	Limited company	123	47.0
		CBOs	18	7.0
		<b>Total</b>	<b>262</b>	<b>100</b>
		1976-1985	8	2.6
		1986-1995	20	7.8
4	Establishment period (years)	1996-2005	34	13.0
		2006-2015	200	76.5
		<b>Total</b>	<b>262</b>	<b>100.0</b>
		Between 5 and 49	252	96.5
5	Employment contribution	Between 50 and 99	5	1.7
		Above 100	5	1.7
		<b>Total</b>	<b>262</b>	<b>100.0</b>
		Own savings	246	93.9
		Family and friends	4	1.7
6	Financing modalities of SMEs	Credit from banks	7	2.6
		Buyers financing	5	1.7
		<b>Total</b>	<b>262</b>	<b>100</b>
		Below 70 million	134	51.3
		Between 70 and 500 m	66	25.2
7	SMEs turnover	Between 500 m and 1 billion	20	7.8
		Above 1 billion	41	15.7
		<b>Total</b>	<b>262</b>	<b>100</b>

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 financial 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 (FNK), and membership

in informal groupings (FNK5).

The findings indicate that 155 (59.1%) respondents ranked information-sharing and networking (FNK1) as extremely important in accessing debt finance and improving business performance. The results concur with those of Le and Nguyen (2009) [32], Leroy (2012) [34], and Heshmati (2013) [35], 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) [1], 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) [36], who investigated SMEs' access to debt finance in Las Vegas, America. This implies that 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) [37] and Nguyen *et al.* (2021) [38], 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 important in accessing debt finance. (See **Table 3**)

**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 analyzed 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, timely 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 ( $r = 0.249^{**}$ ,  $p < 0.01$ ) and a positive correlation between financial linkages and timeliness ( $r = 0.146^{**}$ ,  $p < 0.01$ ), as well as a weak correlation between financial linkage and adequate access to finance ( $r = 0.017$ ,  $p > 0.05$ ). Regarding hypothesis (H1), the correlation results in **Table 4** 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 matrix.

	Description	FNK1	FNK2	FNK3	FNK4	FNK5	AFF	TM	ADQ
FNK1	Pearson correlation	1							
	Sig. (1-tailed)								
FNK2	Pearson correlation	0.710**	1						
	Sig. (1-tailed)	0.000							
FNK3	Pearson correlation	0.552**	0.533**	1					
	Sig. (1-tailed)	0.000	0.000						
FNK4	Pearson correlation	0.541**	0.491**	0.669**	1				
	Sig. (1-tailed)	0.000	0.000	0.000					
FNK5	Pearson correlation	0.528**	0.536**	0.575**	0.613**	1			
	Sig. (1-tailed)	0.000	0.000	0.000	0.000				
AFF	Pearson correlation	0.249**	0.277**	0.229**	0.215**	0.281**	1		
	Sig. (1-tailed)	0.000	0.000	0.000	0.000	0.000			
TM	Pearson correlation	0.146**	0.070	0.071	0.103*	0.119*	0.324**	1	
	Sig. (1-tailed)	0.009	0.129	0.127	0.048	0.027	0.000		
ADQ	Pearson correlation	0.017	0.009	0.008	0.023	0.006	0.290**	0.356**	1
	Sig. (1-tailed)	0.392	0.445	0.452	0.357	0.464	0.000	0.000	

\*\*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) [39] contend that standard multiple regression can easily analyze ordinal scale data. In this study, a standard multiple regression analysis was done to determine the ability of the financial linkages to determine 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 [40]; Peugh & Feldon, 2020 [41]).

The results indicate that financial linkage variables explain 2% of a 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, Cuervo-Cazurra & Nielsen, 2020) [33]. Ozili (2023) [42] states that most of the variables included in social studies do not necessarily explain the outcome, and therefore, a low R-squared is not necessarily bad because most social science research modeling does not aim to predict human behavior, and human behavior is unpredictable. However, the goal is often to assess whether specific predictors or explanatory variables significantly affect the dependent variable. R-squared represents the scatter around the regression line, and the significant variables' interpretation is the same for both high and low R-squared (Park *et al.*, 2020 [43]; Plonsky & Ghanbar, 2018 [44]). Hence, it is advised that BDS providers should add more services to the existing ones to uplift the level of SMEs' access to debt finance from formal financial institutions. **Table 5** below 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	0.197 <sup>a</sup>	0.039	0.020	0.64112

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

The analysis of variance (ANOVA) is a statistical method used to compare 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) [45]. The **Table 6** 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.
	Regression	4.231	5	0.846	2.059	0.071 <sup>b</sup>
1	Residual	105.225	256	0.411		
	Total	109.456	261			

<sup>a</sup>Dependent variable: ACCD; <sup>b</sup>Predictors: (Constant), FNK1, FNK2, FNK3, FNK4, FNK5.

The unstandardized and standardized coefficients are important 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) [46]. The results displayed in the table suggest that FNK1, FNK2, FNK4, and FNK5 positively affect access to debt finance, while FNK3 has a negative effect.

The standardized coefficients help determine which independent variables are more important (Nieminen, 2022) [47]. The standardized coefficients explain the contribution of each independent variable; through these, you can determine 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 change 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		
	(Constant)	2.715	0.131		20.697	0.000
	FNK1	0.056	0.050	0.103	1.107	0.269
	FNK2	0.007	0.044	0.014	0.151	0.880
1	FNK3	-0.006	0.042	-0.012	-0.135	0.892
	FNK4	0.014	0.041	0.031	0.344	0.731
	FNK5	0.047	0.042	0.094	1.118	0.265

<sup>a</sup>Dependent variable: ACCD.

$$\text{ACCD} = 2.715 + 0.056\text{FNK1} + 0.007\text{FNK2} - 0.006\text{FNK3} + 0.014\text{FNK4} + 0.047\text{FNK5}$$

## 5. Conclusions and Implication of the Findings

The study explored the effectiveness of financial linkages to SMEs' access to debt

finance. The findings imply that financial linkages contribute 2% of 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, interaction with professional associations groups, participation in trade fairs and seminars, and membership in informal groups are important factors that help SMEs easily access debt finance from formal financial institutions. In conclusion, financial linkages bridge the information gap existing between SMEs and financial institutions by providing all necessary requirements to financial institutions 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-square, the contribution of financial linkages to SMEs' access to debt finance poses a challenge. The quantitative study looked at the relationship of variables and these social science variables; some are included even though they have low effects on the outcome. Financial linkages play a significant role in ensuring SMEs access debt finance from formal financial institutions, and therefore, policymakers have to craft policies that will strengthen BDS providers to offer services that foster the accessibility of debt finance. Therefore, another mixed research study can be employed to add more value to the current findings. Future studies can be conducted to examine public BDS providers and extend the scope of SMEs.

### Conflicts of Interest

The authors declare no conflicts of interest.

### References

- [1] Kira, A.R. (2013) Determinants of Financing Constraints in East African Countries' SMEs. *International Journal of Business and Management*, **8**, 49-68. <https://doi.org/10.5539/ijbm.v8n8p49>
- [2] Chilembo, T. (2021) A Study of the Factors Affecting Small and Medium Enterprises (SMEs) Access to Finance. a Case of Lusaka Based SMEs. *American Journal of Industrial and Business Management*, **11**, 437-460. <https://doi.org/10.4236/ajibm.2021.115028>
- [3] Saari, D. (2020) Challenges Faced by SMEs When Accessing Loans from Financial Institutions in Nigeria.
- [4] Asah, F.T., Louw, L. and Williams, J. (2020) The Availability of Credit from the Formal Financial Sector to Small and Medium Enterprises in South Africa. *Journal of Economic and Financial Sciences*, **13**, a510. <https://doi.org/10.4102/jef.v13i1.510>
- [5] Ndiege, B.O., Qin, X., Kazungu, I. and Moshi, J. (2014) The Impacts of Financial Linkage on Sustainability of Less-Formal Financial Institutions: Experience of Savings and Credit Co-Operative Societies in Tanzania. *Journal of Co-Operative Organization and Management*, **2**, 65-71. <https://doi.org/10.1016/j.jcom.2014.10.003>

- [6] Chege, S.M. and Wang, D. (2019) Information Technology Innovation and Its Impact on Job Creation by SMEs in Developing Countries: An Analysis of the Literature Review. *Technology Analysis & Strategic Management*, **32**, 256-271. <https://doi.org/10.1080/09537325.2019.1651263>
- [7] Abisuga-Oyekunle, O.A., Patra, S.K. and Muchie, M. (2019) SMEs in Sustainable Development: Their Role in Poverty Reduction and Employment Generation in Sub-Saharan Africa. *African Journal of Science, Technology, Innovation and Development*, **12**, 405-419. <https://doi.org/10.1080/20421338.2019.1656428>
- [8] Mwaniki, Z., Ngugi, P. and Nyang'au, S. (2022) Relationship Between Business Development Services and Growth of Small and Medium Enterprises in Kenya. *European Journal of Business and Strategic Management*, **7**, 1-14. <https://doi.org/10.47604/ejbsm.1480>
- [9] Wasiuzzaman, S., Nurdin, N., Abdullah, A.H. and Vinayan, G. (2020) Creditworthiness and Access to Finance of SMEs in Malaysia: Do Linkages with Large Firms Matter? *Journal of Small Business and Enterprise Development*, **27**, 197-217. <https://doi.org/10.1108/jsbed-03-2019-0075>
- [10] Maria Pagura, M.P. and Marié Kirsten, M.K. (2006) Formal—Informal Financial Linkages: Lessons from Developing Countries. *Enterprise Development & Microfinance*, **17**, 16-29. <https://doi.org/10.3362/0957-1329.2006.005>
- [11] Adane, M (2022) Assessment of Banks Lending Practice to Small and Medium Enterprise (SME) Case of Selected Banks Operating in Addis Ababa. Doctoral Dissertation, St. Mary's University.
- [12] Luo, S. (2020) Propagation of Financial Shocks in an Input-Output Economy with Trade and Financial Linkages of Firms. *Review of Economic Dynamics*, **36**, 246-269. <https://doi.org/10.1016/j.red.2019.10.004>
- [13] Muthoni, M.P., Mutuku, P.L.P. and Kamau, D.R.G. (2017) Influence of Loan Characteristics on Microcredit Default in Kenya: A Comparative Analysis of Microfinance Institutions and Financial Intermediaries. *IOSR Journal of Business and Management*, **19**, 39-59. <https://doi.org/10.9790/487x-1905043959>
- [14] Fleischman, T., Dini, P. and Littera, G. (2020) Liquidity-Saving through Obligation-Clearing and Mutual Credit: An Effective Monetary Innovation for SMEs in Times of Crisis. *Journal of Risk and Financial Management*, **13**, Article 295. <https://doi.org/10.3390/jrfm13120295>
- [15] Kamanga, P.J. and Mwaikambo, N. (2020) Challenges Facing Small and Medium Enterprises in Accessing the Credit Facilities of Micro-Financial Institutions in Tanzania. Jordan University College.
- [16] Nassoro, G. and Jaraj, K. (2022) Challenges Small and Medium Enterprises (SMEs) Face in Acquiring Loans from Commercial Banks in Tanzania. *African Journal of Business Management*, **16**, 74-81. <https://doi.org/10.5897/ajbm2021.9295>
- [17] Magembe, M.J. (2017) Effects of Corporate Governance on Loan Performance of Commercial Banks in Kenya. Ph.D Thesis, Nairobi University.
- [18] Mpofu, O. and Sibindi, A.B. (2022) Informal Finance: A Boon or Bane for African Smes? *Journal of Risk and Financial Management*, **15**, Article 270. <https://doi.org/10.3390/jrfm15060270>
- [19] Justus, G.M. (2023) The Drivers of Bank Credit Flow to Agro-Processing SMEs in Tanzania: The Supply Side Perspectives. Doctoral Dissertation, Universiti Tunku Abdul Rahman.
- [20] Akerlof, G.A. (1978) The Market for “Lemons”: Quality Uncertainty and the Market

- Mechanism. In: *Uncertainty in Economics*, Academic Press, 235-251.
- [21] Agarwal, R. and Sambamurthy, V. (2020) Principles and Models for Organizing the IT Function. In: *Strategic Information Management*, Routledge, 243-260. <https://doi.org/10.4324/9780429286797-11>
- [22] Berg, A. (2021) An Institutional Analysis of the Economics of Identity. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3956930>
- [23] Ishengoma, E.K. (2010) Financial-Linkages and Cost Efficiency: Lessons from Tanzanian Microfinance Cooperatives. *Business Management Review*, **14**, 1-22.
- [24] Chan-Lau, J.A., Espinosa, M., Giesecke, K. and Solé, J.A. (2009) Assessing the Systemic Implications of Financial Linkages. IMF Global Financial Stability Report.
- [25] Fitriasari, T. and Dalimunthe, Z. (2019) The Effectiveness of Linkage Programs: Case Study of BMTs in Indonesia. *International Journal of Business and Society*, **20**, S1.
- [26] Abbott, M.L. and McKinney, J. (2012) *Understanding and Applying Research Design*. Wiley.
- [27] Cochran, W.G. (1963) *Sampling Techniques*. 2nd Edition, Wiley.
- [28] Davino, C., Romano, R. and Vistocco, D. (2022) Handling Multicollinearity in Quantile Regression through the Use of Principal Component Regression. *Metron*, **80**, 153-174. <https://doi.org/10.1007/s40300-022-00230-3>
- [29] Peck, T.C., Sockol, L.E. and Hancock, S.M. (2020) Mind the Gap: The Underrepresentation of Female Participants and Authors in Virtual Reality Research. *IEEE Transactions on Visualization and Computer Graphics*, **26**, 1945-1954. <https://doi.org/10.1109/tvcg.2020.2973498>
- [30] Ishengoma, E.K. (2018) Entrepreneur Attributes and Formalization of Micro, Small and Medium Enterprises in Tanzania. *Journal of African Business*, **19**, 491-511. <https://doi.org/10.1080/15228916.2018.1472480>
- [31] Kariuki, M.I. (2018) Effect of Debt Literacy on the Indebtedness of Formal Sector Employees in Kenya. Doctoral Dissertation, Jomo Kenyatta University of Agriculture and Technology.
- [32] Le, N.T.B. and Nguyen, T.V. (2009) The Impact of Networking on Bank Financing: The Case of Small and Medium-Sized Enterprises in Vietnam. *Entrepreneurship Theory and Practice*, **33**, 867-887. <https://doi.org/10.1111/j.1540-6520.2009.00330.x>
- [33] Andersson, U., Cuervo-Cazurra, A. and Nielsen, B.B. (2019) Explaining Interaction Effects within and across Levels of Analysis. In: *JIBS Special Collections*, Springer, 331-349. [https://doi.org/10.1007/978-3-030-22113-3\\_16](https://doi.org/10.1007/978-3-030-22113-3_16)
- [34] Leroy, M.T. (2012) The Impact of Networking on Access to Finance and Performance of SMEs in the Buffalo City municipality, Eastern Cape, South Africa. An Unpublished Dissertation Submitted to the Faculty of Management and Commerce, University of Fort Hare.
- [35] Heshmati, N. (2013) The Impact of Networking on Access to Bank Finance for SMEs: Comparison of Iran and Sweden.
- [36] Gamage, P. (2011) An Empirical Investigation of Small and Medium Enterprises Access to Finance: The Case of an Emerging Economy. *18th Annual Conference*, Las Vegas, 22-27 February 2011, 255-273.
- [37] Megersa, K. (2020) Improving SMEs' Access to Finance through Capital Markets and Innovative Financing Instruments: Some Evidence from Developing Countries. <https://www.nse.co.ke/>
- [38] Nguyen, H.T., Nguyen, H.M., Troege, M. and Nguyen, A.T.H. (2020) Debt Aversion,

- Education, and Credit Self-Rationing in SMEs. *Small Business Economics*, **57**, 1125-1143. <https://doi.org/10.1007/s11187-020-00329-9>
- [39] Tabachnick, B. and Fidell, L. (2001) Using Multivariate Statistics, Allyn & Bacon, Needham Heights.
- [40] Chicco, D., Warrens, M.J. and Jurman, G. (2021) The Coefficient of Determination R-Squared Is More Informative than SMAPE, MAE, MAPE, MSE and RMSE in Regression Analysis Evaluation. *Peer J Computer Science*, **7**, e623. <https://doi.org/10.7717/peerj-cs.623>
- [41] Peugh, J. and Feldon, D.F. (2020) “How Well Does Your Structural Equation Model Fit Your Data?”: Is Marcoulides and Yuan’s Equivalence Test the Answer? *CBE—Life Sciences Education*, **19**, es5. <https://doi.org/10.1187/cbe.20-01-0016>
- [42] Ozili, P.K. (2023) The Acceptable R-Square in Empirical Modelling for Social Science Research. In: *Advances in Knowledge Acquisition, Transfer, and Management*, IGI Global, 134-143. <https://doi.org/10.4018/978-1-6684-6859-3.ch009>
- [43] Park, K., Rothfeder, R., Petheram, S., Buaku, F., Ewing, R. and Greene, W.H. (2020) Linear Regression. In: *Basic Quantitative Research Methods for Urban Planners*, Routledge, 220-269. <https://doi.org/10.4324/9780429325021-12>
- [44] Plonsky, L. and Ghanbar, H. (2018) Multiple Regression in L2 Research: A Methodological Synthesis and Guide to Interpreting R<sup>2</sup> Values. *The Modern Language Journal*, **102**, 713-731. <https://doi.org/10.1111/modl.12509>
- [45] Kar, A.K. and Dwivedi, Y.K. (2020) Theory Building with Big Data-Driven Research—Moving Away from the “What” towards the “why”. *International Journal of Information Management*, **54**, Article 102205. <https://doi.org/10.1016/j.ijinfomgt.2020.102205>
- [46] Weisburd, D., Wilson, D.B., Wooditch, A. and Britt, C. (2021) Multiple Regression. In: *Advanced Statistics in Criminology and Criminal Justice*, Springer, 15-72. [https://doi.org/10.1007/978-3-030-67738-1\\_2](https://doi.org/10.1007/978-3-030-67738-1_2)
- [47] Nieminen, P. (2022) Application of Standardized Regression Coefficient in Meta-Analysis. *BioMed Informatics*, **2**, 434-458. <https://doi.org/10.3390/biomedinformatics2030028>