Business Challenges Impacting the Sustainability of Start-ups in Lusaka District

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ABSTRACT

This study investigates the challenges impacting the sustainability of start-up businesses in the Lusaka District of Zambia. Employing a quantitative research approach, primary data was collected using self-administered structured questionnaires from 361 respondents across various entrepreneurial sectors via simple probability sampling. Data analysis, utilizing the Statistical Package for the Social Sciences (SPSS), included descriptive statistics and multiple linear regression. Contrary to conventional assumptions, the regression analysis revealed that individual challenges—including limited access to finance, high business risks, intense competition, lack of skilled labor, and technology adaptation—did not emerge as statistically significant isolated predictors of start-up sustainability. However, the overall predictive model was highly significant ($R^2 = 0.616$), demonstrating that long-term business sustainability is hindered by the synergistic, combined weight of these systemic bottlenecks rather than any single factor. The study acknowledges critical limitations, noting that the non-significance of individual hypotheses may be attributed to measurement constraints and the inherent limitations of a purely quantitative, self-reported design. To mitigate these collective challenges, the study recommends targeted government policies focusing on holistic start-up support, while calling for future qualitative research and rigorous measurement model assessments to capture the complex nuances of entrepreneurial survival in emerging markets.

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1. Introduction

Entrepreneurship is an engine for economic and social development, prompting governments worldwide to prioritize the creation of environments conducive to private sector growth, particularly for small and medium enterprises (SMEs) and start-ups (Ribeiro-Soriano, 2017). However, entrepreneurial start-ups face a myriad of challenges; how these obstacles are navigated ultimately determines the venture's survival, scalability, and long-term sustainability (Slevin and Covin, 1998; Purnomo, Adiguna, Widodo, Suyatna and Nusantoro, 2021). This study investigates the challenges faced by start-up businesses in the Lusaka District of Zambia, examines the subsequent effects of these challenges on business sustainability, and proposes evidence-based mitigation strategies.

Lusaka District, situated in the central part of Zambia, serves as the nation's capital and primary economic hub. With an estimated metropolitan population of over 3.6 million as of 2026 (World Population Review, 2026), it is the most populous district in the country and a focal point for rapid urbanization and commercial development. Driven by sectors such as finance, commerce, agriculture, and manufacturing, Lusaka hosts a vibrant, albeit constrained, entrepreneurial ecosystem. Like many rapidly expanding urban centers in developing economies, the district grapples with infrastructural deficits, including traffic congestion, inconsistent power supply, and resource management challenges (Lane, Mwathunga and Robinson, 2025; Kaulu, Kapilili, Kaulu and Kaulu, 2025; Mwale, Luke and Pisa, 2022).

1.1. Background

Entrepreneurs who pursue business sustainability directly link their commercial success to generating positive socio-economic and environmental impacts, thereby creating value for a broader range of stakeholders. Start-ups and SMEs are indispensable to this ecosystem. In Zambia, MSMEs represent roughly 97% of all registered businesses and

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account for approximately 88% of national employment, primarily engaging vulnerable segments of the workforce (Chigunta and Mwanza, 2016; Nan and Park, 2022).

Despite their massive socio-economic footprint, these enterprises face severe operational bottlenecks. Globally, start-ups encounter obstacles such as limited access to growth finance, regulatory hurdles, market competition, and operational inefficiencies (Hadizadeh et al., 2025). In the Zambian context, these global challenges are further compounded by high borrowing costs, bureaucratic red tape, skills shortages, and inadequate digital and physical infrastructure (Lungu, Tembo and Chisebe, 2026).

Recognizing these barriers, the Zambian government has introduced various frameworks, such as the Revised National MSME Development Policy and the establishment of the Zambia Development Agency (ZDA). These entities aim to facilitate economic development by promoting investment, simplifying licensing formalities, and improving the broader investment climate. However, despite these institutional efforts, an empirical gap remains regarding how systemic challenges specifically impact the day-to-day sustainability of early-stage start-ups in Lusaka.

1.2. Problem Statement

Although Lusaka District has emerged as a nucleus for entrepreneurial activity, start-ups continue to face systemic barriers that severely compromise their sustainability. Challenges such as high borrowing costs, weak infrastructure, complex regulations, and limited market integration persist, frequently resulting in premature business failure (Lungu et al., 2026). While existing literature acknowledges the broad inhibitors of SME growth in developing nations, there is a distinct lack of comprehensive, empirical analysis focusing on the nexus between specific operational challenges (e.g., technology adaptation, risk, skilled labor) and start-up sustainability within the unique context of Lusaka. This study bridges this empirical gap by examining how these localized challenges impact long-term sustainability and by proposing tailored, evidence-based solutions.

1.3. Aim and Objectives of the Study

The primary aim of this study is to analyze the challenges impacting the sustainability of start-up businesses in Lusaka District and to propose policy and managerial solutions. To achieve this, the study is guided by the following specific objectives:

1. To investigate how access to finance impacts the sustainability of start-ups.
2. To assess the impact of technology adaptation on start-up sustainability.
3. To determine the extent to which a lack of skilled labor hinders sustainable growth.
4. To analyze how intense market competition affects start-up survival.
5. To evaluate how systemic and operational risks impact the sustainability of new ventures.

1.4. Research Questions and Hypotheses

Aligned with the study's objectives, the research addresses the following core question: How do financial constraints, technology adaptation, skilled labor shortages, market competition, and operational risks individually and collectively impact the sustainability of start-ups in Lusaka?

Consequently, the study tests the following hypotheses:

- **H1:** Financial constraints have a significant negative effect on the sustainability of start-up businesses in Lusaka District.
- **H2:** Intense market competition adversely affects the sustainability of start-ups.
- **H3:** Technology adaptation positively affects start-up sustainability.
- **H4:** High operational and systemic risks negatively affect start-up sustainability.
- **H5:** The availability of skilled labor has a significant positive effect on business sustainability.

1.5. Justification for the Study

This research provides insights into the obstacles hindering SME development, leading to more effective, targeted interventions. By identifying the exact mechanisms through which these challenges degrade business sustainability, the findings will empower policymakers to streamline regulations, reduce bureaucratic burdens, and promote targeted financial access. Ultimately, cultivating a resilient start-up sector is vital for sustained wealth creation, job provision, and the broader economic transformation of Zambia.

2. Literature review

2.1. Theoretical Review

To systematically evaluate the challenges impacting the sustainability of start-ups in the Lusaka District, this study is anchored in three complementary theoretical paradigms: the Resource-Based View (RBV), the Entrepreneurial Ecosystem Framework, and the Dynamic Capabilities Theory.

2.1.1. The Resource-Based View (RBV)

The Resource-Based View, pioneered by (Barney, 1991), postulates that a firm achieves a sustained competitive advantage through the strategic accumulation and deployment of valuable, rare, inimitable, and non-substitutable resources. Within the context of start-up ventures, resources are broadly categorized into tangible assets (e.g., financial capital, technological infrastructure) and intangible assets (e.g., skilled labor, risk management competencies). RBV provides a critical lens for this study by framing challenges such as lack of funding and skilled labor shortages as severe resource constraints. Under this theory, a start-up's inability to secure or efficiently allocate these critical resources directly compromises its operational viability and long-term sustainability.

2.1.2. Entrepreneurial Ecosystem Framework

While RBV focuses on internal firm dynamics, the Entrepreneurial Ecosystem Framework examines the external environmental determinants of start-up success. Proposed by Isenberg (2010), this framework emphasizes the interdependent actors and factors—such as market demand, competitive pressures, government policies, and infrastructural support—that collectively foster or hinder entrepreneurship within a specific geographic region. Applying this framework to Lusaka District allows the study to contextualize how localized systemic bottlenecks, including intense market competition and macroeconomic risks, exert external pressure on early-stage enterprises.

2.1.3. Dynamic Capabilities Theory

Bridging the internal focus of RBV and the external focus of the ecosystem framework is the Dynamic Capabilities Theory (Teece, Pisano and Shuen, 1997). This theory argues that in rapidly changing environments, merely possessing resources is insufficient. Instead, a firm's sustainability depends on its capacity to continuously integrate, build, and reconfigure internal and external competencies to address rapidly shifting environments. For start-ups in Lusaka, this implies that sustainability is not determined by a single factor—such as securing a loan—but rather by the entrepreneur's dynamic ability to leverage technology, adapt to competitive shifts, and continuously upgrade human capital in response to market volatility.

2.2. Empirical review

Empirical literature on start-up sustainability consistently identifies structural constraints related to finance, technology capability, human capital, competitive pressure, and operational risk as key determinants of new venture survival. Evidence from both developed and developing economies demonstrates that these factors shape the ability of young firms to survive early-stage volatility, scale operations, and sustain long-term growth. The following review synthesizes empirical findings relevant to the five study objectives.

2.2.1. Access to Finance and Start-up Sustainability

Access to finance is widely recognized as one of the most critical determinants of start-up survival. Empirical evidence shows that financial constraints significantly reduce the ability of new ventures to invest in productive assets, adopt technology, and expand operations. Avoumatsodo (2025) demonstrates that financial development plays a central role in enabling technology adoption and productivity improvements, but its impact is subject to a threshold effect. Financial development promotes technology adoption only up to a certain point, after which other factors such as human capital become more binding constraints.

In developing economies, financial markets often rely heavily on collateral-based lending mechanisms. This creates structural disadvantages for start-ups that typically lack sufficient tangible assets. As a result, new ventures encounter strict borrowing limits arising from lender concerns about moral hazard and the risk of strategic default. These constraints restrict the ability of entrepreneurs to finance innovation and operational expansion.

Empirical evidence also indicates that financial constraints generate sector-specific delays in technological modernization. Because the cost of adopting new technologies is proportional to the productivity gap between firms and the global frontier, sectors that require high upfront investment face greater barriers to entry and slower convergence.

Capital-intensive industries therefore experience prolonged divergence from global productivity levels when financing capacity is weak.

At the firm level, financing capacity often evolves dynamically. As firms grow and generate income, their ability to access credit improves, creating a reinforcing feedback mechanism in which improved financing facilitates further investment and productivity gains. Avoumatsodo (2025) describes this process as "converging to convergence," whereby initial growth gradually relaxes financial constraints and allows firms to transition toward a catch-up trajectory. However, start-ups that fail to overcome early-stage financing barriers remain trapped in a cycle of under investment and limited growth.

2.2.2. Technology Adoption and Start-up Sustainability

Empirical research suggests that the mere availability of technology does not guarantee productivity improvements for start-ups. Instead, the critical determinant is the intensity of technology use and the organizational capacity required to integrate technological systems into operational processes. Comin and Mestieri (2018) show that although global diffusion of technology has accelerated, substantial productivity gaps remain because firms in developing economies often utilize available technologies at significantly lower levels of intensity.

Technology adoption requires complementary institutional and managerial structures that enable firms to coordinate processes and effectively utilize digital tools. Evidence presented by Oberdieck and Moch (2025) suggests that technological automation frequently acts as a "stress test" for organizational capacity. Firms with clearly defined workflows, transparent decision-making processes, and role-based accountability structures are better able to realize the efficiency gains associated with technological systems.

In contrast, firms that lack governance structures and standardized procedures often fail to derive productivity benefits from digital tools. In such environments, automation can amplify existing inefficiencies rather than improve performance. Empirical observations indicate that successful technology implementation therefore depends not only on the acquisition of hardware and software but also on the presence of organizational rules that guide their use. Consequently, start-ups that lack managerial structures capable of embedding technology into operational processes may experience limited gains from technological adoption.

2.2.3. Skilled Labor and Entrepreneurial Capacity

Human capital plays a crucial role in determining whether start-ups can effectively utilize technology and scale operations. Empirical evidence indicates that shortages of skilled labor significantly constrain the growth potential of new ventures, particularly in developing economies where technical expertise may be limited.

Oberdieck and Moch (2025) document that firms operating in environments characterized by shortages of engineers, technicians, and other specialized professionals often encounter delays in implementing new technologies and scaling production processes. These labor shortages increase operational friction and limit the capacity of firms to respond to changing market conditions.

The concept of absorptive capacity provides an important explanation for this relationship. Aghion, Howitt and Mayer-Foulkes (2005) demonstrate that a firm's ability to recognize, assimilate, and apply new knowledge depends heavily on the existing skill base of its workforce. Firms with higher levels of human capital are better positioned to adopt advanced technologies and adapt to evolving market demands.

Empirical evidence also suggests that the integration of skilled labor into structured organizational processes is essential for sustaining productivity improvements. Leadership commitment to process consistency and clearly defined operational roles allows firms to translate individual expertise into coordinated organizational performance. In the absence of such structures, skilled labor may be used primarily to compensate for inefficient manual processes rather than to drive innovation and productivity growth.

2.2.4. Market Competition and Start-up Survival

Competitive pressures represent another important determinant of start-up sustainability. Empirical evidence suggests that the competitive environment in which firms operate is shaped by sector-specific productivity dynamics and the speed of technological progress at the global frontier.

(Avoumatsodo, 2025) finds that sectors experiencing rapid productivity growth at the global frontier often exhibit slower convergence in developing economies. This inverse relationship arises because rapid frontier expansion increases the technological gap that lagging firms must overcome. For example, sectors such as agriculture, where frontier productivity grows rapidly, may present particularly high barriers for start-ups attempting to catch up.

In contrast, sectors characterized by slower frontier growth—such as certain segments of manufacturing and services—tend to demonstrate stronger convergence patterns. Because the technological distance between frontier and lagging firms expands more slowly, start-ups operating in these sectors face relatively lower barriers to productivity catch-up.

For new ventures operating under financial and technological constraints, intense competition can therefore amplify survival challenges. Firms that lack the resources required to invest in technology or scale production may struggle to compete against more established enterprises or technologically advanced competitors. Consequently, competitive failure often reflects structural barriers rather than purely managerial inefficiency.

2.2.5. Systemic and Operational Risks Affecting Start-ups

Beyond firm-level constraints, empirical research highlights the importance of systemic and operational risks in shaping start-up sustainability. Regulatory uncertainty, institutional fragility, and governance weaknesses can create environments in which entrepreneurial ventures face significant operational instability.

Oberdieck and Moch (2025) emphasize that effective organizations rely on what they describe as the "invisible infrastructure of effectiveness"—a set of governance structures, accountability mechanisms, and operational procedures that allow firms to function reliably. In the absence of these institutional foundations, businesses may experience stalled decision-making processes, mistrust among stakeholders, and inefficient allocation of resources.

Empirical observations also point to several critical risk factors that undermine start-up sustainability. Strategic lock-in may occur when firms rely heavily on proprietary models or rigid operational structures that limit adaptability in changing markets. Governance gaps may emerge when automated systems operate without clearly defined human accountability, resulting in operational errors and weakened oversight.

Macroeconomic volatility represents an additional source of risk for start-ups operating in developing economies. Fluctuations in economic conditions can affect access to finance, investment planning, and market demand. Such volatility may disrupt the gradual process through which firms accumulate the financing capacity needed to transition from early-stage survival toward sustained growth.

Collectively, these systemic and operational risks create uncertain business environments that can significantly hinder the sustainability of new ventures. Understanding how these risks interact with financial, technological, and human capital constraints is therefore essential for explaining variations in start-up survival outcomes.

3. Methodology

3.1. Theoretical Framework

Because business sustainability is a multifaceted construct, this study integrates two distinct theoretical perspectives. First, the Resource-Based View (RBV) posits that firms achieve a sustainable competitive advantage through the strategic use of valuable, rare, inimitable, and non-substitutable resources Barney (1991). Within this context, challenges such as a lack of funding or skilled labor represent resource deficiencies that directly threaten a start-up's survival. Second, the Entrepreneurial Ecosystem Framework focuses on the interdependent actors and factors that support entrepreneurship within a specific region Isenberg (2010). This framework contextualizes how external ecosystem elements—such as market competition, risk, and technological infrastructure—impact start-up scalability and sustainability in the Lusaka District.

3.2. Empirical Model

To examine the relationship between start-up challenges (independent variables) and sustainability outcomes (dependent variable), a Multiple Linear Regression model was employed. The regression model is specified as:

$$BS = \beta_0 + \beta_1 AF + \beta_2 R + \beta_3 TA + \beta_4 SL + \beta_5 C + \epsilon \tag{1}$$

Where:

- BS (Business Sustainability): Dependent variable, measured via a composite index of survival rate, revenue growth, employment growth, and profitability.
- AF (Access to Finance): Measured via access to credit, borrowing costs, collateral requirements, and perceived barriers.

- R (Risk): Measured via frequency of cash flow problems, exposure to market shocks, and perceived risk.
- TA (Technology Adaptation): Measured via digital tool utilization and technological competitiveness.
- SL (Skilled Labor): Measured via the number of formally trained employees, access to managerial expertise, and founder education.
- C (Competition): Measured via perceived market saturation and competitive pressures.
- ϵ (Error Term): Unobserved factors affecting sustainability.

3.3. Data and Sampling

This study utilized both primary and secondary data. Secondary data included reports from the Citizen Economic Empowerment Commission (CEEC), the Zambia Development Agency (ZDA), and relevant policy documents. Primary data was collected via a cross-sectional survey.

The target population comprised approximately 3,000 registered start-up enterprises operating in Lusaka District across the agriculture, retail, services, and manufacturing sectors (Zambia Development Agency, 2023). To ensure adequate representation, Yamane's formula was used to determine the sample size:

$$n = \frac{N}{1 + N(e^2)} \tag{2}$$

Assuming a population (N) of 3,000 and a 5% margin of error ($e = 0.05$):

$$n = \frac{3000}{1 + 3000(0.05^2)} \approx 353 \tag{3}$$

A stratified random sampling method was used, grouping start-ups by sector and randomly selecting respondents proportionally. Ultimately, 361 the study collected from a total of 361 respondents.

3.4. Data Collection and Analysis

Self-Administered Questionnaires (SAQs) served as the primary data collection instrument. Participants were given a two-week completion window, with follow-ups conducted in the third week, yielding a robust response rate. Data was analyzed using SPSS version 27. Reliability was assessed using Cronbach's Alpha, and diagnostic tests—including the Variance Inflation Factor (VIF) for multicollinearity, the Shapiro-Wilk test for normality, and the Breusch-Pagan test for homoscedasticity—were conducted to validate the regression results.

All participants provided informed consent, and formal permission to conduct the study was secured from the Lusaka Municipal Council.

4. Results

4.1. Sample Profile

The demographic profile reveals a youthful and educated entrepreneurial base. The majority of respondents (61.8%) were aged between 21 and 30 years. Gender participation was relatively balanced, with males representing 56.8% and females 43.2% of the sample. Educationally, over 57% of the respondents possessed a Bachelor's degree or higher, suggesting a strong foundational capacity for management and innovation.

4.2. Validity and Reliability

Principal component analysis confirmed that factor loadings for all constructs exceeded the recommended 0.5 threshold. The Cronbach's Alpha for the composite scales was 0.613. Given the exploratory nature of this research within an emerging market context, this coefficient is deemed acceptable for social science research.

Table 1
Demographic Profile of the Sample

Variable	Category	Frequency	Percent (%)
Age Group	20 and below	39	10.8
	21–30	223	61.8
	31–50	69	19.1
	50+	30	8.3
Gender	Female	156	43.2
	Male	205	56.8
Highest Level of Education	Secondary School Education	1	0.3
	Grade 12 and below	70	19.4
	College Certificate or Diploma	5	1.4
	Diploma	48	13.3
	First Degree	80	22.2
	Bachelor's Degree	129	35.7
	Master's Degree	18	5.0
	PhD	10	2.8
Total		**361**	**100.0**

Table 2
Multiple Regression Coefficient Results

Model Predictors	Unstandardized Coefficients		Standardized Coefficients	t	Sig. (p)
	B	Std. Error	Beta		
(Constant)	11.790	1.743	—	6.764	0.000
Financial Challenges	0.123	0.106	0.064	1.160	0.247
Technology	0.325	0.326	0.055	0.999	0.319
Risk Management	0.003	0.095	0.002	0.031	0.975
Competition	-0.004	0.150	-0.001	-0.024	0.981
Skilled Labour	0.047	0.117	0.022	0.405	0.686
Age Group	-0.546	0.620	-0.047	-0.881	0.379

Dependent Variable: Business Sustainability

Table 3
Regression Model Summary

Statistic	Value
R	0.742
R^2	0.616
F-Statistic	22.351
Sig. (p-value)	< 0.001

4.3. Regression Analysis

A multiple linear regression was conducted to determine how financial challenges, technology, risk management, competition, skilled labor, and demographic age groups affect start-up sustainability.

The R^2 value indicates that the selected variables collectively explain 61.6% of the variance in start-up sustainability. The overall model is highly significant ($F = 22.351, p < 0.001$).

However, individual coefficient analysis reveals that none of the predictors independently show a statistically significant effect at the $p < 0.05$ level. Financial challenges ($\beta = 0.123$), technology ($\beta = 0.325$), and skilled labor ($\beta = 0.047$) demonstrated weak positive correlations with sustainability, while competition ($\beta = -0.004$) and age group ($\beta = -0.546$) exhibited weak negative correlations. Consequently, hypotheses H1 through H5 were individually not supported, indicating that sustainability is driven by the synergistic interaction of these factors rather than any single isolated variable.

Table 4
Summary of Hypothesis Testing Results

Hypothesis	Statement	Result
H1	Financial challenges have an effect on start-up sustainability	Not Supported
H2	Competition has an effect on start-up sustainability	Not Supported
H3	Technology adaptation has an effect on start-up sustainability	Not Supported
H4	Risk management has an effect on start-up sustainability	Not Supported
H5	Skilled labour has an effect on start-up sustainability	Not Supported

5. Discussion

The empirical findings highlight that the sustainability of start-ups in Lusaka District is a multidimensional construct. The lack of individual significance among the variables, contrasted with the strong explanatory power of the collective model ($R^2 \approx 0.61$), aligns with the Dynamic Capabilities Theory (Teece et al., 1997). This theory suggests that sustainable performance does not arise from isolated competencies (e.g., just having funding or just having technology) but rather from the orchestration of multiple resources to navigate environmental uncertainties.

The positive but statistically weak coefficients for financial and technological factors echo recent findings (Vaghera and Mashekwa, 2025; Damane and Ho, 2025), which indicate that access to finance only enhances SME resilience when accompanied by robust managerial and institutional support. Furthermore, the negative age coefficient suggests that younger entrepreneurs may be more adaptive and resilient, likely due to stronger digital capabilities and an openness to innovation, reflecting broader youth-driven entrepreneurial trends in Sub-Saharan Africa.

6. Limitations

Several limitations should be considered when interpreting these findings. Firstly the geographical scope. The study was confined to the Lusaka District. Economic, cultural, and infrastructural conditions differ across Zambia, limiting the national generalizability of the results. Secondly, the methodological constraints.The reliance on a purely quantitative approach and self-administered questionnaires may restrict a deeper understanding of the qualitative nuances, lived experiences, and contextual barriers founders face. Third, the response bias. Despite a high response rate, self-reported data carries inherent risks of social desirability and perception biases. Next, measurement model assessment is critical in order to ensure that results are not biased. The non significance of most of the hypotheses in this study could be due to spurious regressions - hence the importance of validity and reliability.

7. Conclusion and Recommendations

This study concludes that the sustainability of start-up enterprises in the Lusaka District is threatened by a complex web of systemic challenges, primarily driven by financial constraints, technological deficits, and a lack of skilled labor. While individual challenges do not act as sole determinants of failure, their combined weight significantly hinders long-term viability, resulting in low productivity and constrained growth.

To cultivate a more resilient entrepreneurial ecosystem, the following policy and managerial recommendations are proposed:

- **Targeted Financial Interventions:** The government and private sector stakeholders must collaborate to design accessible, low-interest credit facilities and early-stage grant programs specifically tailored for start-ups.
- **Capacity Building:** Incubators and government agencies should prioritize comprehensive human resource and risk management training to ensure founders can effectively manage scaling operations.
- **Technological Subsidies:** Policymakers should implement frameworks that lower the cost of digital tools and improve internet infrastructure, enabling start-ups to remain competitive in modern markets.
- **Professionalization of Start-ups:** Founders must move away from informal hiring practices and prioritize recruiting qualified professionals for critical financial and operational roles early in the venture's life cycle.

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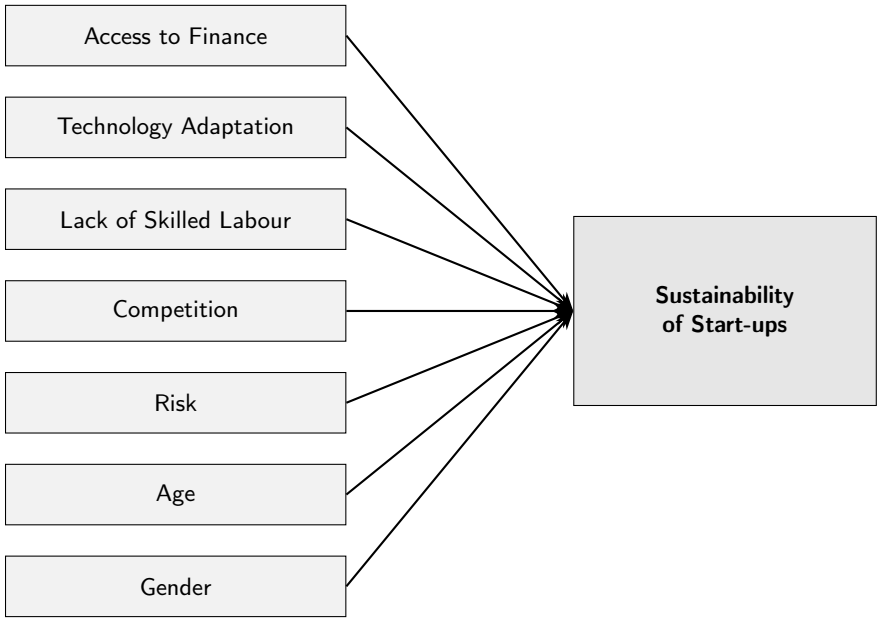

Figure 1: Conceptual framework linking factors affecting business sustainability. Source: Authors' design (2025).