

A Service of



Leibniz-Informationszentrum Wirtschaft Leibniz Information Centre

Tiriongo, Samuel; Njino, Roselyne; Mulindi, Hillary

Working Paper

Access to bank finance by MSMEs: Size and turnover effects

KBA Centre for Research on Financial Markets and Policy Working Paper Series, No. 86

Provided in Cooperation with:

Kenya Bankers Association (KBA), Nairobi

Suggested Citation: Tiriongo, Samuel; Njino, Roselyne; Mulindi, Hillary (2025): Access to bank finance by MSMEs: Size and turnover effects, KBA Centre for Research on Financial Markets and Policy Working Paper Series, No. 86, Kenya Bankers Association (KBA), Nairobi

This Version is available at: https://hdl.handle.net/10419/316412

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.





One Industry. Transforming Kenya.

WPS/01/25

Access to Bank Finance by MSMEs: Size and Turnover Effects

Dr. Samuel Tiriongo, Roselyne Njino and Hillary Mulindi March 2025

KBA Centre for Research on Financial Markets and Policy® Working Paper Series





One Industry. Transforming Kenya.

Working Paper Series

Centre for Research on Financial Markets and Policy

The Centre for Research on Financial Markets and Policy® was established by the Kenya Bankers Association in 2012 to offer an array of research, commentary, and dialogue regarding critical policy matters that impact on financial markets in Kenya. The Centre sponsors original research, provides thoughtful commentary, and hosts dialogues and conferences involving scholars and practitioners on key financial market issues. Through these activities, the Centre acts as a platform for intellectual engagement and dialogue between financial market experts, the banking sector and the policy makers in Kenya. It therefore contributes to an informed discussion that influences critical financial market debates and policies.

The Kenya Bankers Association (KBA) *Working Papers Series* disseminates research findings of studies conducted by the KBA Centre for Research on Financial Markets and Policy. *The Working Papers* constitute "work in progress" and are published to stimulate discussion and contribute to the advancement of the banking industry's knowledge of matters of markets, economic outcomes and policy. Constructive feedback on the *Working Papers* is welcome. *The Working Papers* are published in the names of the author(s). Therefore their views do not necessarily represent those of the KBA.

The entire content of this publication is protected by copyright laws. Reproduction in part or whole requires express written consent from the publisher.

© Kenya Bankers Association, 2025

Access to Bank Finance by MSMEs: Size and Turnover Effects

Dr. Samuel Tiriongo, Roselyne Njino and Hillary Mulindi

Abstract

Micro, Small and Medium-sized Enterprises (MSMEs) are crucial drivers of economic growth. In Kenya, MSMEs represent about 98 percent of all businesses and contribute over 30 percent to the GDP. Despite their essential role in the economy, these enterprises face substantial challenges in accessing bank finance, thereby hindering their growth and development. On this account, this study uses Kenya Bankers Association (KBA) Inuka Impact survey 2024 data with the propensity score matching and difference in difference analysis to examine the impact of banking sector's intervention program on MSMEs ability to access bank credit. The results shows that size and turnover are critical determinants of MSMEs access to finance, and while the interventions by the Inuka program have yielded some positive results, these efforts need to be extended beyond capacity building and training to achieve a stronger and more sustainable impact. Therefore, policies aimed at supporting MSMEs in Kenya should tailored to the distinct stages of MSMEs development, ensuring that interventions are diversified and comprehensive to drive meaningful outcomes in the economy.

01

1.0 Introduction

pivotal role in driving economic growth. In Kenya, MSMEs account for approximately 98 percent of all businesses and contribute over 30 percent to the GDP (KNBS, 2020; United Nations, 2023). Thus, validating MSMEs role in economic development, job creation, and poverty alleviation (Anginer et al., 2011; Griffith-Jones et al., 2017; de la Torre et al., 2017). However, despite their significant contribution to the economy, these enterprises face considerable challenges in accessing formal finance. The limited access to bank credit hampers their growth, sustainability, and overall contribution to the national economy.

This financing gap is especially pronounced for micro-enterprises, which often struggle to obtain formal credit due to their small size, lack of collateral, and limited credit history. In Kenya, approximately 70 percent of MSMEs report difficulties in accessing credit from formal financial institutions, on account of multifaceted reasons. First, many MSMEs operate informally, with around 80 percent of these enterprises not registered within the formal economy. This informality restricts their access to crucial financial services, including bank loans, and hinders their growth potential. Typically, informal enterprises lack the necessary documentation, financial records, and collateral that banks require, making it difficult for them to meet the strict lending criteria imposed by most financial institutions (KIPPRA, 2020).

Additionally, MSMEs face high-interest rates and stringent collateral requirements. For instance, banks require fixed assets, such as land or property, as collateral for loans. However, most MSMEs, especially micro-enterprises, do not possess these types of assets, which limits their ability to secure the necessary financing. The latter (lack of access to credit) not only stifles the growth of MSMEs but also limits their ability to contribute to the broader goals of economic development, such as employment generation and poverty reduction. Moreover, more than 75% of them dying within their first 3 years of operations (Ministry of Industrialization, Trade and Enterprise Development, 2020).

Figure 1: Government Interventions



Source: Authors illustration

To address these challenges, both the government and banking sector has undertaken initiatives to unlock MSMEs potential. From the government side, as seen in **Figure 1**, the focus has been on creating the requisite policy environment to allow credit flow to the MSMEs. While for the banking sector, they have leveraged on government's strides to implement the Inuka Enterprise capacity building program, which has been carefully designed to de-risk MSMEs to enhance their ability to access bank finance.

Launched in October 2018, The Inuka Enterprise Program was established to support micro, small, and medium enterprises (MSMEs) access finance from banks. The program operates through both an e-learning platform and face-to-face engagements, aligning its objectives with Kenya's national priorities.

The latter's objectives include transitioning informal businesses to formal ones, thereby increasing the number of formal enterprises in the country. Additionally, the program aims to foster business growth and job creation by helping business owners expand their companies, formalize employment practices, and create more employment opportunities.

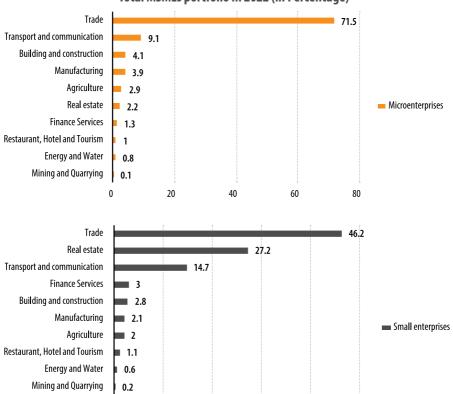
Moreover, the program also seeks to enhance access to finance and capital by making it easier for viable businesses to secure loans, let alone supporting businesses in value addition, product quality improvement, marketability, and regional or international reach. Lastly, the program is committed to creating equitable opportunities, ensuring that each county in Kenya has a success story stemming from the SME program.



While the Inuka Enterprise Program has achieved significant milestones—training over 70,000 MSMEs across all 47 counties and facilitating more than KES 3.2 billion in loans (KBA, 2024) —the MSME financing gap in Kenya remains a challenge. According to Central Bank of Kenya (2023) survey, only 74% of MSME loan applications were approved

by commercial banks and microfinance banks in 2020, rising slightly to 83% in 2021 and 2022. This gap becomes even more evident when examining loan approvals by sector, highlighting the ongoing barriers MSMEs face in securing the financing they need to thrive (**Figure 2**).

Figure 2: Credit to micro, small and medium enterprises to Total MSMEs portfolio in 2022 (in Percentage)

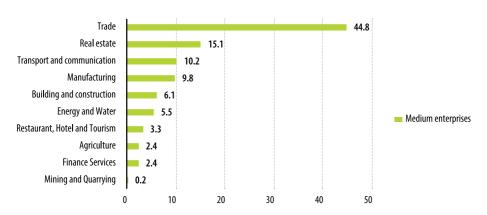


10

20

30

50



Source: CBK MSME Survey Data, 2022

These MSMEs are more affected by credit rationing than larger companies because decision making processes, transparency rules and dividing lines between company and personal assets are less defined for MSMEs than for larger companies. Thus, information asymmetries are more pronounced for small firms and the corresponding monitoring and screening costs are higher. As a consequence, MSMEs with potentially viable investment projects often cannot obtain the necessary financing from financial intermediation on a pure market basis (Beck and Demirguc-Kunt, 2006). On this account, this study sought to comprehensively evaluate the effectiveness of Inuka Program enabling MSMEs to access bank credit

For this purpose, the study uses Inuka survey data 2024, and it conceptualises the MSMEs journey in the program in three distinct phases. First, MSMEs are introduced to fundamental financial concepts and the importance of maintaining formal financial records to

enhance their creditworthiness. Second, they receive training on practical financial management, including budgeting, credit building, and developing a solid business plan, which demonstrates their ability to manage finances and mitigate risks. Third, MSMEs are prepared to engage with financial institutions by understanding available loan products, presenting their business plans and financial statements, and navigating the loan application process. They also learn post-loan management strategies, ensuring timely payments and maintaining strong relationships with banks for future credit access.

The paper is structured as follows: Section one serves as the introduction, Section two presents a literature review exploring both theoretical and empirical studies on MSMEs' access to bank financing, Section three details the data variables and methodology, Section four discusses the findings, and Section five concludes with key policy implications.

2.0 Literature Review

that a firm's ability to access credit changes with its size, age, and financial development. Smaller firms, in particular, face greater credit constraints due to higher levels of information asymmetry and transaction costs. This idea is reinforced by the Pecking Order Theory (Myers & Majluf, 1984), which highlights that smaller, less profitable firms often prioritize internal financing over external debt due to the risks associated with adverse selection. Credit Rationing Theory (Stiglitz & Weiss, 1981) complements these ideas by arguing that financial institutions frequently deny credit to certain firms, such as MSMEs, despite high demand, mainly due to their perceived higher risk and lack of sufficient collateral.

On its part, the financial intermediation theory sheds further light on how financial institutions play a crucial role in facilitating credit access by channelling funds between savers and borrowers. Effective financial intermediation—through better risk assessment and reduced transaction costs—can significantly enhance credit accessibility for small enterprises. Research by Diamond (1984) and Levine (1997) underscores that improved financial intermediation reduces the issues of information asymmetry and credit rationing, thereby enabling more efficient lending practices to smaller firms, ultimately easing their access to external funding.

From an empirical standpoint, studies consistently highlight the challenges MSMEs face in accessing bank finance, especially in developing countries. Beck et al. (2008) reveal that MSMEs are often excluded from formal banking due to stringent credit requirements. Similarly, Kira and He (2012) demonstrate that factors like firm size, profitability, and owner education significantly influence an MSME's ability to secure financing. This exclusion hampers the growth and survival of smaller firms, which struggle to meet the demands of traditional financial institutions

Research also underscores the importance of effective financial intermediation in improving MSMEs' access to credit. Beck, Demirgüç-Kunt, and Maksimovic (2005) analyzed data from over 70 countries and found that financial development is positively correlated with MSMEs' ability to obtain external finance. The study suggests that interventions such as enhanced risk assessment and reduced transaction costs can significantly increase credit availability for small enterprises. Such improvements allow MSMEs to fund their operations, innovate, and expand, driving economic growth.

Other studies focus on how reducing information asymmetry can alleviate credit rationing. Love and Mylenko (2003) found that credit information sharing systems in transition economies led to increased lending to MSMEs by lowering information gaps and adverse selection risks. Similarly, Galindo and Micco (2007) concluded that countries with well-developed credit information systems enjoy greater credit availability for small businesses. Empirical evidence from Ayyagari, Demirgüç-Kunt, and Maksimovic (2011) also shows that MSMEs with better access to external finance experience higher growth rates in sales and employment. Additionally, Bruhn and Love (2014) highlighted that financial inclusion initiatives, such as Mexico's large-scale bank expansion program, significantly improved credit access for MSMEs, driving higher business growth and income.

Despite extensive research on MSMEs' access to finance, significant gaps remain, particularly regarding the impact of targeted interventions on credit access and business growth, more so in Kenyan context.



3.0 Data, Variables and Methodology

3.1 Data Description and Overview of MSMEs Characteristics

his paper utilizes data from a survey conducted by the Kenya Bankers Association (KBA) Centre for Research on Financial Markets and Policy in collaboration with the Kenya National Chamber of Commerce and Industries in January 2024. The survey aimed to assess the effectiveness of the KBA Inuka Enterprise Program activities. Targeting 1,000 enterprises, the study achieved an impressive response rate of 88.6 percent, with 886 enterprises interviewed. A stratified sampling strategy was employed, focusing on county and gender of enterprise owners, ensuring the sample accurately reflected the diversity of MSMEs across sectors and geographical locations.

Descriptive analysis is presented at the onset to characterize the enterprises in terms of structure and access to finance. **Figure 3** illustrates the gender distribution between lnuka and non-lnuka enterprises, revealing similar ownership percentages for males and females. Notably, lnuka enterprises have a marginally higher percentage of female owners (45.5%) compared to non-lnuka enterprises (44.4%), indicating a slight edge in gender inclusivity within the program.

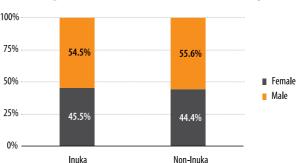
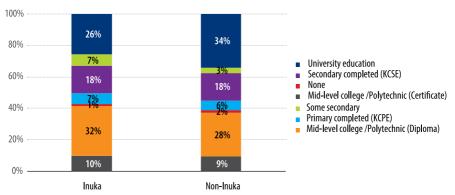


Figure 3: Gender of the owner of the enterprise

Figure 4: What is the highest level of education attained by enterprise owner



In terms of education level, majority of enterprise owners, both in Inuka and Non-inuka groups, have completed university education or possess a diploma from mid-level colleges (**Figure 4**). However, non-inuka enterprises have a slightly higher proportion of university graduates (34%) compared to Inuka enterprises (26%). However, Inuka participants seem to have more diverse education backgrounds, with a greater percentage having attained mid-level education compared to non-inuka owners. Non-inuka enterprise owners have a higher proportion of

university graduates.

By size, both Inuka and Non-inuka enterprises are predominantly micro-businesses (up to 10 employees) (**Figure 5**). The percentage of medium to large businesses is relatively small in both categories, with non-inuka enterprises having a slightly higher proportion of medium-sized businesses. The data confirms that the lnuka program has had a wide reach to the micro and small enterprises.

Figure 5: Enterprise category

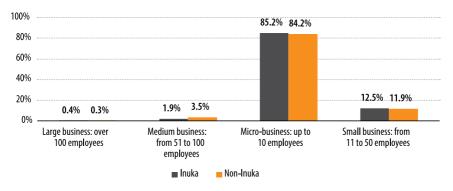
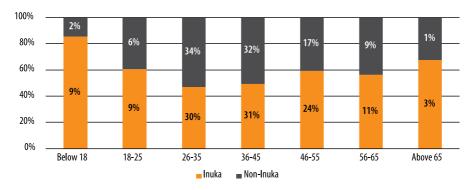




Figure 6: Age of enterprise owner (in years)

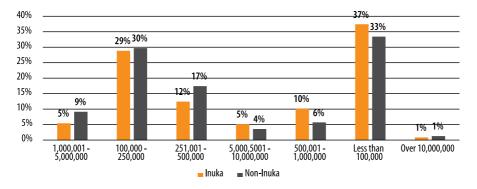


As depicted in **Figure 6**, the largest age group among enterprise owners is 26-35 years, followed by 36-45 years in both groups. A higher proportion of younger owners (below 18 years) are participating in the lnuka program compared to non-inuka (9 percent vs 2 percent). Evidently, lnuka program seems to have attracted relatively younger entrepreneurs, and this could possibly be attributed to the fact that the training program resonates with younger and less experienced business owners.

A significant proportion of businesses across both categories have an annual sales turnover of less than Ksh 100,000, with similar percentages between Inuka and Non-inuka enterprises (**Figure 7**).

Despite the support provided by the Inuka program, a majority of businesses are still within the lower revenue brackets, suggesting that long-term growth in revenue remains a challenge for both inuka and non-inuka enterprises.

Figure 7: Enterprise's estimated annual sales turnover in 2023



A large number of enterprises joined the Inuka program between 2020 and 2021(Figure 8), likely spurred by the COVID-19 pandemic as businesses sought support during tough times. Impressively, nearly all participants (98.72%) (Figure 9) indicated that they would recommend the program. Moreover, around 72% of businesses reported sales growth over the past five years (**Figure 10**), with Inuka enterprises slightly outperforming their non-Inuka counterparts (73 percent vs. 71 percent), indicating a positive impact from the program, although this could also reflect broader economic trends.

Figure 8: Year MSME joined INUKA KBA program

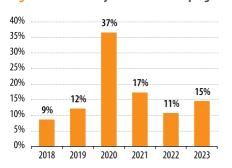
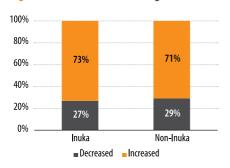


Figure 10: 5-Year trend in average sales



Evidently, **Figure 11** shows that short-term loans dominate the financing landscape, with 63 percent of businesses opting for loans under three months to meet immediate financial needs. Even shorter-term loans, under one month, are popular, with 51 percent of businesses relying on them. In contrast, long-term loans (over three months) are less common, chosen by just 34 percent of enterprises, likely due to higher risk or stricter requirements. Overdraft facilities are underutilized, with only 25 percent of businesses using them, while traditional credit remains the preference, as only 7 percent of enterprises explore alternative financing options.

Figure 9: Would you recommend INUKA Program?

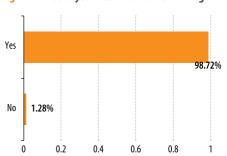
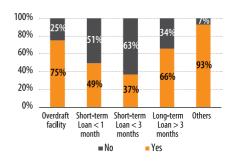


Figure 11: Types of loans accessed





3.2 Analytical Framework

To assess the impact of the Inuka Enterprise program, the study measures the difference in bank credit access between enterprises that participated in the KBA Inuka program and those that did not. To achieve this, the study adopts the Average Treatment Effect on the Treated (ATET) framework. This is calculated by comparing the outcomes of Inuka enterprises to a matched control group, that is, non-Inuka enterprises, using Propensity Score Matching (PSM), which helps address selection bias. According to Cameron and Trivedi (2005), PSM allows the creation of a control group that matches treated enterprises based on observable characteristics, making the treatment assignment as good as random. However, PSM only accounts for observable factors, and unobserved confounders, such as MSME-specific attributes, may bias the ATET estimates (Wooldridge, 2010). The key

assumptions include the Stable Unit Treatment Value Assumption (SUTVA), which assumes no interference between units, and the common trend assumption, which requires that, in the absence of treatment, treated and control enterprises would follow similar trends (Angrist & Pischke, 2009).

To mitigate the bias from unobserved confounders, the study employs a Difference-in-Differences (DID) approach, which helps control for time-invariant unobserved heterogeneity. DID, as highlighted by Wooldridge (2010), is effective in controlling for unobserved characteristics that could otherwise bias the results. The combination of PSM and DID provides a robust methodology for estimating the causal impact of the lnuka program on MSMEs' access to bank credit.

3.3 Econometric Model Specification

The regression model is specified as:

$$Y_i = \alpha + \beta_1 + Program_i + \beta_2 Time_i + \beta_3 DiD_i + \gamma X_i + \varepsilon_i$$

Where:

- lacksquare Y_{it} is the outcome variable (access to bank credit) for firm i
- *Program*_i is a dummy variable indicating participation in the lnuka program
- Time represents the time period when MSME has been in operation (before/after 2018 dynamics);
- DiD_i captures the difference-in-differences effect,
- \blacksquare X_i includes control variables (age, education level, industry, size and turnover),
- ε_i is the error term.

3.4 Operationalisation of Variables

Symbol	Name	Measurement				
Outcome Varia	Outcome Variables					
Y_{it}	Access to bank financing	Access to bank financing: Binary indicator (Yes/No).				
Treatment Va	iable					
Program _{it}	KBA Inuka Program Participation	KBA Inuka Program Participation: Binary indicator (Yes/No).				
Control Variab	les					
X_{1t}	Age of owner	Categorical variable, that is Below 25, 26 — 35, 36 -45, 46 -55, 56 -65 and above 65 years				
X_{2t}	Education level of owner	Categorical variable, that is Primary, Secondary, Middle-level Tertiary and University				
X_{3t}	Industry	Categorical variable that is, Agriculture, Energy, Trade, Services, Building and construction, ICT and Manufacturing.				
X_4t	Size	Categorical variable, that is micro enterprises, Small enterprises and Medium to large enterprises				
X_{5t}	Turnover	Categorical variable, that is Less than kes 100,000; Kes 100,000 to 250,000; Kes 250,001 to 500,000; Kes 500,001 to 1,000,000 and over kes 1,000,000				

3.5 Estimation Strategy

The study followed a two-step approach. It began by constructing the counterfactual control sample using the Propensity Score Matching (PSM) method and then applied the Difference-in-Differences (DiD) regression model to control for potential confounding variables. Propensity Score Matching (PSM) was employed to pair Inuka MSMEs (treated group) with

similar firms that did not participate in the Inuka program (Non-Inuka MSMEs/ Control group). A probit regression was estimated to determine the probability of being selected for treatment, utilizing key variables such as turnover, age, education, industry, and gender, which influence both selection and outcomes (Cameron & Trivedi, 2005). After estimating the propensity scores, treated and untreated enterprises were matched using nearest neighbor matching



with one neighbor, a method that pairs each treated MSME with an untreated counterpart with a similar propensity score, thereby facilitating a more accurate comparison of treatment effects (Wooldridge, 2010).

Subsequently, the study employed a Difference-in-Differences (DiD) approach to estimate the Average Treatment Effect on the Treated (ATET) using the PSM-matched sample of treated and control MSMEs. The key assumption underlying this approach is that, in the absence of treatment, both treated and control firms would have followed parallel trends over time (Angrist & Pischke, 2009). The DiD model was extended to include additional covariates such as age, education, industry, size and turnover to estimate the impact of the lnuka program.

4.0 Findings and Discussions

4.1 Baseline Model

he baseline model (Table 1) reveals that the KBA Inuka program has a coefficient of 0.058, but this result is statistically insignificant, suggesting that the program's overall impact on MSMEs' access to bank credit is limited. However, the significance of enterprise-specific attributes such as age, size, and turnover highlights their crucial role in determining credit access. This aligns with findings by Beck et al. (2008), who emphasize that MSMEs often face challenges in accessing formal credit due to factors like stringent banking requirements. Kira and He (2012) further corroborate that attributes such as firm size and profitability play pivotal roles in securing finance, underscoring the importance of these characteristics in credit decisions. The limited significance of the Inuka program in this model might reflect broader structural barriers MSMEs face in financial markets, where bank credit is often inaccessible to smaller firms due to their inability to meet formal credit criteria, as observed by Beck et al. (2008).

Table 1: Baseline Results

	All MSMEs
Program	0.058 (0.66)
Time	0.111 (1.25)
DID	-0.043 (-0.40)
Ages	
Below 25	0.275** (2.32)
26 - 35	0.355*** (4.53)
36 -45	0.296*** (4.22)



		AII MSMEs
	46 -55	0.273*** (3.63)
	56 -65	0.244** (2.64)
Edu	cation	
	Primary	0.004 (0.03)
	Middle-level Tertiary	0.005 (0.07)
	University	-0.015 (-0.20)
Ind	ustry	
	Agriculture	-0.021 (-0.10)
	Energy	0.233 (0.70)
	Services	0.074 (0.35)
	Building and construction	0.131 (0.54)
	ICT	-0.046 (-0.18)
	Manufacturing	0.098 (0.42)
Size	1	
	Micro	0.273** (2.09)
	Small	0.051 (0.42)
Turi	nover	
	Less than kes 100,000	-0.013 (-0.12)
	Kes 100,000 to 250,000	0.033 (0.34)

		AII MSMEs
К	Kes 250,001 to 500,000	-0.187** (-1.73)
K	Kes 500,001 to 1,000,000	0.063 (-1.73)
Constant		0.708** (2.99)

Significance: *** 1%, ** 5% and * 10%. T-ratios in parenthesis. Reference group: Age- Above 65, Education- Secondary, Sector - Trade, Turnover — Over 1 million, Size- medium to large, Turnover- Greater than Kes 1,000,000

4.2 Heterogeneity by MSME Size

When analyzing the program's effect by MSME size (**Table 2**), the data shows a stronger positive, though statistically insignificant, impact on micro-enterprises (0.083) compared to small enterprises (0.022). This suggests that smaller firms might benefit more from the program, albeit modestly. However, the limited impact of the program on small and micro-enterprises reflects the findings of Beck, Demirgüç-Kunt, and Maksimovic (2005), who highlight that financial

development and institutional improvements, such as reduced transaction costs and better risk assessment, are critical in enhancing credit access for smaller firms. For medium to large enterprises, the program's impact was not estimable due to limited number of observations. Moreover, there is a significant sector variation in access to bank finance with trade sector evidently preferred.

Table 2: Results Disaggregated according to MSME Size

	Micro enterprises	Small enterprises	Medium-Large enterprises
Program	0.083 (0.68)	0.022 (0.10)	-
Time	0.177 (1.27)	-0.070 (-0.50)	-
DID	-0.101 (-0.66)	0.015 (0.08)	



		Micro enterprises	Small enterprises	Medium-Large enterprises				
Ages	Ages							
	Below 25	0.326** (2.55)	-0.030 (-0.08)	- -				
	26 - 35	0.395*** (4.60)	0.361 (1.30)	- -				
	36 -45	0.325*** (4.27)	0.244 (0.96)	- -				
	46 -55	0.354*** (4.29) **	-0.040 (-0.15)	- -				
	56 -65	0.336 (2.88)	0.267 (1.27)	- -				
Educati	ion							
	Primary	0.017 (0.14)	-0.128 (-0.44)	- -				
	Middle-level Tertiary	-0.016 (-0.21)	0.068 (0.35)	- -				
	University	-0.025 (-0.29)	0.182 (0.87)	- -				
Industr	у							
	Agriculture	-0.054 (-0.19)	-0.632** (-2.63)	- -				
	Energy	0.173 (0.37)	- -	- -				
	Services	0.122 (0.43)	-1.099*** (-5.34)	- -				
	Building and construction	0.196 (0.59)	-1.283*** (-3.56)	- -				
	ICT	0.039 (0.10)	-1.382*** (-4.62)	- -				
	Manufacturing	0.151 (0.50)	-1.128*** (-3.94) ***	- -				

		Micro enterprises	Small enterprises	Medium-Large enterprises
Turnove	r			
	Less than kes 100,000	-0.097 (-0.65)	0.144 (0.42)	- -
	Kes 100,000 to 250,000	-0.027 (-0.18)	-0.102 (-0.52)	- -
	Kes 250,001 to 500,000	-0.256 (-1.69)	-0.240 (-1.01)	- -
	Kes 500,001 to 1,000,000	-0.001 (-0.00)	-0.107 (-0.40)	- -
Constant		0.957** (2.81)	1.891*** (0.524)	-

Significance: *** 1%, ** 5% and * 10%. T-ratios in parenthesis. Reference group: Age- Above 65, Education- Secondary, Sector - Trade, Turnover — Over 1 million, Size- medium to large, Turnover- Greater than Kes 1,000,000

4.3 **Heterogeneity by Turnover**

The analysis by turnover (Table 3) reveals that the Inuka program, a KBA intervention, has varying impacts on MSMEs access to finance across different revenue categories. Enterprises with turnover between Ksh 100,000 and 250,000 benefit significantly from the program, while those with higher turnovers of 500,000 to 1 million face constraints. This inverted U-curve relationship suggests that the program is more effective at addressing financial needs of midtier MSMEs but becomes less supportive as turnover increases, potentially due to pecking order dynamics.

Additionally, within turnover categories, sectoral differences are evident, with trade enterprises receiving less credit at lower turnovers (Ksh 100,00 - 500,000) but gaining more access as turnover rise (Ksh 500,000 - 1 million), likely reflecting the role of cashflow stability in credit allocation. These findings align with existing literature on financial intermediation and MSMF credit. For instance, Beck et al. (2005) demonstrated that financial development enhances credit availability for smaller enterprises with moderate revenues by improving risk assessment and reducing transaction costs.

The observed benefits for mid-tier turnover MSMEs may also stem from improved information systems. Studies by Love and Mylenko (2003) and Galindo and Micco (2007) highlight how robust credit information systems reduce information asymmetry and adverse selection, facilitating better access to finance. These mechanisms could explain why enterprises in the middle turnover range experience greater program efficacy compared to their lower or higher turnover counterparts.



Furthermore, the program's impact underscores the importance of tailoring financial interventions to the specific needs of MSMEs across turnover levels. Ayyaqari et al. (2011) found that MSMEs with better access to external finance experience higher growth in sales and employment, emphasizing the significance of financial inclusion in driving enterprise success.

Table 3: Results disaggregated according to MSME Annual Turnover

		Turnover Less than Kes 100,000	Turnover from Kes 100,000 to 250,000	Turnover from Kes 250,001 to 500,000	Turnover from Kes 500,001 to 1,000,000	Turnover greater than Kes 1,000,000
Program		-0.199 (-0.62)	0.363* (1.93)	0.014 (0.08)	-0.569** (-2.35)	-0.225 (-0.79)
Time		-0.042 (-0.12)	0.321** (2.03)	0.233 (1.57)	0.147 (0.38)	-0.016 (-0.06)
DID		0.205 (0.58)	-0.442** (-2.11)	-0.16 (-0.08)	-0.016 (-0.04)	0.113 (0.31)
	Below 25	0.370** (2.25)	0.205 (0.65)	0.377 (0.90)	1.659*** (5.14)	-0.701 (-1.55)
	26 - 35	0.353** (3.09)	0.466 (2.14) **	0.331 (1.37)	0.843** (2.68)	-0.089 (-0.30)
Ages	36 -45	0.316** (2.88)	0.330 (1.62)	0.361* (1.98)	0.632* (2.10)	0.133 (0.49)
	46 -55	0.358** (2.68)	0.325 (1.54)	0.055 (0.36)	- -	-0.113 (-0.39)
	56 -65	0.221 (1.19)	0.326 (1.55)	0.187 (1.15)	0.560 (1.51)	0.309 (0.78)
Education	Primary	-0.202 (-1.17)	0.171 (0.85)	-0.094 (-0.90)	0.589 (1.26)	-
	Middle-level Tertiary	0.007 (0.06)	-0.163 (-1.16)	0.162 (1.23)	0.378 (1.37)	0.161 (0.62)
	University	0.061 (0.43)	-1.115 (-0.59)	0.161 (0.96)	0.246 (0.69)	-0.478 (-1.70)

		Turnover Less than Kes 100,000	Turnover from Kes 100,000 to 250,000	Turnover from Kes 250,001 to 500,000	Turnover from Kes 500,001 to 1,000,000	Turnover greater than Kes 1,000,000
	Agriculture	-0.017 (-0.07)	0.723** (3.09)	0.259 (1.31)	-1.476** (-3.42))	-0.146 (-0.51)
	Energy	- -	1.054** (2.57)	- -	- -	0.013 (0.06)
la desatare	Services	-0.056 (-0.21)	0.792** (3.83)	0.549 (2.58)	-1.791*** (-5.53)	-0.029 (-0.11)
Industry	Building and construction	-	0.716** (2.04)	1.362*** (6.40)	-	-0.092 (-0.34)
	ICT	-0.108 (-0.27)	- -	1.001*** (3.96)	-2.479** (-3.76)	-0.013 (-0.07)
	Manufacturing	0.462 (1.43)	0.632** (2.35)	0.102 (0.49)	-1.718*** (-5.04)	-0.314 (-0.61)
Size	Micro	-0.654*** (-4.09)	0.292 (1.34)	0.277 (1.57)	0.325 (1.52)	0.363 (1.35)
	Small	-0.508 (-1.57)	0.079 (0.35)	-	-	0.094 (0.035)
Constant	1.769*** (4.00)	-0.152 (-0.34)	-0.002 (-0.01)	1.998*** (4.79)	1.571*** (4.28)	

Significance: *** 1%, ** 5% and * 10%. T-ratios in parenthesis. Reference group: Age- Above 65, Education- Secondary, Sector - Trade, Turnover — Over 1 million, Size- medium to large, Turnover- Greater than Kes 1,000,000

5.0 Conclusions and Policy Implications

his study provides evidence that size and turnover are critical determinants of MSMEs access to finance, underscoring the need for tailored approaches in addressing their financial challenges. Notably, MSMEs in the trade sector are perceived significantly differently from those in other sectors across varying turnover levels, further emphasizing the importance of sector-specific considerations.

While interventions by the Kenya Bankers Association (KBA) to support SME access to credit have yielded some positive results, these efforts need to be extended beyond capacity building and training to achieve a stronger and more sustainable impact. Therefore, policies aimed at supporting MSMEs in Kenya should avoid a uniform approach and instead consider the distinct stages of MSMEs development, ensuring that interventions are diversified and comprehensive to drive meaningful outcomes in the economy.

References

- Anginer, D., Demirgüç-Kunt, A., & Zhu, M. (2011). How does deposit insurance affect bank risk? Evidence 1. from the recent crisis. The World Bank
- Ayyagari, M., Demirgüç-Kunt, A., & Maksimovic, V. (2011). Small vs. young firms across the world: 2. Contribution to employment, job creation, and growth. The World Bank.
- Beck, T., & Demirgüç-Kunt, A. (2006). Small and medium-size enterprises: Access to finance as a growth 3. constraint. *Journal of Banking & Finance*, 30(11), 2931–2943.
- Beck, T., Demirgüç-Kunt, A., & Maksimovic, V. (2005). Financial and legal constraints to firm growth: Does 4. firm size matter? *The Journal of Finance*, 60(1), 137–177.
- Beck, T., Demirguc-Kunt, A., & Maksimovic, V. (2008). Financing Patterns Around the World: Are Small 5. Firms Different? Journal of Financial Economics, 89(3), 467-487.
- Berger, A. N., & Udell, G. F. (1998). The Economics of Small Business Finance: The Roles of Private Equity and 6 Debt Markets in the Financial Growth Cycle. *Journal of Banking & Finance*, 22(6-8), 613-673.
- Bruhn, M., & Love, I. (2014). The real impact of improved access to finance: Evidence from Mexico. *The* 7. Journal of Finance, 69(3), 1347-1376.
- 8. Cameron, A. C., & Trivedi, P. K. (2005). *Microeconometrics: Methods and applications*. Cambridge University Press
- Central Bank of Kenya. (2023). Micro, small and medium enterprises (MSME) survey 2023. Central Bank of 9 Kenya.
- de la Torre, A., Ize, A., & Schmukler, S. L. (2017). Banking in Africa: Delivering on financial inclusion, growth, and sustainability. The World Bank.
- 11. Diamond, D. W. (1984). Financial intermediation and delegated monitoring. *The Review of Economic* Studies, 51(3), 393-414.
- Galindo, A., & Micco, A. (2007). Creditor protection and financial markets: Empirical evidence and implications for Latin America. *Economic Policy*, 22(51), 431–468.
- 13. Griffith-Jones, S., Marodon, R., & Ocampo, J. A. (2017). Financing sustainable development: The role of development banks. Institute of Development Studies.



- 14. Kenya Bankers Association (2024). *Inuka Impact Evaluation Report 2024*. KBA
- 15. Kenya Institute for Public Policy Research and Analysis. (2020). *Kenya economic report 2020: Creating an enabling environment for inclusive growth in Kenya*. KIPPRA.
- 16. Kenya National Bureau of Statistics. (2020). Economic survey 2020
- 17. Kira, A. R., & He, Z. (2012). The Impact of Firm Characteristics in Access of Financing by Small and Medium-sized Enterprises in Tanzania. *International Journal of Business and Management*, 7(24), 108–119.
- 18. Levine, R. (1997). Financial development and economic growth: Views and agenda. *Journal of Economic Literature*, 35(2), 688–726.
- 19. Love, I., & Mylenko, N. (2003). *Credit reporting and financing constraints*. The World Bank.
- 20. Ministry of Industrialization, Trade and Enterprise Development. (2020). Sessional Paper No. 5 of 2020 on Kenya Micro, and Small Enterprises Policy For Promoting Micro and Small Enterprises (MSEs) for Wealth and Employment Creation. Nairobi: Kenya National Assembly.
- 21. Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187–221.
- 22. Organisation for Economic Co-operation and Development. (2006). *The SME financing gap (Vol. I): Theory and evidence*. OECD Publishing.
- 23. Stiglitz, J. E., & Weiss, A. (1981). Credit Rationing in Markets with Imperfect Information. *American Economic Review*, 71(3), 393–410.
- 24. United Nations. (2023). *Policy guidelines for the formalization of micro-, small and medium-sized enterprises.* United Nations.
- 25. Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data (2nd ed.)*. MIT Press.

