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University business incubation in Zimbabwe: ecosystem orchestration in a resource-constrained environment

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Abstract

In the African context, university-affiliated business incubators are increasingly taking positions as key mechanisms for venture creation and facilitating technology commercialisation. Nonetheless, the existing evidence regarding what makes them effective continues to be largely shaped by research conducted in developed countries. This study draws on an entrepreneurial ecosystem and stakeholder perspective and adopts an interpretivist, qualitative exploratory design to investigate the critical success factors underpinning the operation of university business incubators in Zimbabwe as perceived by incubator personnel. Semi-structured interviews were conducted with five key informants drawn purposively from the country's three operational university incubators at the time of the study. The collected data were analysed thematically. Five interconnecting themes emerged. These include (1) funding as the foundational success factor, (2) stakeholder ecosystems and partnerships, (3) technical and mentorship support based on university expertise, (4) monitoring and evaluation systems as a source of legitimacy, and (5) contextual constraints arising from macroeconomic instability and institutional fragmentation. The findings suggest that where resources are constrained, university incubator success depends less on sophisticated venture financing mechanisms than on factors like stakeholder orchestration, institutional legitimacy and hybrid support ecosystems. Such factors connect and synergise university, government, donor and private-sector resources. The study contributes to emerging debates on incubation by illustrating how university incubators operate under conditions of resource scarcity and offers practical guidance for universities and policymakers building incubation ecosystems under conditions of resource scarcity.

1. Introduction

The twin problems of unemployment and small enterprise weakness are a persistent policy challenge in sub-Saharan Africa. In Zimbabwe, the formal labour market has contracted since 2000, mainly due to macroeconomic instability. This development leaves small and medium-sized enterprises (SMEs) and informal businesses as the primary absorbers of labour (Magidi, 2024; Moyo, 2022; Dana & Salamzadeh, 2025). An estimated 2.8 million entrepreneurs operate approximately 3.5 million businesses across the manufacturing, retail, transport, mining, energy, construction and service sectors, contributing approximately 60 per cent of gross domestic product and an equivalent share of employment (FinScope, 2022; Reserve Bank of Zimbabwe [RBZ], 2022; Mugogo, 2025; Makanyeza et al., 2023). Yet most ventures in the country are necessity-driven, undercapitalised and short-lived, and the survival statistics of new companies remain dismal both globally and locally (Tshuma et al., 2025; Dzingirai, 2021; Mashingaidze & Bomani, 2022). Thus, the apparent entrepreneurial dynamism hides a deep-seated fragility among businesses. The challenge confronting Zimbabwe is therefore not the generation of entrepreneurial activity per se, but its conversion into innovative, growth-oriented and durable enterprises.Across the world, business incubation is one of the most widely adopted instruments for addressing precisely this conversion problem. Incubators provide nascent ventures with workspace, business development services, mentorship, networks and seed finance, with the objective of accelerating venture development while containing the cost of failure (Paoloni & Modaffari, 2022;

Hassan, 2024). Universities have become particularly prominent hosts of incubation programmes because they concentrate scientific expertise, research infrastructure, student talent and institutional legitimacy in ways that few other actors in developing economies can match (Mian et al., 2016; McAdam et al., 2016; Hausberg & Korreck, 2020; Karahan, 2024). Reflecting this logic, the Government of Zimbabwe directed in 2018 that pilot incubators be established at six selected state universities. This directive built on earlier initiatives at the National University of Science and Technology (NUST, operating incubation programmes since 2005), the Harare Institute of Technology (HIT, whose programme was launched in 2014 in partnership with the United Nations Development Programme), and Midlands State University (MSU, whose incubation hub was launched in 2018) (Ministry of Higher and Tertiary Education, Science and Technology Development, 2018; UNDP, 2015). University incubation has in effect become central to Zimbabwe's innovation and enterprise development policy, having previously occupied a marginal position. This policy interest, however, has run ahead of the evidence. The scholarly literature on incubator performance and critical success factors has been generated overwhelmingly in North America, Europe, Asia and, to a lesser extent, Latin America (Blank, 2021; Chu & Chan, 2025; Raeisy et al., 2025; Hassan, 2024; Hausberg & Korreck, 2020). Houssou et al. (2024) observe that limited attention has been paid to the African context, and subsequent reviews confirm that African incubation research remains thin, fragmented and concentrated in South Africa (e.g., Masutha & Rogerson, 2014; Lose & Tengeh, 2015; Ayatse, Kwahar & Iyortsuun, 2017; Chitamba et al. 2025; Shongwe et al., 2026). This matters because the effectiveness of any incubation model depends heavily on its context. Incubators in emerging economies operate amid institutional voids, shallow capital markets, volatile macroeconomic conditions, and weak entrepreneurial ecosystems; these conditions alter both the limits and the imperatives of what incubators can and must do (Adegbite, 2001; Dutt et al., 2016; Mrkajic, 2017; Cao & Shi, 2021). In environments where venture capital is limited and business clients hardly afford products, standard incubation success factors from the West may fail or backfire. Zimbabwe, an extreme case of these conditions, offers a valuable analytical setting to test whether received incubation wisdom is transferable.

A further gap in the literature concerns whose perspective is privileged. Much incubation research evaluates outcomes from the standpoint of tenant firms or policymakers (e.g., Rambe, 2022), yet incubator staff possess a uniquely informed vantage point on what actually drives or derails incubation in practice (Bergek & Norrman, 2008; van Weele, van Rijnsoever & Nauta, 2017; Wu et al., 2022; Chu & Chan, 2025). In emerging ecosystems such as Zimbabwe's, where operational incubators are few and only a handful of pioneering individuals have institutional memory, staff perspectives are possibly the richest available source of evidence.

Against this background, the objective of this study is to establish the critical success factors for the operation of university business incubators in Zimbabwe from the perspective of incubator staff. The study pursues this objective through an interpretivist, qualitative exploratory design involving semi-structured interviews with elite informants at the country's three operational university incubators, analysed thematically and interpreted through an entrepreneurial ecosystem and stakeholder lens.

The study makes three contributions. Empirically, it provides one of the limited staff-centred accounts of university incubation in Zimbabwe, extending the limited African evidence base beyond South Africa. Theoretically, it offers contextual support for the argument that in resource-constrained emerging economies, incubator effectiveness rests less on the sophisticated venture financing mechanisms emphasised in developed-economy models and more on stakeholder orchestration, institutional legitimacy and hybrid support (Spigel, 2017; Stam & van de Ven, 2021; Wurth, Stam & Spigel, 2022). The findings of the study offer actionable guidance to university leaders, incubator managers and policymakers seeking to build viable incubation programmes under austerity.

Following this introduction, section 2 reviews the literature on business incubation, university incubators, success factors and emerging-economy constraints, and develops the study's conceptual framing. Section 3 details the methodology. Section 4 presents and discusses the findings around five themes while section 5 concludes with the theoretical, policy and practical implications, limitations and directions for future research.

2. Literature Review and Theoretical Framing

2.1 The concept and evolution of business incubation

Business incubation remains a contested concept. Recent bibliometric and systematic reviews agree that the field has grown rapidly while remaining fragmented, with inconsistent constructs hampering cumulative evidence on what incubators actually achieve (Deyanova, Brehmer, Lapidus, Tiberius & Walsh, 2022; Sohail, Belitski & Castro Christiansen, 2023; Gulia, Kumar & Arora, 2023). The conventional narrative describes an evolution across generations. The evolution stretches from subsidised real estate and shared infrastructure, through service-intensive models adding coaching and business development, to contemporary network- and knowledge-centred configurations (Bruneel, Ratinho, Clarysse & Groen, 2012; Mian, Lamine & Fayolle, 2016). However, the generational story should not be interpreted as linear progress. In practice, generations coexist, and many incubators in developing regions still operate predominantly first-generation models while being evaluated against third-generation expectations (Sohail et al., 2023; Egbetokun, 2025). What survives definitional disagreement is the functional core of an incubator. Business incubators are a strategic, value-adding system of selection, business support and mediation between ventures and their environment (Hackett & Dilts, 2004; Bergek & Norrman, 2008). This triad continues to organise contemporary reviews of the nature of business incubators (Hausberg & Korreck, 2020; Crișan et al., 2021). Even so, the evidence on effectiveness remains unsettled. The most recent meta-analysis finds a positive overall effect of incubation on venture performance, but one significantly moderated by programme specialisation, public sponsorship and regional context (Eberle & Seitz, 2026). This meta-analytic finding warns against assuming incubation works everywhere the same way, which is exactly why context-sensitive inquiry matters. For the purposes of this study, a successful incubator is one able to graduate tenant ventures, contribute to employment creation and operate at least at break-even (Franco, Haase & Correia, 2015).

2.2 University business incubators

University business incubators (UBIs) are a unique and complicated incubator type. They exist within academic institutions and pursue hybrid missions spanning technology transfer, research commercialisation, student entrepreneurship and regional development (Mian et al., 2016; Wright, Siegel & Mustar, 2017). Their hybridity triggers both their advantage and their complexity. On the advantage side, embeddedness confers resources few other intermediaries can match. The resources include laboratories, scientific expertise, student talent pipelines and the reputational legitimacy of the host institution. On the downside, hybrid missions generate goal ambiguity. One question is whether a UBI is to be judged on licences, graduates, jobs or regional spillovers. This, in turn, produces the evaluation difficulties that plague the UBI literature, alongside academic bureaucracy, ambiguous intellectual property regimes and exposure to university budget cycles (McAdam, Miller & McAdam, 2016; Nicholls-Nixon, Valliere, Gedeon & Wise, 2021). Conceptually, two recent developments sharpen the analysis. First, the entrepreneurial support organisation literature reframes UBIs as fundamentally relational entities whose value lies in orchestrating connections rather than dispensing resources (Bergman & McMullen, 2022). This understanding is supported by evidence that mentoring-centred services can outperform the broader package of tangible incubation supports (van Rijnsoever & Eveleens, 2021; Clayton, 2024). Second, Nicholls-Nixon et al. (2021) demonstrate that UBIs co-evolve with their surrounding ecosystems across a lifecycle. In nascent ecosystems, UBIs inevitably perform the ecosystem-building functions of convening actors, legitimising entrepreneurship, and attracting resources. Incubators in mature ecosystems inherit such functions for free. The critical implication, insufficiently acknowledged in a UBI literature still written largely from North American and European experience, is that the functions and priorities of a UBI appear strongly shaped by ecosystem conditions. This means that transplanting governance patterns, performance metrics and service models from mature to nascent ecosystems risks evaluating African UBIs against functions their environments have not yet made possible (Kolade, Atiase, Murithi & Mwila, 2021; Egbetokun, 2025). This study explores that contingency.

2.3 Critical success factors in incubation

The success-factor literature is among the oldest in incubation research. It is also among the most criticised. Smilor and Gill (1986) pioneered it with ten factors spanning on-site business expertise, access to financing, entrepreneurial networks, tenant selection and university ties. Successive contributions have elaborated the list, highlighting managerial competence and sustainable funding (Lalkaka, 2002), goal clarity, facilities, networking and government support (Lee & Osteryoung, 2004), balanced screening practices (Aerts, Matthyssens & Vandenbempt, 2007), and clear mission, qualified managers, systematic tenant monitoring and viable funding models (Akcomak, 2009). However, it has been criticised for producing lists rather than theory, where factors are typically catalogued as additive ingredients, with little attention to how they interact or which mechanisms connect them to outcomes (Hausberg & Korreck, 2020; Sohail et al., 2023).

Meta-analytic evidence confirms that incubation effects are moderated by specialisation, sponsorship, and regional context (Eberle & Seitz, 2026). This means success factors are context-dependent rather than universal, an implication the list-making tradition has largely ignored. Another criticism is that the success-factor research stream has long over-emphasised tangible factors. Recent evidence converges on the conclusion that intangible services such as mentoring, coaching and networked expertise matter as much as physical infrastructure (van Rijnsoever & Eveleens, 2021; Games, Kartika, Sari & Assariy, 2021; Bergman & McMullen, 2022; Clayton, 2024), reviving Akcomak's (2009) early warning that developing-country incubators disproportionately neglect precisely these services.

African scholarship has contributed substantially to the success-factor research stream while largely inheriting its additive logic. The Godisa case study in South Africa compressed thirty-nine candidate factors into a dozen critical considerations (proximity to a university, funding availability, stakeholder consensus, supportive policy, competent management, and networking) (Mbewana, 2006; Buys & Mbewana, 2007) and Ndabeni (2008) similarly foregrounds science and technology expertise, stakeholder support, funding and networking capacity. More recent African evidence sharpens the funding and skills dimensions. For instance, financial unsustainability, skills shortages and weak selection systems remain the dominant inhibitors of South African incubator performance (Lose & Mapuranga, 2022), African tech hubs survive on improvised hybrid business models rather than stable revenue (Kolade et al., 2021), and the continental review concludes that the evidence base remains thin precisely where the stakes are highest (Egbetokun, 2025). Across four decades of contributions, six factors nevertheless recur with notable consistency. These are funding, infrastructure, stakeholder collaboration, networking, monitoring and evaluation, and managerial competence (Theodorakopoulos, Kakabadse & McGowan, 2014; Hausberg & Korreck, 2020; Gulia et al., 2023). This study seeks not to re-verify the list but to establish how these factors are configured, weighted and connected in a nascent African ecosystem. The study treats the factors, per the theoretical framing developed next, as relational rather than additive.

2.4 Incubation under emerging-economy constraints

What the mainstream success-factor literature largely assumes (e.g., functioning capital markets, paying clients, dense professional networks and stable macroeconomic conditions) cannot be assumed in most emerging economies. The recent evidence makes the gap impossible to ignore. The pattern Adegbite (2001) documented in early Nigerian incubators, undermined by erratic public funding and weak management, persists two decades later but in updated form. For instance, South African incubators remain inhibited above all by financial unsustainability, skills shortages, inadequate business space and weak selection systems (Lose & Mapuranga, 2022). In Kenya, incubation services accelerate start-ups unevenly and struggle to move beyond basic support (Otieno & Muathe, 2023). Some African technology hubs survive on improvised hybrid business models rather than stable revenue, leaving their viability chronically uncertain (Kolade, Atiase, Murithi & Mwila, 2021). In Zimbabwe, specifically, the measurable effect of incubation on start-up outcomes has proved difficult to establish (Karambakuwa & Bayat, 2022). The most comprehensive review of African incubation to date concludes that the evidence

base remains thin, methodologically weak and concentrated in a handful of countries, precisely where the policy investment is largest (Egbetokun, 2025). Meta-analytic evidence that incubation effects are significantly moderated by public sponsorship and regional context (Eberle & Seitz, 2026) confirms quantitatively what the African case literature suggests qualitatively, that is, incubation outcomes are environment-dependent.

Mrkajic (2017) argues that in institutionally void environments, incubators must substitute for missing market and regulatory institutions rather than merely supplement them. Dutt et al. (2016) similarly characterise developing-economy incubators as open-system intermediaries that address institutional failures by developing markets and building basic business capabilities, functions far removed from the venture-acceleration logic of developed-economy incubation. Cao and Shi (2021) generalise the point at ecosystem level. Emerging-economy entrepreneurial ecosystems are typified by resource scarcities, structural gaps and institutional voids, which compel intermediaries such as incubators to perform bridging and orchestration roles that their counterparts in mature ecosystems are spared. Thus critical factors are not universal but context-weighted, their relative importance set by the institutional environment rather than by the incubation model. Which factors matter most, and how they interact, in an extreme resource-constrained setting such as Zimbabwe therefore remains an open empirical question. African literature, for all its recent growth, has yet to answer this question from the perspective of those who run the incubators.

2.5 Theoretical framing

This study adopts a simplified entrepreneurial ecosystem and stakeholder perspective as its analytical lens. The entrepreneurial ecosystem approach conceives of productive entrepreneurship as the emergent outcome of interdependent actors and factors (finance, talent, knowledge, support services, policy, culture and networks) coordinated within a territory (Isenberg, 2010; Stam, 2015; Spigel, 2017; Stam & van de Ven, 2021). Within such systems, incubators function as intermediaries that connect ventures to resources dispersed across other actors. Stakeholder theory complements this systemic view by directing attention to the specific relationships through which such connections are accomplished: organisations create value by managing relationships with the groups that affect, or are affected by, their purpose (Freeman, 1984), and UBIs in particular must orchestrate university administrators, faculties, government ministries, donors, private firms and entrepreneurs whose interests only partially overlap (Miller, McAdam & McAdam, 2014; McAdam et al., 2016).

Combining these lenses yields the conceptual framing that guides the analysis. Six factors distilled from the success-factor literature (funding, infrastructure, stakeholder collaboration, networking, monitoring and evaluation, and managerial competence) are conceptualised as influencing incubator effectiveness, understood as the capacity to recruit, develop and graduate ventures. Critically, the ecosystem-stakeholder lens implies that these factors operate relationally rather than additively. In a nascent ecosystem, funding is accessed through stakeholder relationships, infrastructure is provided by stakeholders, and monitoring and evaluation systems function partly as legitimacy devices that keep stakeholders committed. This framing generates the study's orienting expectation, that in Zimbabwe's

resource-constrained context, the relational factors (stakeholder collaboration, networking, legitimacy-building governance) will condition access to the material factors (funding, infrastructure), which the empirical analysis interrogates.

3. Methodology

3.1 Research paradigm and design

The study adopted an interpretivist paradigm, premised on the view that knowledge of organisational phenomena is socially constructed and best accessed through the meanings that knowledgeable actors attach to their experiences (Orlikowski & Baroudi, 1991; Saunders, Lewis & Thornhill, 2016). Since the objective was to surface how those who run Zimbabwe's pioneering university incubators understand the conditions of incubation success in a setting where the phenomenon is new and under-documented, a qualitative exploratory design was appropriate (Creswell, 2014). Exploratory designs are indicated where little is known about a phenomenon and the priority is depth of insight rather than statistical generalisation (Salkind, 2012).

3.2 Research context and participants

At the time of data collection, only three university business incubators were operational in Zimbabwe. The universities in question are state-owned. These three institutions therefore constituted the entire accessible population of operating UBIs in the country. Purposive sampling (Etikan, Musa & Alkassim, 2016) was used to select five senior participants across the three incubators: a director of technology transfer and commercialisation, an incubation centre manager, two incubation facilitators (one doubling as industrial liaison, one as intellectual property educator) and a techno-preneurship facilitator, supplemented by snowball referrals within institutions to identify the most knowledgeable informants. Participants had between three and eleven years of incubation practice, with one informant bringing a decade of prior incubation experience from a South African university, and held qualifications spanning engineering, biotechnology, information technology, law, marketing and business studies. Table 1 summarises the profiles of the participants.

Table 1
Anonymised profile of study participants (N = 5)

Code	Gender	Age band	Role category	Disciplinary background	Incubation experience
P-A	Male	36–40	Director: technology transfer, commercialisation and licensing	Industrial/manufacturing engineering; biotechnology; business	Under 1 year in current centre; c. 10 years' prior incubation practice at a South African university
P-B	Male	36–40	Incubation facilitator and industrial liaison	Business studies; marketing	3 years
P-C	Male	36–40	Incubation centre manager	Information technology; business (transport and logistics sector)	4 years (c. 15 years' broader industry experience)
P-D	Male	40–45	Incubation facilitator and intellectual property educator	Business studies; law (doctoral candidate)	3 years
P-E	Female	40–45	Incubation facilitator (techno-preneurship)	Marketing; techno-preneurship	11 years

Note: Age is reported in five-year bands and roles are reported as generalised categories rather than official job titles to prevent re-identification within Zimbabwe's small incubation community. Participants collectively represented all three operational university incubators. The order of listing does not correspond to any institutional ordering used elsewhere

3.3 Justification of the sample

Although five participants is a small sample, it is academically defensible on four interrelated grounds. First, the participants are elite informants (the founding directors, managers and facilitators of the country's only operating university incubators) whose positional knowledge is unobtainable from any other source. Second, the study's object is highly specialised. The population of individuals with first-hand operational knowledge of Zimbabwean university incubation was, at the time, itself extremely small, and the sample captures a substantial proportion of it. Third, Zimbabwe's incubation ecosystem was at an early, pilot stage, with only three operational incubators nationally; the sampling frame was exhausted rather than truncated. Fourth, the logic of information power holds that the more information a sample holds relevant to the study aim, the fewer participants are needed. In other words, narrow study aims, dense specialist knowledge and strong dialogue quality all reduce required sample size (Malterud, Siersma & Guassora, 2016; see also Crouch & McKenzie, 2006; Robinson, 2014). The study nevertheless acknowledges that full data saturation cannot be claimed, and treats its findings as analytically, not statistically, generalisable.

3.4 Data collection

Data were collected through face-to-face semi-structured interviews conducted with an interview guide that was pilot-tested and refined for clarity. Interview questions covered programme preparation, stakeholder involvement, government roles, tenant selection, host-institution support, graduation outcomes, success factors, challenges and improvement priorities. Each interview session was approximately 60 minutes long. A trained research assistant facilitated the interviews. Interviews were audio-recorded with consent and transcribed verbatim.

3.5 Trustworthiness

Trustworthiness was pursued through the canonical criteria of credibility, transferability, dependability and confirmability (Lincoln & Guba, 1985; Shenton, 2004). Credibility was supported by prolonged engagement with recordings (transcripts were checked against audio multiple times), member verification of recorded data with respondents, pilot-testing of the instrument, and triangulation of interview data with documentary sources on each incubator. Transferability is enabled through thick description of the research context, participant profiles and institutional settings, allowing readers to judge resonance with other nascent African incubation ecosystems. Dependability was enhanced by sourcing data from credible, senior informants and by involving an independent assistant in the coding and verification of data. Confirmability was supported by an audit trail comprising raw recordings, verbatim transcripts, coding schedules and theme-development memoranda, which links each reported theme to identifiable data extracts (participant codes are reported with all quotations below).

3.6 Ethical considerations

The study followed standard ethical clearance procedures. Each participating university granted institutional permission. Participants were fully briefed on the research and gave written informed consent. They were also told that participation was voluntary and that interview questions would be shared beforehand. Anonymity is preserved using participant codes P-A to P-E, and any identifying institutional details in quotations have been removed. Institutions are masked because Zimbabwe had only three operational university incubators at the time of the study; as such, naming an institution alongside a role would effectively identify an individual. Data were stored securely and used only for this research (Saunders et al., 2016).

3.7 Data analysis

Analysis followed an inductive thematic procedure consistent with Tesch’s eight steps (Creswell, 2014) and the broader logic of thematic analysis (Braun & Clarke, 2006)

This entailed (i) verbatim transcription and repeated reading; (ii) selection of a single information-rich transcript for initial sense-making; (iii) systematic open coding of all transcripts, with codes labelled and abbreviated; (iv) clustering of codes into sub-themes (categories); (v) iterative refinement of candidate themes against the full data set, with constant comparison across the three institutional cases; (vi) naming and definition of five final themes; (vii) compilation of coded extracts under each theme; and (viii) literature control, in which each theme was interrogated against extant incubation research. An

independent assistant verified the coding of a sample of transcripts, and discrepancies were resolved by discussion.

Table 2 presents the audit trail linking illustrative verbatim extracts to initial codes, sub-themes and the five final themes reported in this study. The table is illustrative rather than exhaustive. Each theme rests on the full coded data set, of which the extracts below are representative anchors. Participant codes correspond to Table 1.

Table 2
Audit trail

Raw data extract (verbatim)	Initial code	Sub-theme / category	Final theme
“The University senate … by a charter created the Technopark and identified over 7 Ha … but [it] was stalled by financial constraints that affected the whole country.” (P-B)	FIN-1 Infrastructure stalled by financial constraint	Infrastructure deficits	Theme 1: Funding as the foundational success factor
“Membership has to pay an annual subscription of $50 to qualify for funding but we struggle to get them to pay that.” (P-C)	FIN-2 Absent client revenue	Sustainability problems	Theme 1: Funding as the foundational success factor
“We rely on University financing and management fees, donor and well-wisher funding from corporates and the NGO world.” (P-C)	FIN-3 Hybrid funding portfolio; government/donor dependence	Government and donor dependence	Theme 1: Funding as the foundational success factor
“University has provided land and facilities and still funds the incubator by paying staff salaries. The Government funded the construction of the Incubation Hub offices …” (P-B)	STK-1 Complementary stakeholder contributions	Multi-actor resourcing (university–government)	Theme 2: Stakeholder ecosystems and partnerships
“[Our] board … is made up of six members, two from [the university], a representative of the University Board and three professional members [drawn from parastatals and a national research institute].” (P-A)	STK-2 Stakeholder-constituted governance	Embedding in elite institutional networks	Theme 2: Stakeholder ecosystems and partnerships
“The idea came from a lecturer at the Faculty of Applied Sciences whom we partnered as a unit … to the point that we … recommended the purchase of the DNA machine by the institution.” (P-B)	STK-3 Faculty integration and brokering	University–faculty linkage	Theme 2: Stakeholder ecosystems and partnerships
“They get seed money, technical expertise, be it in product development or the business management side which most innovators lack in.” (P-A)	SUP-1 Bundled technical and business support	Business development services	Theme 3: Technical and mentorship support

Note: Codes use thematic prefixes (FIN = funding; STK = stakeholders; SUP = support services; MON = monitoring and evaluation; CTX = contextual conditions). Ellipses (…) indicate redactions of identifying or extraneous material.

Raw data extract (verbatim)	Initial code	Sub-theme / category	Final theme
“By being located in an academic institution we have been able to leverage on the research and innovation of students and researchers within the institution.” (P-D)	SUP-2 Leveraging the university knowledge pool	University expertise as value proposition	Theme 3: Technical and mentorship support
“Our pipeline is still too wide to start screening so no, we work with everyone that comes to us for assistance.” (P-B)	SUP-3 Open admission under thin deal flow	Selection adapted to context	Theme 3: Technical and mentorship support
“Strong systems in place i.e. financial management, accounting, audit, monitoring and evaluation … This is a selling point to funders who know that their funding is well managed.” (P-C)	MON-1 Controls as funder assurance	Governance as legitimacy device	Theme 4: Monitoring and evaluation systems
“We also have strict requirements of reporting which form part of the conditions of remaining within the program.” (P-A)	MON-2 Tenant-level reporting discipline	Tenant monitoring	Theme 4: Monitoring and evaluation systems
“Not sure, I don’t have the record with me.” [on graduation numbers] (P-A)	MON-3 Outcome-metric gaps	Weak outcome tracking	Theme 4: Monitoring and evaluation systems
“Our government policies are usually very vague about tangible deliverables …” (P-B)	CTX-1 Policy vagueness	Institutional fragmentation	Theme 5: Contextual constraints in Zimbabwe
“Because they were not forthcoming … we had to enter the market as a competitor in the end.” (P-E)	CTX-2 Unresponsive private sector	Weak entrepreneurial ecosystem	Theme 5: Contextual constraints in Zimbabwe
“We need a deliberate effort to investigate [Botswana’s and South Africa’s] processes, models and approaches … I would direct the formation of a body or institution that will lead this learning effort.” (P-B)	CTX-3 Absent coordination institutions	Ecosystem immaturity / coordination gap	Theme 5: Contextual constraints in Zimbabwe

Note: Codes use thematic prefixes (FIN = funding; STK = stakeholders; SUP = support services; MON = monitoring and evaluation; CTX = contextual conditions). Ellipses (…) indicate redactions of identifying or extraneous material.

4. Findings and Discussion

The thematic analysis yielded five interlocking themes: funding as the foundational success factor; stakeholder ecosystems and partnerships; technical and mentorship support; monitoring and evaluation systems; and contextual constraints specific to Zimbabwe. Each theme is presented with illustrative data and discussed against the literature, before a synthesis develops the study's theoretical contribution.

4.1 Theme 1: Funding as the foundational success factor

Funding emerged unprompted in virtually every domain of the interviews — in accounts of programme establishment, infrastructure, stakeholder relations, challenges and improvement priorities — marking it as the foundational factor upon which all others depend. Participants described establishment processes that were stalled or reshaped by financial constraint:

"The University senate … by a charter created the Technopark and identified over 7 Ha which was dedicated to building the Technopark facilities but was stalled by financial constraints that affected the whole country. There is also the Government who … have provided sufficient funding for the construction of [the] Innovation hub that is being constructed currently." (P-B)

Infrastructure deficits were repeatedly framed as a funding problem rather than a technical one. Participants stressed that appropriate physical facilities (offices, laboratories, workshops, connectivity) are preconditions for credible incubation, particularly for technology- and biotech-oriented ventures, yet such facilities could not be self-financed:

"In my view BI is premised on provision of appropriate facilities and physical accommodation being one of the key facilities to a start-up … If it's an engineering or biotech start-up you will need labs and/or workshops." (P-B)

P-A, however, cautioned that infrastructure spending divorced from value creation breeds waste:

"Just investing in physical structures without exploring the ideas and value that could be created by harnessing said infrastructure is not an ideal scenario. Let's implement a value based criteria before investing huge sums of money and creating white elephants." (P-A)

The absence of sustainable revenue models was equally striking. One incubator charged a nominal annual membership subscription of fifty dollars but admitted they *"struggle[d] to get them to pay that"* (P-C). None of the incubators reported meaningful fee or equity income. Instead, they survived on a patchwork of support: university salary subventions, government construction grants, donor funds, and corporate social responsibility budgets. As one participant put it,

"We rely on University financing and management fees, donor and well-wisher funding from corporates and the NGO world." (P-C)

Three observations stand out from this pattern. First, the centrality of funding is not new. The success factor literature has long stressed the importance of adequate early-stage financing and incubator sustainability (Mbewana, 2006; Buys & Mbewana, 2007; Ndabeni, 2008; Akcomak, 2009). But the Zimbabwean data sharpen this point. Here, funding appeared to function as an enabling condition for many other incubation activities because infrastructure, staffing, and even networking all depend on it. Second, the funding structure we observed is heavily state and donor dependent. This mirrors similar patterns documented in Nigeria and South Africa (Adegbite, 2001; Lose & Tengeh, 2015) and confirms Akcomak's (2009) warning that developing country incubators rarely become self-sustaining. Third, and more constructively, the data show incubators adapting to the absence of capital markets in a specific way. They do not try to replicate venture financing. Instead, they assemble hybrid funding portfolios across different stakeholders. This finding anticipates Theme 2. It also suggests that, in this context, financial resilience is a relational accomplishment rather than a market transaction (Dutt et al., 2016; Cao & Shi, 2021).

4.2 Theme 2: Stakeholder ecosystems and partnerships

If funding is the foundational factor, stakeholder orchestration is the mechanism through which it (and most other resources) is secured. Participants reported a dense, multi-actor support network around each incubator comprising university councils and senates, faculties, government ministries, parastatals, banks, donors and non-governmental organisations:

"University has provided land and facilities and still funds the incubator by paying staff salaries. The Government funded the construction of the Incubation Hub offices and are still funding the construction of the Labs and the factory shell." (P-B)

"We are bringing in partners i.e. Donors and Corporate who have CSR budgets and other NGOs interested in socialpreneurship funding to fund our operations. We are working with Steward Bank and CBZ bank; we are drawing funding from [the] Youth fund [and] women empowerment fund." (P-C)

Orchestration extended inward as well as outward. Senior-management commitment within the university was itself described as the precondition for matching funders to ideas:

"Buy in from senior management in institutions and (political) will is needed to push things to happen. Without that people relax and nothing happens. To match identified funding with ideas we receive and incubate [we] identify funders and provide the linkages, monitoring and management of the funds through our university system." (P-E)

Governance arrangements themselves were stakeholder-constituted. One incubator's board deliberately combined internal and external principals (university representatives alongside chief executives of national energy and transport parastatals and the director of a national research institute) (P-A), embedding the incubator within elite institutional networks. Faculty integration was a further recurrent theme. Incubators positioned themselves as conduits between academic research and

commercialisation, exemplified by an incubator-brokered DNA testing laboratory that originated with a faculty scientist and matured into a graduated enterprise (P-B).

These findings builds on the multi-level stakeholder account of UBIs developed by Miller et al. (2014) and McAdam et al. (2016) into a nascent African ecosystem, with one significant amplification: where those studies emphasise stakeholder management as a balancing act, the Zimbabwean data reveal stakeholder orchestration as the incubator's core productive activity. Since no single actor can supply the full resource bundle that incubation requires, the incubator's effectiveness rests on its capacity to convene complementary contributions. These contributions include, for instance, land and salaries from the university, capital works from government, programme funds from donors, financial services from banks, and ideas from faculties. This is consistent with the ecosystem proposition that intermediaries in resource-scarce systems create value by bridging structural gaps (Spigel, 2017; Cao & Shi, 2021; Nicholls-Nixon et al., 2021) and suggests that in such settings the boundary between the incubator and its ecosystem is constitutively blurred. The findings suggest that the incubator plays an active ecosystem-building role rather than merely operating within an existing ecosystem.

4.3 Theme 3: Technical and mentorship support

The third theme concerns the substantive support that incubators deliver to ventures, which participants located firmly in the knowledge assets of the host university. Technical expertise from academic departments, business development services and structured mentorship were described as the incubators' principal value proposition:

"They get seed money, technical expertise, be it in product development or the business management side which most innovators lack in. We also help them set up a professional office … We draw these services from the host institution, academia, which provides students on-the-job learning opportunities." (P-A)

"The provision of business development support … capacitate[s] entrepreneurs and innovators to build a viable business model. Being at the right place to access from the pool of knowledge and research is also very key because by being located in an academic institution we have been able to leverage on the research and innovation of students and researchers within the institution." (P-D)

Demand for such support was palpable across sites: "We have attracted several entrepreneurs in need of mentorship" (P-E).

Notably, the incubators operated with effectively open admission:

"our pipeline is still too wide to start screening so … we work with everyone that comes to us for assistance" (P-B)

What is clear is that the incubator evaluated applicants on the commercial promise of the idea rather than through formal eligibility criteria. This departs sharply from the stringent-selection prescription of the mainstream literature (Hackett & Dilts, 2004; Aerts et al., 2007), yet it is interpretable rather than

anomalous. In other words, where deal flow is thin and the incubator's legitimating mission includes democratising entrepreneurial support, rigid screening would starve the programme of tenants and contradict its public mandate. Ahmed (2012) anticipated precisely this contingency, arguing that heterogeneity among incubators and markets undermines any generalisable selection template. The mentorship findings themselves align with mounting recent evidence that intangible services such as coaching, business modelling, and networked expertise matter as much as physical infrastructure (van Rijnsoever & Eveleens, 2021; Games et al., 2021; Bergman & McMullen, 2022; Clayton, 2024). In the same vein, the deliberate channelling of faculty research and student talent into ventures illustrates the distinctive UBI advantage identified by Mian et al. (2016) and Wright et al. (2017). When private experts and services are too expensive or just not there, the university fills the gap as the ecosystem's knowledge utility. The incubator then becomes how that knowledge reaches startups.

4.4 Theme 4: Monitoring and evaluation systems

A fourth theme, which is comparatively neglected in African incubation research, concerns performance governance. Participants who reported the strongest stakeholder confidence also reported the most developed monitoring, evaluation and financial-control systems, and they explicitly connected the two:

"Strong systems in place i.e. financial management, accounting, audit, monitoring and evaluation. For us all money that we secure goes through the University Bursar. This is a selling point to funders who know that their funding is well managed … because of the serious systems and control in place through the various internal policies … such as the procurement policy [and] the financial management policy." (P-C)

"Disbursements in the incubator are done by a committee of over 18 people who follow procedure to ensure that all paperwork and conditions have been met so there can never be abuse of resources." (P-C)

Tenant-level monitoring was also institutionalised in the more mature programme, with graded incubatee categories, predefined support packages and [*"strict requirements of reporting which form part of the conditions of remaining within the program"* (P-A)].

At the same time, the weakness of outcome tracking elsewhere was revealing. When asked how many ventures had graduated, one senior informant conceded, [*"Not sure, I don't have the record with me"* (P-A)]. Across the three incubators only four graduations, at the time of the study, could be documented against scores of supported ventures.

Two things make this theme analytically significant. The first is confirmatory, where recent syntheses of the incubation literature continue to find that structured monitoring and the intensity of business assistance are among the strongest predictors of incubator effectiveness (Crișan et al., 2021; Games et al., 2021; Gulia et al., 2023). The Zimbabwean data fall squarely in line. The second is the contextual twist. In these incubators, monitoring and evaluation did more than manage performance. It produced legitimacy. Rigorous, university-anchored financial controls were actively marketed to funders as insurance against resource abuse so that governance quality converted directly into fundraising capacity. In other words, where institutional trust is low, performance governance circles back into the

funding and stakeholder themes. This is precisely the relational interplay among success factors that the ecosystem-stakeholder framing anticipates (Stam & van de Ven, 2021; Wurth et al., 2022). The reverse is also true. Without systematic outcome metrics (e.g., graduation rates, venture survival, jobs created), incubators cannot demonstrate impact, and the recent African evidence is direct about what follows. Undemonstrated impact erodes funder confidence and policy support alike (Karambakuwa & Bayat, 2022; Lose & Mapuranga, 2022; Egbetokun, 2025).

4.5 Theme 5: Contextual constraints in Zimbabwe

The final theme captures the distinctive environmental conditions under which Zimbabwean university incubation operates, and constitutes the study's originality anchor. Four constraints recurred. First, macroeconomic instability manifesting via national financial distress stalled flagship infrastructure, suppressed tenants' ability to pay even nominal fees, and rendered planning horizons short. Second, chronic funding scarcity, discussed under Theme 1, but experienced here as an economy-wide condition rather than an organisational failing. Third, institutional fragmentation and policy vagueness:

"Our government policies are usually very vague about tangible deliverables but the new dispensation's directive to build the six pilot incubators in the selected universities … was one very bold and welcome initiative that we wish to see more of." (P-B)

"There is a serious need for deliberate, clear and time-framed government policies that will support and promote the industry if it is to work and be sustainable. That is what other nations like China and India have done." (P-D)

Fourth, a weak surrounding entrepreneurial ecosystem recurred across the accounts. An unresponsive private sector forced one incubator to abandon complementarity altogether:

"As mentioned earlier our intention was to compl[e]ment [the] private sector but because they were not forthcoming — even where we hoped to improve their product offering through product development and transfer of research — we had to enter the market as a competitor in the end." (P-E)

Awareness of incubation itself was thin [*"Many innovators are sitting with idea[s] that may never be explored because they don't know where to go, who to talk to"* (P-A)] and no industry body existed to coordinate learning across incubators, prompting calls to study proximate models in Botswana and South Africa and to establish a national coordinating institution (P-B).

These findings give empirical texture to the claim that emerging-economy ecosystems are defined by resource scarcity, structural holes and institutional voids (Mrkajic, 2017; Cao & Shi, 2021). They explain why Zimbabwe's success factors look so different from received models. The open rather than stringent selection of tenants/clients reflects thin deal flow; the hybrid stakeholder funding reflects absent venture capital; legitimacy-oriented governance reflects low institutional trust; and the incubators' ecosystem-building activities reflect the immaturity of the system they inhabit (Nicholls-Nixon et al., 2021). The findings suggest that university incubators in Zimbabwe take on substantially expanded functions

compared to those commonly described in developed-economy literature. A developed-economy incubator accelerates ventures inside a functioning ecosystem but a university business incubator in Zimbabwe frequently needs to simultaneously: (1) build the ecosystem, (2) substitute for missing institutions, and (3) develop ventures. That is a triple burden carried on a fraction of the resources.

4.6 Synthesis

Read together, the five themes answer the questions a success-factor list cannot. Why do these factors matter? Because each addresses a specific void in the surrounding ecosystem. Funding compensates for absent capital markets, stakeholder partnerships substitute for absent service markets, university expertise proxies for absent professional advisory sectors, and monitoring systems compensate for weak generalised trust. How then do the factors interact? The answer is that they interlink relationally and sequentially. Managerial competence and networks generate stakeholder commitment; stakeholder commitment unlocks funding and infrastructure; governance quality sustains stakeholder commitment by manufacturing legitimacy; and the resulting resource pool enables technical and mentorship support. The findings suggest that these factors operate less as an additive checklist and more as an interdependent orchestration cycle (where the university incubator manager or staff deliberately identifies, coordinates, and mobilises different resources from different stakeholders that would otherwise remain siloed or inactive). The context of Zimbabwe is different because of the severity of its institutional voids which inverts the usual hierarchy of factors or mechanisms that dominate developed-economy accounts (e.g., stringent selection, venture finance, fee-based sustainability). These factors or mechanisms are largely unavailable. What matters are relational mechanisms such as, for example, the ability to coordinate fragmented resources, to command credibility among diverse stakeholders, and to operate through blended, cross-sector models.

The study's conceptual contribution can therefore be stated as follows: in resource-constrained emerging economies, university incubator success may depend more heavily on stakeholder orchestration, institutional legitimacy and hybrid support ecosystems than on sophisticated venture financing mechanisms. The findings support interpreting incubation success factors as context-weighted and relational, while also extending the ecosystem intermediation literature (Spigel, 2017; Stam & van de Ven, 2021; Wurth et al., 2022) with evidence from an extreme case. It also aligns African incubation research with the institutional-voids perspective on intermediaries (Dutt et al., 2016; Mrkajic, 2017) while grounding it in Zimbabwean staff experience.

5. Conclusions and Implications

5.1 Conclusions

This study set out to establish the critical success factors for the operation of university business incubators in Zimbabwe from a staff perspective. The analysis identified five interlocking conditions of success: funding as the foundational factor; stakeholder ecosystems and partnerships as the principal mechanism of resource mobilisation; technical and mentorship support anchored in university expertise

as the core value proposition; monitoring and evaluation systems as both performance technology and legitimacy device; and contextual constraints as the conditions that reorder the relative weight of all other factors. The findings suggest that incubation success in this setting is strongly relational in character. That is to say effective incubators are those that orchestrate complementary stakeholder contributions, convert governance quality into institutional legitimacy, and assemble hybrid support ecosystems around their ventures.

5.2 Theoretical implications

The study contributes to incubation research by suggesting that critical success factors are context-weighted rather than universal, and by specifying the mechanism (i.e. stakeholder orchestration under institutional voids) through which factors interact in resource-constrained settings. It extends the multi-level stakeholder account of university incubation (McAdam et al., 2016) and the ecosystem lifecycle perspective (Nicholls-Nixon et al., 2021) with evidence from a nascent African ecosystem, and links empirically the African success-factor tradition (Mbewana, 2006; Ndabeni, 2008; Lose & Tengeh, 2015) to the institutional-intermediation literature (Dutt et al., 2016; Mrkajic, 2017; Cao & Shi, 2021).

5.3 Policy and practical implications

For policymakers, the findings counsel clear, time-framed and adequately resourced incubation policy in place of episodic directives, alongside the establishment of a national coordinating body to represent incubator interests, broker peer learning — including from regional models in Botswana and South Africa — and standardise outcome reporting. For university leaders, the findings underline that senior-management buy-in, faculty integration and the lending of institutional financial-control systems to incubators are low-cost, high-leverage contributions. For incubator managers, the priorities are deliberate diversification of the stakeholder funding portfolio, investment in graduation-oriented monitoring metrics, active protection of intellectual property to sustain client trust, and awareness campaigns to widen the innovation pipeline.

5.4 Limitations and future research

The study's limitations stem directly from its design. The researcher interviewed five staff members across three institutions. This sample is justifiable given the study's focus on key informants and information power, but it leaves several gaps. The process of data collection excluded the views of incubatees, policymakers, or funders. The study, also, does not claim data saturation. Because the study is cross-sectional, it is impossible to say from the results how the identified factors might change as the ecosystem matures. There is also a risk that staff perspectives paint a more favourable picture of organisational performance than tenants would report. Future research could address these gaps in several ways. One avenue would be to triangulate staff accounts with actual incubatee outcomes. Another would be to track graduation rates, business survival, and employment effects over time as Zimbabwe's six-university pilot matures. Comparing Zimbabwean incubation configurations with those in neighbouring countries could help test the orchestration proposition proposed here. More broadly,

researchers need to develop and validate incubation models that fit resource-constrained African economies, rather than borrowing from wealthier contexts.

Declarations

Ethics approval and consent to participate

The study followed institutional ethical clearance procedures. Institutional permission was granted by each participating university, and all participants were fully briefed on the purpose and scope of the research and provided written informed consent prior to participation. Participation was voluntary, with the right to withdraw at any stage.

Consent for publication

Not applicable. No identifying images or personal details of participants are published; all participants are anonymised.

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Author Contribution

The manuscript has one author.

Data Availability

The transcripts of the interviews that provided the data forming the basis of this study are available from the author on reasonable request.

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