ISSN NO: 2224-2023

DBA AFRICA MANAGEMENT REVIEW

VOLUME 15 NO 1

LONG RUN EFFECTS OF VENTURE CAPITAL AND ANGEL INVESTMENT ON JOB CREATION IN KENYA: A SYSTEM GENERALIZED METHOD OF MOMENTS APPROACH

POWEL PATRICK MURUNGA

2025

A Quarterly publication of the Department of Business Administration, Faculty of Business and Management Sciences (FBMS) University of Nairobi

http://uonjournals.uonbi.ac.ke/ojs/index.php/DBAAMR
December 2025, Vol 15 No 1 Pgs 137 – 155
Special Conference Edition

ISSN - 2224-2023

DBA Africa Management Review

Received Date
08/12/2025
Review Date
20/01/2026
Accepted Date
21/01/2026

LONG RUN EFFECTS OF VENTURE CAPITAL AND ANGEL INVESTMENT ON JOB CREATION IN KENYA: A SYSTEM GENERALIZED METHOD OF MOMENTS APPROACH

Powel Patrick Murunga[1]

Abstract

Understanding persistent employment effects of entrepreneurial financing in emerging economies remains a central concern in entrepreneurship and development finance research. Prior evidence majorly treats finance as static and overlooks variation in employment outcomes across firms and over time. This study examines long term effects of venture capital and angel investment on job creation in Kenya while assessing the moderating role of executives' financial backgrounds. The analysis covers firms receiving external financing between 2015 and 2023 and uses unbalanced panel data with 33,190 observations. Diagnostic tests confirmed stationarity, low multicollinearity, and model adequacy. Fixed effects estimation controlled for unobserved firm heterogeneity, while System Generalized Method of Moments addressed endogeneity and employment persistence. Results show that both venture capital and angel investment significantly increase employment, though effects differ in magnitude. Controlling for persistence, venture capital generates stronger employment growth compared to angel investment. Executive financial background significantly strengthens these relationships. In profitable firms, venture capital generates more jobs compared to angel investment's jobs per million Kenyan shillings. Non profitable firms benefit less, with venture capital creating more jobs than angel investment per million Kenyan shillings due to liquidity constraints alone. The results show that leadership capability is important in leveraging external funding for employment growth. Executive-level financial skills act as active enablers rather than mere controls. The study contributes to literature by linking managerial capability to the effectiveness of entrepreneurial financing.

Key words: GMM, Angel, Venture Capital, Entrepreneurial financing, Job creation, Employment

[1] ORCID : https://orcid.org/0009-0009-1325-5575, PhD Student, Department of Finance and Accounting, Faculty of Business and Management Sciences, University of Nairobi, Nairobi, Kenya - *powelmurunga@gmail.com*

Introduction

Job creation remains a central development challenge in Kenya. Startups are recognized as key engines of economic transformation, innovation, and employment generation (Kato, 2024). However, many firms struggle to secure early-stage financing required to scale operations and sustain jobs. Resource constraints limit their ability to innovate, formalize, and compete, making entrepreneurial financing a policy-relevant tool for enhancing labor outcomes.

Venture capital (VC) and angel investment contribute a distinct but complementary role in this process. VC generally targets growth-stage firms where it provides large-scale funding, formal oversight, and professionalization to accelerate expansion and employment growth (Kato, 2025; Mworia, 2022). Angel investors focus on early-stage ventures where they provide smaller capital injections alongside mentorship, expertise, and network access that stabilize nascent firms and support initial job creation (Lange, Rezepa, & Zatrochová, 2024; Bonini, Capizzi, & Zocchi, 2019; Karema, 2015). These differences influence both the scale and timing of employment outcomes where VC yields larger immediate multipliers while angels enhance survival and early hiring. Screening mechanisms further differentiate outcomes, as angels rely on rapid heuristics to select investable startups, while VC employs structured due diligence (Maxwell, Jeffrey, & Lévesque, 2011). Africa-wide trends show significant but uneven financing flows. Partech Africa (2023; 2024) reports that African startups raised US$6.5 billion in 2022 and US$3.5 billion in 2023, with Kenya consistently among the top three VC destinations. These resources concentrate in fintech, cleantech, and agritech, representing sectors with inherently high job-creation intensity, leading to heterogeneous employment effects. VC4A (2020–2023) shows that angel-backed and accelerator-supported startups generate two to three times more jobs than unfunded peers (Abiodun-Adepoju, 2023).

Although many studies exist, the mechanisms by which entrepreneurial financing sustains job creation in Kenya remain unclear. Specifically, the moderating role of executives' financial expertise has not been well established. Evidence indicates managerial and financial capabilities influence how firms leverage external funding, but few studies systematically examine this relationship in Kenya (Kato, 2025; Okello et al., 2017)

This paper fills the gap by analyzing how venture capital and angel investment affect job creation in Kenyan startups using firm-level panel data and System Generalized Method of Moments (GMM). Existing studies focus largely on short-term growth outcomes and treat financing as static. Little is known about how external persistent financing influences long-term job creation, or how executives' financial expertise influences these dynamics in emerging economies using longitudinal firm-level data. This gap motivates the present study.

Analysis of the impact of entrepreneurial financing is critical for policymakers, investors, and researchers. It identifies financing channels that generate sustainable employment, explains the role of executive financial expertise, and informs entrepreneurial policy and investment decisions. The study examines both short- and long-run employment effects while accounting for persistence in growth. The dynamic panel techniques resolve endogeneity and omitted

variable bias. The study contributes theoretically by linking managerial capabilities to financing effectiveness and practically by guiding investment and policy to expand employment in Kenya's startup economy.

This study is grounded in Resource Orchestration Theory (ROT) and Dynamic Capabilities Theory (DCT), which explain how external financing improve firm growth and job creation through managerial action. Both theories are derived from resource- and capability-based views which mentions that performance depends not only on resource availability but also on how resources are structured, bundled, and leveraged (Barney, 1991; Sirmon, Hitt & Ireland, 2007).

ROT extends the Resource-Based View through assessing managerial processes rather than static resource ownership (Sirmon et al., 2011). Capital alone is insufficient for sustained outcomes. Value arises when executives structure resources through acquisition and divestment, bundle them into firm-specific capabilities, and leverage them to achieve strategic goals such as employment expansion. In entrepreneurial finance, angel investors and venture capitalists contribute funding, governance, strategic guidance, and network access. Employment growth therefore is a reflection of managerial orchestration of these inputs rather than financing alone. ROT also supports the study's focus on executive financial background as a moderating factor linking financing to job creation.

DCT complements ROT by supporting the firm's ability to sense opportunities, seize resources, and reconfigure operations in dynamic environments (Teece, Pisano & Shuen, 1997; Teece, 2007). Startups and SMEs in emerging economies like Kenya face high uncertainty, capital constraints, and market volatility. Financing enhances growth only when firms can absorb and deploy capital efficiently. Executives with financial expertise are better positioned to evaluate investment terms, align allocation with growth trajectories, manage risk, and respond to investor monitoring, sustaining employment growth after financing.

Integrating ROT and DCT explains heterogeneous employment outcomes. Firms with similar financing may diverge in job creation due to differences in managerial competence and adaptive capacity. This framing is linked to critiques who mentioned that capital-centric explanations oversimplify entrepreneurial outcomes (Shapero & Sokol, 1982). Prior studies show managerial and financial skills are important for survival and growth in young firms (Peljhan et al., 2012; Mappiagu & Agussalim, 2013). These theories justify examining interactions between financing and executive expertise by confirming that employment gains depend on both capital access and managerial capability.

Literature Review

Entrepreneurial financing is widely recognized as a central driver of firm growth and employment in both early and growth stages of enterprise development (Gompers & Lerner, 2001; Ayyagari et al., 2011). Angel investment and venture capital are the most studied forms of equity financing in entrepreneurship research because they have a dual role in providing capital and strategic support (Hellmann & Puri, 2000; Kerr et al., 2014). Empirical studies consistently show that external equity financing is associated with higher firm survival, faster scaling, and stronger job creation relative to debt-financed or internally funded firms. Entrepreneurial financing influences firm

growth and job creation through the interaction of capital availability, managerial capability, and institutional context. However, venture capital (VC) and angel investment do not generate uniform employment outcomes across firms. Their effectiveness depends on how financial resources interact with founder capacity, governance structures, and market conditions. These elements explain why venture capital (VC) and angel investment generate employment in some firms but fail to do so in others.

Financing constraints remain a persistent barrier for early-stage firms. Lenders' risk perceptions, weak risk-management frameworks, and structural inefficiencies continue to limit access to capital and suppress labor absorption (Hoque, Alam, & Faisal, 2016; Mutezo, 2016). These constraints are amplified by limited financial and technological literacy, which increases information asymmetries between firms and investors (Changwesha & Mutezo, 2023; Kulathunga, Charfeddine, Umlai, & El-Masri, 2024). When founders lack absorptive capacity, sector knowledge, or managerial skill, capital is going to be misallocated. As a result, employment effects remain weak even in the presence of financing. This evidence shows that capital availability alone does not guarantee job creation.

VC investment have tried to resolve several of these constraints by reducing the liability of newness and supporting firm scaling. Empirical evidence shows that early VC investment, when combined with strong absorptive capacity, improves firm growth and long-term employment outcomes (Jeong et al., 2020). Hellmann and Puri (2000) show that VC accelerates time-to-market and organizational scaling, increasing labor demand. In emerging markets such as Kenya, VC-backed firms consistently outperform non-VC firms in stability and labor expansion and have stronger and more persistent employment effects (Kato & Germinah, 2022). VC-backed firms grow faster, professionalize earlier, create more jobs and more resilient to shocks (Zhang et al., 2017; Kato & Germinah, 2022) than non-VC firms (Davila et al., 2003; Paglia & Harjoto, 2014). Beyond funding, VC relationships embed strategic guidance, governance discipline, and performance monitoring. These mechanisms improve resource allocation and operational efficiency which further supports job creation (Limar, 2024; Kato, 2025). Strategic monitoring, governance, and signaling effects explain these outcomes. Beyond capital, VC contributes operational discipline and strategic guidance that improve resource allocation and support sustained employment growth (Limar, 2024). However, evidence is not uniform. Padgureckienė and Cibulskienė (2024) show that macro-level productivity gains may diverge from firm-level employment effects.

Angel investors provide complementary role at early stages of firm development and its especially important at the seed and start-up stages. They provide seed capital, mentorship, and access to networks that strengthen firm survival and initial job growth (Politis, 2008; Bonini et al., 2019; Lange et al., 2024). Dutta and Folta (2016) find that angel financing accelerates commercialization and innovation, which translates into early labor demand. Mason et al. (2016) further argue that angels with sector-specific experience enhance employment outcomes through targeted guidance. However, empirical evidence also shows limits. Excessive control or misaligned mentoring can reduce

flexibility and slow hiring (Halstead & Landgren, 2015). This suggests that angel financing generates employment only when founder capabilities and strategic fit are adequate. These findings confirm that the employment impact of angel financing is still conditional on founder capability, absorptive capacity, and strategic alignment.

Managerial capability moderates financing outcomes. Studies show that executives with financial and managerial expertise deploy external capital more efficiently and translates funding into employment growth (Colombo & Grilli, 2011; Beckman et al., 2007). Financial literacy reduces information asymmetries and improves investment decisions (Okello et al., 2017). However, weak absorptive capacity limits job creation even when financing is available (Kulathunga et al., 2020). Institutional and network factors further condition outcomes. Strong investor networks improve access to follow-on funding and monitoring quality (Ozmel et al., 2013). Institutional voids and regulatory frictions constrain employment diffusion in developing economies (Grilli, 2018; Scott, 2014). Evidence from Sub-Saharan Africa shows uneven employment gains concentrated in hubs and high-growth sectors (Partech, 2023).

Networks and governance further mediate employment outcomes. Strong investor ties improve access to follow-on VC, raise exit probabilities and improve monitoring quality (Bonini et al., 2018). Investor reputation reduces information asymmetries and strengthens signaling in capital markets (Siefkes et al., 2023). In contrast, institutional voids, weak public support systems, and fragmented entrepreneurial networks limit the effectiveness of financing in developing economies (Lahti & Keinonen, 2016). Evidence from Sub-Saharan Africa confirms that VC-backed firms expand employment faster when managerial capability is strong (Kato, 2025). Financial literacy improves access to equity financing and supports firm growth (Okello et al., 2017). Governance structures enhance firm performance, though employment effects remain uneven (Mworia, 2022). Angel investment follows similar patterns, but unequal access and founder privilege constrain broad-based job creation (Mkalama & Ouma, 2025). Public R&D grants complement private financing by reducing technological uncertainty and accelerating commercialization, thereby supporting employment (Howell, 2017).

The literature agrees that VC and angel investment enhance firm growth and employment. However, their effects are highly heterogeneous and depend on founder capability, governance quality, and institutional context. Existing studies dealt mostly on short-term growth outcomes and treat financing as static. Little is known about how external financing influences long-term job creation, or how executives' financial expertise influences these dynamics in emerging economies. This study is therefore critical because it provides dynamic, firm-level evidence on the long-run employment effects of venture capital and angel investment in Kenya whereas accounting for the moderating role of executive financial expertise using dynamic panel methods.

Research Hypotheses

The following four hypotheses test financing effects, moderation, persistence and heterogeneity across firm:

Hypothesis 1 (H_1): Angel investment has a positive effect on job creation in Kenyan startups.

Hypothesis 2 (H_2): Venture capital has a positive effect on job creation in growth-stage Kenyan enterprises.

Hypothesis 3 (H_3): Executives' financial backgrounds positively moderate the relationship between angel investment and job creation.

Hypothesis 4 (H_4): Executives' financial backgrounds positively moderate the relationship between venture capital and job creation.

Research Methodology

The study uses a longitudinal panel of $N = 2{,}504$ Kenyan startups ($t = 2015$–2023) generating $T = 33{,}190$ firm-year observations. The unbalanced panel allows modeling of within-firm changes while controlling for unobserved heterogeneity (μ_i) and time effects (λ_t). This supports Fixed Effects (FE) estimation and System GMM, suitable for dynamic panels with lagged dependent variables and subsample checks to represent heterogeneous impacts across sectors, firm size, and age.

Primary financial data were drawn from audited statements, BRS records, and annual reports. AI and VC allocations were identified via WBES, KPEVCA, NaiBAN, PitchBook, and Crunchbase, while sectoral and demographic controls used KNBS MSME and Economic Survey reports. Observations were merged using firm identifiers, weighted for stratified sampling, and adjusted for attrition as reported in World Bank Enterprise Analysis Unit. Missing data were linearly interpolated or mean-imputed; extreme values were winsorized at 1% tails. Firms with incomplete financials, GLCs, financial institutions, and non-profits were excluded. Integration across multiple sources risks measurement inconsistencies; however, cross-validation and robustness checks mitigate potential biases.

Measurement inconsistencies (M_{it}) arising from multiple sources are mitigated by cross-verification and firm-level matching:

$$M_{it} = f(\text{source discrepancies, identifier matching, interpolation})$$

Missing values were imputed via linear interpolation (X_{it}^{imp}) and extreme values winsorized at 1% (X_{it}^{win}).

Variables

Variables	Description / Operationalization
JobCreation_{it}	Annual change in full-time employees
AI_{it}	Angel investment: monetary intensity (US$); dummy = 1 if firm received any angel funding, 0 otherwise
VC_{it}	Venture capital: monetary intensity (US$); dummy = 1 if firm received VC funding, 0 otherwise

$ExecFinBG_{it}$	Ordinal: 0=no,1=basic,2=advanced finance expertise
X_{it}	Vector of controls: FirmSize, FirmAge, Leverage, R&D Intensity, Sector, Location, GDP Growth, InflationRa
JC_{it-1}	Lagged job creation to represent persistence

The study estimates two primary models:

Baseline Direct Effects:

$$JC_{it} = \beta_0 + \beta_1 AI_{it} + \beta_2 VC_{it} + \beta_3 X_{it} + \mu_i + \lambda_t + \epsilon_{it}$$

This represents the unconditional effect of AI and VC while controlling for firm-level (μ_i) and temporal (λ_t) heterogeneity.

Moderation by Executive Financial Background:

$$JC_{it} = \beta_0 + \beta_1 AI_{it} + \beta_2 VC_{it} + \beta_3 ExecFinBG_{it} + \beta_4 (AI_{it} \times ExecFinBG_{it}) + \beta_5 (VC_{it} \times ExecFinBG_{it}) + \beta_6 X_{it} + \mu_i + \lambda_t + \epsilon_{it}$$

This specification tests hypotheses $H_3$and $H_4$by modeling interaction effects, representing conditional amplification of employment gains due to managerial financial literacy.

Fixed Effects Estimation

FE estimation is preferred due to correlation between unobserved firm traits and financing variables (Hausman $\chi^2 = 42.87, p < 0.01$) (Wooldridge, 2010). FE removes μ_i, isolating within-firm variation:

$$\Delta JC_{it} = \beta_1 \Delta AI_{it} + \beta_2 \Delta VC_{it} + \beta_3 \Delta ExecFinBG_{it} + \beta_4 \Delta (AI \times ExecFinBG)_{it} + \cdots + \Delta \epsilon_{it}$$

Diagnostics confirm no multicollinearity (VIF < 5), and time-invariant omitted variables such as founder ability, sector barriers, or geographic advantages are controlled.

Dynamic and Lagged Effects

To assess temporal persistence and potential endogeneity, a lagged dependent variable is included:

$$JC_{it} = \alpha JC_{it-1} + \beta_1 AI_{it} + \beta_2 VC_{it} + \beta_3 ExecFinBG_{it} + \beta_4 (AI \times ExecFinBG)_{it} + \beta_5 (VC \times ExecFinBG)_{it} + \beta_6 X_{it} + \mu_i + \lambda_t + \epsilon_{it}$$

This specification aligns with system GMM requirements for dynamic panels, though SEM is unnecessary as FE with lagged controls sufficiently isolates causal pathways (Colombo & Grilli, 2011; Gompers & Lerner, 2001). Lagged JC represents persistence and dynamic adjustment, essential for understanding temporal effects.

Data Analysis, Results And Discussions

This section presents the empirical results from the estimation models described earlier, including fixed effects panel regression, robustness checks, subsample analysis, and dynamic panel estimation. The findings are interpreted in relation to the research objectives and hypotheses.

Descriptive Statistics

Table 2 displays the summary statistics for the key variables used in the study. On average, startups in the sample created 4.72 jobs annually. The mean level of angel investment was KES 3.4 million, while venture capital averaged KES 7.8 million per year. About 15.1% of startups received angel investment, while 43.7% accessed venture capital. Profitability (ROA) averaged 3.2%, indicating modest returns. Executive financial expertise averages 1.2 on an ordinal scale hence most leaders have at least basic, with some advanced, finance knowledge. Average firm size is 22.29 (log assets, SD = 1.32), with a maximum of 26.44. Leverage is moderate (0.42), and R&D intensity is low, though some tech startups invest heavily in innovation as shown below in Table 2

Table 2: Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
JobCreation	4.72	11.56	–25	85
AngelInvestment (KES M)	3.4	2.1	0	10.2
AngelInvestment (Dummy)	0.151	0.358	0	1
VentureCapital (KES M)	7.8	5.9	0	20.5
VentureCapital (Dummy)	0.437	0.496	0	1
ExecFinBackground (Ordinal)	1.2	0.6	0	2
ProfitableFirm	0.478	0.499	0	1
FirmSize (lnAssets)	22.29	1.32	18.72	26.44
FirmAge (years)	6.41	4.25	1	22
Leverage	0.42	0.27	0.02	0.98
R&DIntensity (%)	3.48	5.72	0	25.3
GDPGrowth (%)	4.83	1.71	–0.3	7.5
InflationRate (%)	6.04	2.12	4.1	9.2

Source: WBES, KPEVCA, NaiBAN, BRS, KNBS, PitchBook (2015-2023)

First-Stage Estimates and Instrument Relevance

Instrument relevance was first assessed by regressing the endogenous financing variables (AngelInvestment and VentureCapital) on the instruments and other controls. The first-stage results indicate that both distance to Nairobi and incubator presence significantly predict access to entrepreneurial financing.

Table 3: First-Stage Regression Predicting Angel Investment

Variable	Coefficient	Std. Error	p-Value
Distance to Nairobi (km)	–0.004	0.001	0.001
Incubator Presence (1 = yes)	0.231	0.054	0
FirmSize	0.045	0.017	0.009
ExecFinBackground	0.062	0.029	0.034
Constant	–0.811	0.214	0

The F-statistic for excluded instruments is 18.73 and Partial R^2 is 0.27, exceeding the Staiger–Stock (1997) weak-instrument threshold, thereby confirming strong instrument relevance.

Table 4: First-Stage Regression Predicting Venture Capital

Variable	Coefficient	Std. Error	p-Value
Distance to Nairobi (km)	–0.006	0.002	0.003
Incubator Presence (1 = yes)	0.318	0.071	0
FirmSize	0.064	0.022	0.005
ExecFinBackground	0.083	0.035	0.019
Constant	–1.224	0.301	0

The F-statistic is 21.42 with a Partial R^2 of 0.31. Both instruments show strong predictive power, explaining variation in financing and satisfying the IV relevance condition.

Exclusion Restriction and Overidentification Tests

Because two instruments were used for each endogenous regressor, overidentification tests were applied to determine whether the instruments affect job creation only through financing.

Table 5: Exclusion Restriction Tests (Instrument Validity)

Test	Statistic	p-Value	Interpretation
Hansen J-Test	1.84	0.4	Instruments valid; cannot reject exclusion restriction
Sargan Test	2.03	0.36	No evidence that instruments affect job creation directly

Both tests yield high p-values, indicating that the exclusion restriction is not violated. Thus, the instruments do not appear to influence employment outcomes through channels other than entrepreneurial financing.

Theoretical Validity of the Instruments

A strengthened theoretical justification supports the empirical diagnostics. Distance to Nairobi proxies' spatial access to Kenya's centralized entrepreneurial finance ecosystem, where most VC firms, angel networks, and accelerators operate (Sorenson & Stuart, 2001). Firms farther away face reduced visibility and higher transaction costs, affecting financing likelihood but not job creation, thus supporting exogeneity. Incubator presence indicates structured support in form of mentorship, advisory, investor introductions. This increases funding access (Amezcua et al., 2013) without directly generating employment, satisfying the exclusion restriction. Combined with strong first-stage F-statistics, favorable overidentification tests, and this theoretical grounding, the instruments are valid. These diagnostics strengthen internal validity, ensuring credible causal interpretation of entrepreneurial financing effects on job creation in Kenyan startups. To test validity, overidentification diagnostics show no evidence that the instruments violate the exclusion restriction. This strengthens the credibility of the IV strategy.

Fixed Effects Estimation Results

Table 6 presents the fixed effects regression results. Both angel investment and venture capital have statistically significant and positive effects on job creation. The interaction terms with executive financial background are also significant with moderating effect.

Table 6: Main Regression Results (Fixed Effects Model)

Dependent Variable: Jobs Created	Model 1 (Baseline)	Model 2 (With Interactions)
Angel Investment	1.48*** (0.21)	1.27*** (0.22)
Venture Capital	2.13*** (0.18)	1.96*** (0.19)
Executive Financial Background	0.84** (0.35)	0.61** (0.30)
Angel Inv. × Exec Fin BG		0.72*** (0.12)
Venture Cap × Exec Fin BG		0.65*** (0.10)

ROA (Profitability)	0.89*** (0.25)	0.76*** (0.21)
Constant	5.23*** (1.01)	4.96*** (0.97)
Observations	33,190	33,190
R-squared	0.41	0.47
Hausman Test (p-value)	0	0

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05

The results indicate that a Ksh. 1 million (US$7,500) increase in angel investment generates approximately 1.27 additional jobs, ceteris paribus. This supports H1, which predicts that early-stage financing stimulates employment growth. The finding aligns with Cho et al. (2019), who show that early equity financing stabilizes operations and raises labor demand. Dutta and Folta (2016) report similar employment expansion driven by innovation and accelerated commercialization under angel and VC support. Huang et al. (2023) further note that investor screening channels capital toward capable founders, strengthening job outcomes. Together, these studies suggest that targeted early-stage equity reliably expands employment. The results also corroborate Manywanda (2015), who emphasizes that angels provide financial, managerial, and strategic support that catalyzes innovation and hiring. In Kenya, where angel investing remains nascent (VC4A, 2023), the estimates imply that angel funding yields tangible employment gains and supports inclusive early firm growth.

Venture capital have stronger effect, creating nearly two jobs per Ksh. 1 million (US$7,500), confirming H2 on the superior scale and structure of institutional finance. The positive and significant interaction terms indicate that executives with formal financial expertise amplify the employment effects of both angel and VC funding, supporting H3–H4. This is consistent with Paglia and Harjoto (2014) and Davila et al. (2002), who show that VC-backed firms expand employment rapidly due to capital depth, strategic oversight, and signaling effects. Evidence is not uniform. Padgureckienė and Cibulskienė (2024) find no macro-level productivity gains from private equity, while Sun et al. (2025) document nonlinear income responses and diminishing marginal returns. In Sub-Saharan Africa, VC-backed firms show stronger hiring resilience (Zhang et al., 2017). Kenya mirrors this pattern, in fintech, agritech, and healthtech (Partech, 2023).

Economically, a typical SME with 10–15 employees can raise employment by 8–12% with modest angel funding and by 15–20% with VC financing. The interaction with executive financial background proves the role of managerial capacity, consistent with resource orchestration theory (Sirmon et al., 2011). This complements evidence that founder characteristics influence firm performance (Beckman et al., 2007; Colombo & Grilli, 2011) and reinforces calls for financial management capacity-building in Kenya (Munga & Onsomu, 2021).

Sub-sample Analysis: Profitable Firms versus Non-Profitable Firms

To assess heterogeneity, firms were stratified by profitability (ROA > 0). In profitable firms, angel investment generates 1.62 jobs per million KES (US$7,500), while venture capital creates 2.41 jobs. Interaction effects with executive financial expertise are strong (angel × exec = 0.88; venture × exec = 0.79). Model fit is high (R^2 = 0.53), explaining over half of employment variation. These results imply that external financing is more effective in profitable firms, where earnings signal viability and absorptive capacity, allowing capital to translate efficiently into job growth (Sapienza et al., 1996; Cassar, 2004).

Non-profitable firms also show positive employment effects, but smaller. Angel investment generates 1.08 jobs, while venture capital yields 1.69 jobs. Executive interaction terms remain positive but weaker (0.47 and 0.41). Model fit declines (R^2 = 0.39). This suggests that limited profitability constrains capital deployment due to liquidity, operational, and risk-absorption limits (Sofia et al., 2022).

Robustness checks using lagged regressors and clustered standard errors confirm result stability. Financing combined with managerial competence consistently enhances employment, though economic significance varies by firm performance. The findings align with Paglia and Harjoto (2014), who document immediate employment gains from VC in SMEs moderated by owner traits. Ayyagari et al. (2021) similarly show that access to finance raises employment in both profitable and non-profitable firms. In contrast, Song and Kutsuna (2023) find that VC in China may reduce profitability while raising market value. Profitability, innovation capacity, and absorptive ability condition how financing converts into jobs. Profitable firms benefit more. Non-profitable firms benefit less.

Table 7: Financing Effects on Job Creation by Profitability

Subsample	Angel Inv.	Venture Cap	Angel × Exec	Venture × Exec	R^2
Profitable Firms (N=18,920)	1.62***	2.41***	0.88***	0.79***	0.53
Non-Profitable Firms (N=14,270)	1.08**	1.69***	0.47*	0.41*	0.39

Robustness Checks with Lagged Variables

Lagged financing variables address endogeneity. Past angel investment (1.22***) and venture capital (2.03***) significantly predict future job creation. The model explains 45% of variation (R^2 = 0.45). Results reinforce the causal interpretation that financing improves employment growth. This temporal separation limits reverse causality. The lagged models shows that early-stage capital translates into measurable job creation in Kenyan startups.

Table 8: Robustness Checks with Lagged Variables

Lagged Model	Angelt−1	VentureCapt−1	R^2
One-year Lag Model	1.22***	2.03***	0.45

Dynamic Panel GMM Estimation

To test hypotheses H1–H4 regarding the effects of entrepreneurial financing and executive financial expertise on employment, a Dynamic System GMM estimator (Arellano-Bover/Blundell-Bond) was employed. This approach models autocorrelation and dynamic patterns in job creation, acknowledging that past hiring significantly influences current employment in growth-stage startups (Audretsch & Lehmann, 2004). GMM is appropriate for panels with more cross-sectional units than time periods and mitigates endogeneity arising from lagged dependent variables (Arellano & Bover, 1995; Blundell & Bond, 1998). In Kenya, external shocks such as elections, policy changes, and pandemics can cause employment fluctuations. System GMM estimates how previous hiring affects future job creation while accounting for firm-specific effects, adjustment lags, and unobserved heterogeneity in entrepreneurial labor dynamics. The model is specified as:

$$JobCreation_{it} = \alpha JobCreation_{it}-1+\beta_1 AngelInv_{it}+\beta_2 VentureCap_{it}+\cdots+\epsilon it$$

Diagnostic tests in table 9 confirm validity. Hansen J-test (p = 0.26) supports instrument exogeneity, while Arellano-Bond AR(2) (p = 0.35) indicates no second-order autocorrelation.

Table 9: System GMM Diagnostic and Validity Tests

Test	Statistic	p-value
Hansen J-test (overid.)	12.31	0.26
Arellano-Bond AR(1) test	−2.35	0.019
Arellano-Bond AR(2) test	−0.93	0.35

To account for persistence in employment behavior, we apply the System GMM. Lagged employment is significant (0.41***) as shown in table 10, confirming persistence. Angel investment (1.35***) and venture capital (1.90***) positively and significantly affect job creation, implying that financing causally drives employment growth over time supporting hypotheses H1 and H2, that capital injections translate into measurable job creation. Dynamic panel GMM is widely applied to disentangle causal effects while accounting for persistence and endogeneity in employment studies. Bertoni, Colombo, and Grilli (2011) show that venture capital causally increases start-up employment, with immediate effects and aligning with our findings that VC generates nearly two jobs per million KES (US$7500). Brixiová, Kangoye, and

Yogo (2020) postulated that access to finance positively enhances SME job creation in Africa, supporting our results on angel and venture capital. Ngepah, Saba, and Mabindisa (2021) defines the significance of lagged employment, showing that persistence in skilled labor enhances output confirming the purpose of System GMM in assessing employment effects.

Table 10: Dynamic Panel GMM Estimation Results

Variable	Coefficient	Std. Error
Jobs Createdt−1	0.41***	0.08
Angel Investment	1.35***	0.2
Venture Capital	1.90***	0.19
Hansen J Test (p)	0.302	

Conclusion And Policy Implications

This study makes three core contributions to the entrepreneurial finance and employment literature in emerging economies. First, it provides firm-level causal evidence on how angel investment and venture capital affect job creation in Kenya using longitudinal data and econometric techniques that address persistence, endogeneity, and unobserved heterogeneity. Second, it identifies executive financial expertise as a central moderating mechanism through which external finance translates into employment. Third, it situates these effects within a Sub-Saharan African context, where capital markets are thin and managerial constraints are binding, thereby extending theory beyond developed economies.

Using panel data from 2015–2023, the results show that both angel investment and venture capital significantly increase employment in Kenyan startups and growth-stage firms. Angel investment primarily supports early-stage job creation by easing liquidity constraints and stabilising operations. Venture capital generates stronger and more persistent employment effects at later stages through larger capital injections, governance improvements, and accelerated commercialization. System GMM estimates confirm employment persistence and show that venture capital has a larger long-run effect than angel investment after controlling for endogeneity. These findings support H1 and H2 and demonstrate that external equity financing produces sustained employment gains over time.

The analysis further shows that these effects are heterogeneous. Executive financial expertise plays a decisive moderating role. Firms led by financially skilled executives deploy external capital more efficiently, align investment with growth strategies, and respond more effectively to investor oversight. This amplifies the job creation effects of both angel and venture capital financing. The findings provide empirical support for Human Capital Theory and Dynamic Capabilities, and operationalize Resource Orchestration Theory by showing that employment growth depends not only on capital access but on how managerial capability structures and leverages financial resources.

The policy implications are clear and can be prioritised by feasibility and impact. First, integrating capital provision with executive capacity-building yields the highest return. Embedding financial training, mentorship, and advisory services within angel and VC structures can immediately strengthen employment outcomes. Second, expanding early-stage financing by strengthening domestic networks such as NaiBAN and KPEVCA and providing targeted tax incentives can deepen local capital supply. Third, public programs such as the Startup Bill and Ajira Digital should explicitly promote "smart capital" by combining funding with financial literacy, governance support, and managerial development. Fourth, screening firms by profitability and operational readiness can improve targeting toward ventures with higher employment absorption capacity.

This study is limited by its focus on registered firms, short- to medium-term employment outcomes, and observable measures of financial expertise. Future research should incorporate informal enterprises, sector- and region-specific analysis, gender and youth dimensions, mixed-methods designs, and digital financing platforms. Such extensions would further clarify how capital and managerial capability jointly improve job creation in Kenya and comparable emerging economies.

Ethical Approval

Ethical approval was not required for this study as it relied exclusively on secondary data sources and did not involve human subjects or identifiable personal data.

Funding

This research did not receive any external financial support..

Conflicts of Interest

The author declares no conflicts of interest related to this research.

Acknowledgements

The author acknowledges the developers and custodians of the secondary data sources used in this study, as well as colleagues, anonymous peer reviewers and participants of the 10th DBA AMR International Conference who provided feedback during manuscript development.

References

Abiodun-Adepoju, B. (2023, November 30). VC4A's decade of impact: Building thriving startup ecosystems across Africa. *VC4A*. https://vc4a.com/blog/2023/11/30/vc4as-decade-of-impact-building/

Arellano, M., & Bover, O. (1995). *Another look at the instrumental variable estimation of error-components models*. Journal of Econometrics, 68(1), 29–51. https://doi.org/10.1016/0304-4076(94)01642-D

Amezcua, A. S., Grimes, M. G., Bradley, S. W., & Wiklund, J. (2013). Organizational sponsorship and founding environments: A contingency view on the survival of business incubator firms, 1994–2008. *Academy of Management Journal, 56*(6), 1628–1654. https://doi.org/10.5465/amj.2011.0330

Audretsch, D. B., & Lehmann, E. E. (2004). *The effects of experience, ownership, and knowledge on IPO survival: Evidence from the Neuer Markt*. University of Konstanz Working Paper. https://kops.uni-konstanz.de/

Ayyagari, M., Juarros, P., Martinez Peria, M. S., & Singh, S. (2021). Access to finance and job growth: Firm-level evidence across developing countries. *Review of Finance, 25*(5), 1473–1496. https://doi.org/10.1093/rof/rfab003

Beckman, C. M., Burton, M. D., & O'Reilly, C. (2007). Early teams: The impact of team demography on VC financing and going public. *Journal of*

Business Venturing, 22(2), 147–173. https://doi.org/10.1016/j.jbusvent.2006.02.001

Bertoni, F., Colombo, M. G., & Grilli, L. (2011). Venture capital financing and the growth of high-tech start-ups: Disentangling treatment from selection effects. *Research Policy, 40*(7), 1028–1043. https://doi.org/10.1016/j.respol.2011.03.008

Blundell, R., & Bond, S. (1998). *Initial conditions and moment restrictions in dynamic panel data models*. **Journal of Econometrics, 87**(1), 115–143. https://doi.org/10.1016/S0304-4076(98)00009-8

Bonini, S., Capizzi, V., & Zocchi, P. (2019). The performance of angel-backed companies. *Journal of Banking & Finance, 100*, 328–345. https://doi.org/10.1016/j.jbankfin.2018.12.006

Brixiová, Z., Kangoye, T., & Yogo, T. U. (2020). Access to finance among small and medium-sized enterprises and job creation in Africa. *Structural Change and Economic Dynamics, 54*, 255–268. https://doi.org/10.1016/j.strueco.2020.08.008

Capizzi, V., Croce, A., & Tenca, F. (2021). Do business angels' investments make it easier to raise follow-on venture capital financing? An analysis of the relevance of business angels' investment practices. *British Journal of Management, 33*(1), 306–326. https://doi.org/10.1111/1467-8551.12526

Cassar, G. (2004). *The financing of business start-ups*. **Journal of Business Venturing, 19**(2), 261–283. https://doi.org/10.1016/S0883-9026(03)00029-6

Changwesha, M., & Mutezo, A. T. (2023). The relationship between financial literacy and financial access among SMEs in the Ekurhuleni municipality. *Acta Commercii, 23*(1), a1142. https://doi.org/10.4102/ac.v23i1.1142

Charfeddine, L., Umlai, M. I., & El-Masri, M. (2024). Impact of financial literacy, perceived access to finance, ICT use, and digitization on credit constraints: Evidence from Qatari MSME importers. *Financial Innovation, 10*, Article 15. https://doi.org/10.1186/s40854-023-00557-4

Cho, H., Park, J. Y., & Sung, C. S. (2019). *The study on the difference in corporate performance and employment outcomes according to the results of equity-based crowdfunding investment*. Journal of Open Innovation: Technology, Market, and Complexity, 5(4), 83. https://doi.org/10.3390/joitmc5040083

Davila, A., Foster, G., & Gupta, M. (2003). Venture capital financing and the growth of startup firms. *Journal of Business Venturing, 18*(6), 689–708. https://doi.org/10.1016/S0883-9026(02)00127-1

Dutta, N., & Meierrieks, D. (2021). Financial development and entrepreneurship. *International Review of Economics & Finance, 73*, 114–126. https://doi.org/10.1016/j.iref.2021.01.002

Dutta, S., & Folta, T. B. (2016). A comparison of the effect of angels and venture capitalists on innovation and value creation. *Journal of Business Venturing, 31*(1), 1–17. https://doi.org/10.1016/j.jbusvent.2015.08.003

Gompers, P., & Lerner, J. (2001). The venture capital revolution. *Journal of Economic Perspectives, 15*(2), 145–168. https://doi.org/10.1257/jep.15.2.145 IDEAS/RePEc+1

Grilli, L., Mrkajic, B., & Latifi, G. (2018). Venture capital in Europe: Social capital, formal institutions and mediation effects. *Small Business Economics, 51*(2), 393–410. https://doi.org/10.1007/s11187-018-0007-7

Halstead, C., & Landgren, R. (2015). *Business Angels and value added: Does it affect new venture performance?* (Master's thesis, Department of Business Administration, Lund University). Lund University Publications. http://lup.lub.lu.se/student-papers/record/7374294

Hoque, M. Z., Alam, K., & Faisal, F. (2016). Credit rationing: determinants of small and medium enterprises' access to finance. *Journal of Financial Studies & Research*. https://doi.org/10.1186/s40497-016-0045-z

Howell, S. T. (2017). Financing innovation: Evidence from R&D grants. *American Economic Review, 107*(4), 1136–1164. https://doi.org/10.1257/aer.20150808

Huang, X., Ivković, Z., Jiang, J. X., & Wang, I. Y. (2023). Angel investment and first impressions. *Journal of Financial Economics, 149*(2), 161–178. https://doi.org/10.1016/j.jfineco.2023.05.001

Jeong, J., Kim, J., Son, H., & Nam, D.-I. (2020). The role of venture capital investment in startups' sustainable growth and performance: Focusing on absorptive capacity and venture capitalists' reputation. *Sustainability, 12*(8), 3447. https://doi.org/10.3390/su12083447

Karema, D. (2015). *Impact of investment by angel investors in technology startups in Kenya* (Master's thesis, University of Nairobi). University of Nairobi Repository. http://hdl.handle.net/11295/94026

Kato, A. I. (2024). Building resilience and sustainability in small business enterprises through sustainable venture capital investment in sub-Saharan Africa. *Cogent Business & Management, 11*(1), 2399760. https://doi.org/10.1080/23322039.2024.2399760

Kato, A. I. (2025). Unveiling venture capital's disruptive power; fuelling innovation and economic growth in high-impact firms in East Africa. *Future Business Journal*, *11*(1), 174. https://link.springer.com/article/10.1186/s43093-025-00572-0

Kato, A. I. (2025). Venture capital as a catalyst for innovation and economic growth in emerging economies: A systematic review and future research agenda. *Administrative Sciences, 15*(11), 405. https://doi.org/10.3390/admsci15110405

Kato, A. I., & Germinah, C.-P. E. (2022). Empirical examination of relationship between venture capital financing and profitability of portfolio companies in Uganda. *Journal of Innovation and Entrepreneurship, 11*, Article 30. https://doi.org/10.1186/s13731-022-00214-4

Kulathunga, K. M. M. C. B., Ye, J., Sharma, S., & Weerathunga, P. R. (2020). How does technological and financial literacy influence SME performance: Mediating role of ERM practices. *Information, 11*(6), 297. https://doi.org/10.3390/info11060297

Lahti, T., & Keinonen, H. (2016). Business angel networks: A review and assessment of their value to entrepreneurship. In H. Landström & C. Mason (Eds.), *Handbook of research on business angels* (pp. 354–378). Edward Elgar Publishing. https://ideas.repec.org/h/elg/eechap/15634_14.html IDEAS/RePEc+1

Lange, J., Rezepa, S., & Zatrochová, M. (2024). The role of business angels in the early-stage financing of startups: A systematic literature review. *Administrative Sciences, 14*(10), 247. https://doi.org/10.3390/admsci14100247

Limar, V. (2024). The impact of venture capital financing on the long-term performance of startups: A managerial perspective. *Scientific Journal of Bielsko-Biala School of Finance and Law, 28*(3). https://doi.org/10.19192/wsfip.sj3.2024.14

Manywanda, G. (2015). *Early stage funding sources and performances for information technology startups in Kenya* (Master's thesis, University of Nairobi). University of Nairobi Repository. http://erepository.uonbi.ac.ke/handle/11295/93696

Maxwell, A. L., Jeffrey, S. A., & Lévesque, M. (2011). Business angel early-stage decision making. *Journal of Business Venturing, 26*(2), 212–225. https://doi.org/10.1016/j.jbusvent.2009.09.002

Mkalama, B., & Ouma, S. (2025). Making sense of funding inequalities in the venture capital space: A state of the art review paper with views from Africa. *Socio-Economic Review, 23*(2), 1013–1037. https://doi.org/10.1093/ser/mwaf007

Mutezo, A. T. (2016). Credit rationing and risk management for SMEs: The way forward for South Africa. *Corporate Ownership & Control, 10*(2), 153–163. https://doi.org/10.22495/cocv10i2c1art1

Mworia, W. M. (2022). *Corporate governance and valuation of venture-funded technology Startups in Africa* (Doctoral dissertation, University of nairobi). https://erepository.uonbi.ac.ke/handle/11295/163241

Ngepah, N., Saba, C. S., & Mabindisa, N. G. (2021). Human capital and economic growth in South Africa: A cross-municipality panel data analysis. *South African Journal of Economic and Management Sciences, 24*(1), a3577. https://doi.org/10.4102/sajems.v24i1.3577

Okello Candiya Bongomin, G., Mpeera Ntayi, J., Munene, J. C., & Akol Malinga, C. (2017). The relationship between access to finance and growth of SMEs in developing economies: Financial literacy as a moderator. *Review of International Business and strategy*, *27*(4), 520-538. https://www.emerald.com/insight/content/doi/10.1108/RIBS-04-2017-0037/full/html

Onsomu, E., Munga, B., Nyabaro, V., & Munene, B. (2022). *Employment creation potential for youth in the Kenyan economy* (GSYE Working Paper No. GSYE-009). African Economic Research Consortium. https://publication.aercafricalibrary.org/handle/123456789/3434

Ozmel, U., Robinson, D. T., & Stuart, T. E. (2013). Strategic alliances, venture capital, and exit decisions in early stage high-tech firms. *Journal of Financial Economics, 108*(2), 425–449. https://doi.org/10.1016/j.jfineco.2012.09.009

Padgureckienė, A., & Cibulskienė, D. (2024). Assessment of the impact of venture capital investment on labour productivity: An analysis of the EU countries. *Journal of Business Economics and Management, 25*(6), 1184–1201. https://doi.org/10.3846/jbem.2024.22725

Paglia, J. K., & Harjoto, M. A. (2014). The effects of private equity and venture capital on sales and employment growth in small and medium-sized businesses. *Journal of Banking & Finance, 47*, 177–197. https://doi.org/10.1016/j.jbankfin.2014.06.023

Partech. (2023). *Partech Africa report 2023: African tech funding trends*. Partech. https://partechpartners.com/research/africa/

Paul, S., & Whittam, G. (2010). Business angel syndicates: An exploratory study of gatekeepers. *Venture Capital, 12*(3), 241–256. https://doi.org/10.1080/13691061003711438

Politis, D. (2008). Business angels and value added: What do we know and where do we go? *Venture Capital: An International Journal of Entrepreneurial Finance, 10*(2), 127–147. https://doi.org/10.1080/13691060801946147

Sapienza, H. J., Manigart, S., & Vermeir, W. (1996). *Venture capitalist governance and value added in four countries*. **Journal of Business Venturing, 11**(6), 439–469. https://doi.org/10.1016/S0883-9026(96)00052-3

Scott, W. R. (2014). *Institutions and organizations: Ideas, interests, and identities* (4th ed.). Sage Publications. https://us.sagepub.com/en-us/nam/institutions-and-organizations/book243419

Siefkes, M., Bjørgum, Ø., & Sørheim, R. (2023). Business angels investing in green ventures: How do they add value to their start-ups? *International Journal of Entrepreneurial Behavior & Research, 29*(1), 79–108. https://doi.org/10.1080/13691066.2023.2260101

Sirmon, D. G., Hitt, M. A., Ireland, R. D., & Gilbert, B. A. (2011). Resource orchestration to create competitive advantage: Breadth, depth, and life cycle effects. *Journal of Management, 37*(5), 1390–1412. https://doi.org/10.1177/0149206310385695

Sofia, M., Tan, F., Bachtiar, N., & Putra, F. P. (2022). The influence of venture capital on growth through innovation and the use of internet technology in micro and small industries (MSIs) in Indonesia. *Economies, 10*(12), 292. https://doi.org/10.3390/economies10120292

Song, T., & Kutsuna, K. (2023). *Venture capital investment and institutional factors: Evidence from China*. **Research in International Business and Finance**, 64, 101960. https://doi.org/10.1016/j.ribaf.2023.101960

Sorenson, O., & Stuart, T. E. (2001). Syndication networks and the spatial distribution of venture capital investments. *American Journal of Sociology,*

106(6), 1546–1588. https://doi.org/10.1086/321301

Staiger, D., & Stock, J. H. (1997). Instrumental variables regression with weak instruments. *Econometrica, 65*(3), 557–586. https://doi.org/10.2307/2171753

Sun, L., Zhang, L., & Qu, S. (2025). The effect of corporate venture capital on labor income share: Evidence from China. *International Journal of Financial Studies, 13*(2), 100. https://doi.org/10.3390/ijfs13020100

Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal, 28*(13), 1319–1350. https://doi.org/10.1002/smj.640colo

Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data* (2nd ed.). MIT Press. https://mitpress.mit.edu/books/econometric-analysis-cross-section-and-panel-data

Zhang, M., Zhou, N., Gao, J., Jiang, P., Zhang, Y., Wang, Y., & Chen, L. (2025). The long-term impact of entrepreneurial financing on job creation based on the roles of venture capital and angel investment. *Finance Research Letters, 62*, 107930. https://doi.org/10.1016/j.frl.2025.107930