

Factors Affecting the Growth of Small and Medium Enterprises in Mongu District, Zambia: Digital Transformation, AI-Driven Market Intelligence and Entrepreneurial Resilience

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Abstract — Small and medium enterprises (SMEs) constitute the backbone of employment generation, income distribution, and economic resilience in sub-Saharan African economies. In Mongu District, Western Province, Zambia, SMEs face a complex web of structural, financial, and informational challenges that constrain their growth, sustainability, and contribution to local economic development. This article investigates the factors affecting SME growth in Mongu District, situating local findings within global scholarship on digital transformation, artificial intelligence in business, fintech ecosystems, and inclusive entrepreneurship. Drawing on a mixed-methods survey of SME owners and business support practitioners, the study identifies access to finance, market information asymmetry, inadequate business skills, infrastructure deficits, and regulatory compliance burdens as primary growth constraints. The article argues that AI-powered market intelligence platforms, mobile fintech solutions, blockchain-enabled supply chain management, and digital business literacy programmes offer transformative pathways for SME growth in resource-constrained African economic contexts. Policy and practice recommendations are presented.

Keywords — *Small and Medium Enterprises; SME Growth; Mongu District; Zambia; Digital Transformation; Artificial Intelligence; Fintech; Entrepreneurship.*

1. Introduction

Small and medium enterprises represent a critical engine of economic development, poverty reduction, and employment generation across sub-Saharan Africa, accounting for the majority of non-agricultural employment and a substantial share of GDP in most developing economies (Vettriselvan, 2025; Mohanbabu & Vettriselvan, 2025a). In Zambia, SMEs are recognised in national development frameworks as essential contributors to the diversification strategy needed to reduce dependence on copper mining revenues and build resilient, inclusive local economies (Vettriselvan & Anto, 2018; Kariveliparambil et al., 2026a). However, SMEs in rural districts such as Mongu face persistent structural constraints including limited access to financial services, inadequate market information, infrastructure deficits, and insufficient business management capacity that prevent the vast majority from achieving sustainable growth beyond micro-enterprise scale (Vettriselvan et al., 2025c; Meena et al., 2025).

The global digital transformation wave characterised by AI-powered market analytics, mobile fintech, blockchain-enabled supply chain management, and digital business platforms offers unprecedented possibilities for overcoming traditional SME growth barriers (Venice et al., 2025a; Swadhi et al., 2025a). This article examines how these technological forces interact with the specific SME

growth challenges of Mongu District and identifies evidence-based digital transformation pathways for local SME development.

2. Literature Review

2.1 Access to Finance and Fintech Solutions

Access to finance is consistently identified as the primary constraint on SME growth in developing economies (Vettriselvan & Anto, 2018; Mohanbabu & Vettriselvan, 2025b). Formal banking institutions in Zambia serve a small minority of SMEs, with collateral requirements, complex documentation demands, and high interest rates effectively excluding the majority of rural micro and small enterprises from affordable credit markets (Vettriselvan et al., 2025c; Kariveliparambil et al., 2026b). Mobile fintech platforms including mobile money services, peer-to-peer lending applications, and digital savings clubs are progressively filling the financial inclusion gap left by conventional banking, offering lower transaction costs, simpler access requirements, and greater geographic reach than traditional financial institutions (Venice et al., 2025a; Swadhi et al., 2025a). AI-powered credit scoring systems that use alternative data sources including mobile phone usage patterns, transaction histories, and social network data to assess SME creditworthiness offer a transformative pathway to financial inclusion for enterprises that lack formal financial records or collateral assets (Venice et al., 2025b; Akila et al., 2025). Blockchain-enabled

microfinance platforms that create tamper-proof records of SME financial transactions and repayment histories provide fintech lenders with reliable evidence for credit risk assessment while building SME financial track records that can eventually facilitate access to formal banking services (Rajeswari et al., 2026; Venice et al., 2025c).

2.2 Market Information and AI-Driven Intelligence

Market information asymmetry where buyers have significantly more knowledge about market conditions, prices, and opportunities than sellers is a structural feature of rural SME markets that systematically disadvantages small producers and traders relative to larger intermediaries (Vettriselvan et al., 2025b; Mohanbabu & Vettriselvan, 2025a). AI-powered market intelligence platforms that aggregate real-time price data, demand forecasts, supply chain information, and competitor analysis provide SME owners with the market knowledge previously accessible only to large corporations with dedicated market research capacity (Venice et al., 2025a; Devi et al., 2025). Mobile-based agricultural and commodity price information services have demonstrated significant positive impacts on smallholder farmer and trader income by enabling better-informed selling decisions and reducing exploitation by price-advantaged intermediaries (Swadhi et al., 2025b; Vasantha et al., 2025).

2.3 Digital Business Literacy and Entrepreneurial Capacity

Business management skills deficits particularly in financial management, marketing, record-keeping, and strategic planning are widely documented as significant constraints on SME growth in sub-Saharan African contexts (Gayathri et al., 2025b; Vettriselvan, 2025). AI-powered digital business literacy platforms that deliver personalised, contextually relevant business skills training through mobile applications offer a scalable, low-cost pathway for addressing the capacity constraints that currently limit SME growth potential (Venice et al., 2025b; Vasantha et al., 2025). Recommendation systems that curate relevant business training content, regulatory guidance, and market opportunity alerts based on individual SME owner profiles and demonstrated knowledge gaps can ensure that digital business literacy investments are targeted to the specific needs of each enterprise (Venice et al., 2025c; Arockia et al., 2025). Women entrepreneurs face compounded barriers to SME growth, including gender-based constraints on land ownership, credit access, market mobility, and business registration barriers that digital financial inclusion and mobile-based market access platforms are progressively enabling women to navigate more effectively (Ashifa et al., 2019; Vettriselvan & Anto, 2018; Meena et al., 2025). Gender-responsive SME support programmes that explicitly address women's business

development barriers while leveraging digital tools for expanded market access represent a high-impact investment opportunity for Zambian SME development policy (Vijayalakshmi et al., 2025b; Kariveliparambil et al., 2026a).

2.4 Infrastructure, Regulatory Environment, and Digital Transformation

Infrastructure deficits including unreliable electricity, inadequate road networks, and limited internet connectivity impose direct costs on SMEs through production disruptions, transport delays, and inability to access digital business platforms (Vettriselvan et al., 2025b; Shanthi et al., 2025). The regulatory compliance burden encompassing business registration costs, tax obligations, sector-specific licensing requirements, and labour regulations disproportionately constrains smaller enterprises that lack the administrative capacity and legal knowledge to navigate complex regulatory environments (Vettriselvan et al., 2025d; Vinodh et al., 2026a). Digital regulatory simplification platforms that guide SME owners through registration, licensing, and compliance processes in simple, accessible formats reduce compliance costs and barriers while improving the formality and transparency of the SME sector (Venice et al., 2025f; Vettriselvan et al., 2026b).

3. Methodology

A descriptive survey design employing mixed methods was used to investigate factors affecting SME growth in Mongu District, Western Province, Zambia. The sample comprised 80 SME owners drawn through stratified random sampling across retail, manufacturing, agricultural processing, and service sectors, supplemented by 15 key informant interviews with business development service providers, microfinance institution officers, and local government business promotion officials (Kombo & Tromp, 2014; Orodho & Kombo, 2012). Data collection instruments included a structured SME owner questionnaire covering enterprise characteristics, growth performance, constraint identification, and digital tool usage; and a key informant interview guide exploring support system adequacy and digital business promotion opportunities. Quantitative data were analysed through descriptive statistics; qualitative data through thematic analysis.

4. Findings and Analysis

4.1 SME Profile and Growth Performance

The study sample included enterprises ranging from micro-scale informal traders to registered small enterprises with up to 15 employees. Only 28% of respondent SMEs had experienced revenue growth over the preceding two

years; 45% reported stagnation; and 27% reported revenue decline. Gender distribution revealed that 58% of SME owners were female, consistent with regional patterns of female dominance in informal small enterprise activity. Fewer than 15% of respondent enterprises had accessed formal financial services, with 72% relying on personal savings, family support, or informal savings groups for business financing (Vettriselvan & Anto, 2018; Kariveliparambil et al., 2026b).

4.2 Primary Growth Constraints

Finance access was ranked as the primary growth constraint by 82% of respondents, followed by market information limitations (74%), inadequate business management skills (68%), infrastructure deficits particularly electricity and road access (65%), and regulatory compliance complexity (45%). Women entrepreneurs reported disproportionately severe access to finance constraints, with 91% identifying finance as a primary barrier compared to 71% of male respondents a differential attributable to collateral requirements that systematically disadvantage women lacking independent land ownership (Ashifa et al., 2019; Vettriselvan & Anto, 2018; Meena et al., 2025).

4.3 Digital Technology Awareness and Adoption

Mobile money usage was the most widely adopted digital technology, used by 65% of respondents for business transactions. Awareness of AI-powered market intelligence platforms was low (12%), while digital business literacy applications were unknown to 88% of respondents. Interest in accessing digital market price information and business skills training through mobile platforms was high (78%), indicating significant latent demand for digital business support tools (Venice et al., 2025a; Vasantha et al., 2025).

4.4 Support System Adequacy

Business development service availability was inadequate, with fewer than 30% of respondents having accessed any formal business training in the preceding three years. Microfinance institution presence was limited to two institutions in Mongu town, with no outreach to peri-urban or rural enterprise clusters. Government business promotion programmes were unknown to 60% of respondents, suggesting significant communication gaps in SME support policy implementation (Gayathri et al., 2025b; Vettriselvan et al., 2025c).

5. Discussion

The findings from Mongu District SMEs present a vivid picture of enterprises operating under severe and

compounding constraints that prevent most from achieving sustainable growth despite their entrepreneurial initiative and community economic importance. The finance access gap particularly its gendered dimensions demands urgent and innovative policy responses that leverage mobile fintech and AI credit scoring to extend financial services to underserved SME populations (Venice et al., 2025b; Akila et al., 2025; Rajeswari et al., 2026).

The digital transformation opportunity identified through high mobile money adoption rates and strong latent demand for digital market intelligence and business literacy tools suggests that targeted digital SME support investments would find receptive audiences among Mongu District enterprises (Vasantha et al., 2025; Venice et al., 2025a; Swadhi et al., 2025a). The key challenge is platform design: digital SME support tools must be mobile-first, available in local languages, affordable on low-cost data plans, and usable with limited digital literacy requirements that AI-powered interface personalisation can help address (Venice et al., 2025c; Arockia et al., 2025).

6. Conclusion and Recommendations

This article has examined factors affecting SME growth in Mongu District, connecting local evidence with global scholarship on digital transformation, AI market intelligence, and inclusive entrepreneurship. Findings confirm multidimensional constraints requiring integrated responses across finance, market information, capacity building, and infrastructure. Recommendations: (1) deploy mobile fintech platforms with AI credit scoring to extend financial inclusion to rural SMEs (Venice et al., 2025b; Akila et al., 2025); (2) establish AI-powered mobile market intelligence services delivering real-time price and market data (Venice et al., 2025a; Swadhi et al., 2025a); (3) develop gender-responsive digital business literacy programmes accessible on low-cost smartphones (Vijayalakshmi et al., 2025b; Meena et al., 2025); (4) simplify business registration through digital regulatory guidance platforms (Venice et al., 2025f; Vinodh et al., 2026a); and (5) establish SME digital enterprise hubs in Mongu providing device access, connectivity, and business advisory services (Vettriselvan, 2025; Vettriselvan et al., 2025c).

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