

Investigating factors critical for the successful performance of Public Led Innovation Accelerators.

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Abstract

This research investigated the importance of factors influencing the successful establishment of Public Led innovation accelerators within the context of Public Sector. Drawing on a sample of public sector employees and entrepreneurs, data was collected through a comprehensive survey encompassing closed and open-ended questions. The study employed regression analysis to examine the relationship of importance among various predictors. The results revealed significant positive correlations among these factors, indicating their importance and collective impact on innovation performance and establishment of public led innovation accelerators. Moreover, the regression model demonstrated a substantial explanatory power ($R^2 = 0.613$), suggesting that approximately 61.3% of the variance in innovation performance can be explained by the selected predictors. These findings offer valuable insights for organizations and policymakers seeking to enhance innovation performance and establishment of innovation accelerators within and training the economy, emphasizing the importance of targeted strategies in marketing, funding allocation, regulatory policies, educational initiatives, university-industry collaboration, and cultural support to foster innovation. The study recommends establishment of public led innovation accelerators in order to boost competitiveness of the economy, increase startup life span and success, and increase job creation in the economy.

Key words:

Entrepreneurship, innovation, innovation acceleration, public led innovation, quantitative methodology.

Introduction

In recent years, Entrepreneurship and Innovation in Zimbabwe have garnered significant attention, particularly over the last decade. Scholars have directed their focus toward comprehending how entrepreneurship contributes to economic advancement and poverty alleviation, notably through diverse initiatives supporting Small and Medium Enterprises (SMEs), women, and youth (Hussain, et al., 2014; Derera, et al., 2020). The Zimbabwean government has actively advocated for entrepreneurship and innovation, aiming to broaden the economic spectrum, boost employment rates, and enhance the populace's well-being via multifaceted strategies encompassing policy frameworks and improved access to financial resources (Zvavahera, et al., 2018; Nyoni, 2018). Academic institutions, recognizing their pivotal role, have integrated innovation and entrepreneurship into their curricula. They've established innovation hubs to commercialize research outcomes and translate them into tangible public benefits (Bodolica & Spraggon, 2021). Concurrently, both corporate entities, public organizations, and individuals have embraced entrepreneurship and innovation as means to cultivate equity and address complex and engaging challenges (Vedula, et al., 2022). Notwithstanding previous research underscoring the pivotal role of innovation accelerators in bolstering the success of startups, the Zimbabwean innovation landscape continues to lack successful innovation accelerators.

Background

In recent years, the traction gained by start-ups, innovation hubs, incubators, and accelerators has positioned them prominently within the business landscape, drawing considerable attention and interest (Cozzolino, Gianmario, & Rothaermel, 2018). These innovation actors serve as focal points for fostering collaborative environments where companies and organizations converge to pool their knowledge and resources, catalyzing the development of novel ideas, products, and services (Richter, Jackson, & Schildhauer, 2018). This approach has showcased notable effectiveness across diverse industries like telecommunications, technology, healthcare, and finance. Within the context of Public Telecom Services Providers in Zimbabwe, the implementation of innovation accelerators, incubators, and startups holds the promise of addressing substantial challenges.

Innovation Actors in Zimbabwe

Innovation ecosystems thrive on the synergy among various actors, each contributing uniquely to the development and sustenance of a dynamic innovative entrepreneurial environment. These actors encompass a diverse spectrum, ranging from academic institutions to government bodies, private enterprises, and individual entrepreneurs (Mattila, Eisenbart, Kocsis, Ranscombe, & Tuulos, 2019). The current study analyses various innovation actors in Zimbabwe's ecosystem namely research and tertiary education institutions, incubators, government and its related policies, friends and family, start-ups, and businesses.

Research & Tertiary Education Institutions

Research institutions serve as key contributors to Zimbabwe's innovation sphere, conducting pioneering research across diverse fields and playing a pivotal role in fostering innovation and entrepreneurship. These entities are crucial hubs for knowledge creation, collaborating with various sectors to translate research into practical applications (Mazorodze & Mkhize, 2022). Additionally, they serve as training grounds, equipping future innovators with the skills needed to drive impactful innovation forward (Raju & Singh, 2023).

Incubators

Incubators in Zimbabwe are dedicated hubs fostering early-stage startups. They provide crucial support through mentorship, resources, and networking opportunities, nurturing fledgling ventures into successful businesses (Awonuga et al., 2024). Key players include the University of Zimbabwe (UZ) Innovation Hub, Harare Institute of Technology (HIT) Innovation Hub, and others, offering essential support, such as mentorship, resources, physical space, technical and legal advice, and networking opportunities (Munyawarara, 2021; Murairwa, 2021).

Government

The Zimbabwean government has enacted several policies aimed at fostering innovation and entrepreneurship, including promotion of SMEs through financing programs and incentives like tax breaks and grants (Musabayana, Mutambara, & Ngwenya, 2022). Efforts to improve access to finance for startups are evident through policies facilitating venture capital funding and support mechanisms. The government has also prioritized creating an enabling environment through regulatory reforms and frameworks that encourage innovation across sectors. Initiatives supporting skills development and technology adoption further highlight the commitment to nurturing a vibrant entrepreneurial ecosystem in the country (Edmore, 2017).

Friends & Family

Family and friends often serve as initial backers and support systems for entrepreneurs in Zimbabwe. Their contributions, typically in the form of financial backing, advice, and emotional support, play a pivotal role in the early stages of a startup. These close connections often provide crucial seed funding and encouragement, allowing entrepreneurs to kick start their ventures before seeking external investment or formal financing options (Dzapasi & Machingambi, 2014).

Startups & Enterprises

Startups and enterprises in Zimbabwe represent the vibrant core of innovation and business growth. Startups focus on disruptive ideas and agile development, while enterprises, established businesses, contribute stability and experience to the ecosystem. Both drive economic progress by creating jobs, fostering innovation, and contributing to the country's overall economic development. They often collaborate, with startups injecting fresh ideas and enterprises offering resources and market experience, creating a dynamic ecosystem that fuels innovation and economic growth (Ranjan, 2019).

Government Policies

The Zimbabwean government has recognized the pivotal role of innovation and entrepreneurship in driving economic growth and fostering a competitive landscape. Several policies and initiatives have been developed and implemented to promote innovation and entrepreneurship within the country (Ajayi-Nifise et al., 2024). Key initiatives include the National Innovation Drive launched in 2018, aimed at fostering a culture of innovation across various sectors, Innovation Hubs and Technology Parks, Policy Framework for Innovation and Youth Empowerment Programs which provides access to finance and educational reforms.

Problem Statement

At present, the Zimbabwean economy grapples with several intricacies, including a landscape replete with startups and innovation incubators (Karambakuwa & Bayat, 2022), yet witnessing a scarcity of successful ventures that disrupt markets or generate significant economic impact (Saruchera, 2015). Despite concerted governmental efforts, encompassing initiatives promoting access to finance and the establishment of innovation hubs at academic institutions (Munyawarara, 2021; Togo & Gandidzanwa, 2021), the absence of robust innovation accelerators, both public and private, remains a conspicuous void within the economic ecosystem. Previous attempts by various

organizations at innovation acceleration have been marred by failures, resulting in a palpable dearth in this critical industry (Saruchera, 2015; Hove, et al., 2024). It is within this milieu that this research endeavors to advocate and examine the potential of public sector-led innovation accelerators as catalyzers for Zimbabwe's economic competitiveness. The imperative for public intervention lies in the pivotal role of government in fostering an environment conducive to innovation, wherein public entities, armed with enabling policies, can serve as vanguards in propelling the nation's entrepreneurial landscape towards greater innovation, scalability, and global relevance.

The discourse herein posits that the establishment of public-led innovation accelerators holds promise as a transformative force capable of harnessing the latent entrepreneurial prowess within Zimbabwe. By creating policies that endorse and empower public entities to spearhead innovation acceleration initiatives, the government can strategically invigorate the startup ecosystem. Through such initiatives, a diverse array of startups could receive the necessary resources, mentorship, and access to networks, fostering an environment ripe for disruptive innovation. The current research seeks not only to advocate for the adoption of public-led innovation accelerators but also to delve deeply into the intricacies of their establishment, implementation, and sustenance within the Zimbabwean context. By scrutinizing their potential impact, challenges, and success factors, this study aims to offer empirical insights and pragmatic recommendations that can inform policymakers, stakeholders, and academia, thereby steering Zimbabwe towards a more competitive and vibrant economic landscape driven by innovation.

Research Objectives

The main objective of the current study is to influence policy so that the Government of Zimbabwe (GoZ) can establish public led innovation accelerators in order to enhance nation's competitiveness through a robust ecosystem of startups and innovation activities.

The study will pursue the following specific objectives:

1. To determine factors influencing the establishment and operation of public-led innovation accelerators
2. To examine the effect of each factor on public-led innovation accelerators performance.
3. To ascertain the combined influence of these factors on performance of public-led innovation accelerators
4. To suggest policy recommendations and model on public-led accelerators to enhance their performance.

Research Questions

The main research question in this study will be, is it possible to establish public led innovation accelerators that can enhance performance of the economy and performance of accelerators?

Below are the sub research questions:

1. What are the specific factors that influence the establishment and operation of public-led innovation accelerators?
2. How does each identified factor individually affect performance of public-led innovation accelerators?
3. What is the combined influence of these factors on performance of public-led innovation accelerators?
4. Which policy recommendations and model can be suggested to enhance and establish public-led innovation accelerators and enhance their performance.

Literature Review

The research is grounded in two key entrepreneurial decision-making paradigms: Effectuation and Causation heuristics. Causation, as defined by Sarasvathy (2001), involves rational and predictive reasoning, focusing on selecting means to achieve a predetermined effect. In contrast, effectuation employs non-predictive logic, choosing potential effects attainable with a given set of means. Effectuation theory includes five principles: prioritizing means-driven action, leveraging contingencies, embracing affordable loss, emphasizing partnerships, and aiming to control an uncertain future (Sarasvathy, 2001). This approach is particularly adaptable in uncertain contexts, such as innovation accelerators within entrepreneurial ecosystems.

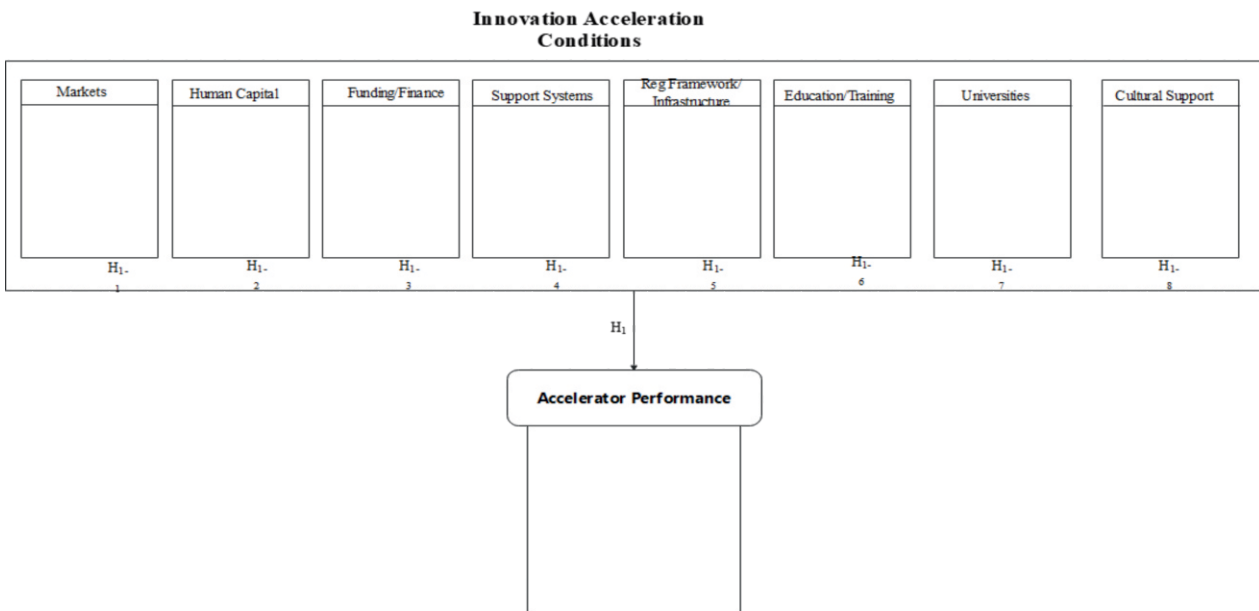
Public-led innovation accelerators often face unclear initial objectives due to market and technological uncertainties (Reymen et al., 2017). Effectuation allows for adaptability, leveraging environmental contingencies and enhancing innovation performance (Perry, Chandler, & Markova, 2012). Causation, on the other hand, follows goal-driven, effect-dependent strategies, focusing on predictable future aspects and structured resource acquisition (Hannibal, Evers, & Servais, 2016). These two heuristics are complementary and can occur sequentially, influenced by factors like the entrepreneurial project's stage and contextual conditions (Gregoire & Cherchem, 2020; McKelvie et al., 2020).

Effectuation is often preferred in early-stage decisions due to limited access to external information, while causation becomes more relevant as the venture matures (Sarasvathy, 2001; Hauser et al., 2020). Specifically, in technology-based ventures, effectuation prevails under high uncertainty or resource scarcity, particularly in shaping the value proposition during business model development (Reymen et al., 2017).

By amalgamating these two paradigms of causation and effectuation, the research aims to examine how public-led innovation accelerators navigate uncertainty, resource constraints, and evolving market dynamics. The investigation delves into the decision-making processes within these accelerators, exploring how they blend Effectuation and Causation strategies to foster an environment conducive to innovation, support startups, and drive entrepreneurial success within a dynamic and challenging landscape. This theoretical framework provides a lens through which the research aims to understand and elucidate the strategies employed by public-led innovation accelerators in cultivating an ecosystem for startup growth and innovation.

Conceptual Framework

The conceptual framework developed below shows the conditions required to establish successful public-led innovation accelerators.



Source: Authors (2024)

Hypotheses

The following hypotheses will be tested in the study:

H₀: There are factors critical to establish successful public led innovation accelerators.

H1-1: Importance of readily available accessible markets positively influence the successful establishment of public-led innovation accelerators.

H1-2: Importance of human capital and workforce positively influence the successful establishment of public-led innovation accelerators.

H1-3: Importance of funding and finance positively influence the successful establishment of public-led innovation accelerators.

H1-4: Importance of support system positively influence the successful establishment of publicled innovation accelerators.

H1-5: Importance of regulatory framework and infrastructure positively influence the successful establishment of public-led innovation accelerators.

H1-6: Importance of education and training positively influence the successful establishment of public-led innovation accelerators.

H1-7: Importance of major universities positively influence the successful establishment of publicled innovation accelerators.

H1-8: Importance of cultural support positively influence the successful establishment of publicled innovation accelerators.

The conceptual framework crafted here delves into the establishment of public-led accelerators, influenced by several independent variables. Accessible markets, regulatory framework/infrastructure, universities, cultural support, support systems, and human capital constitute the pivotal factors shaping the landscape for these accelerators. These elements contribute synergistically, fostering an environment conducive to accelerator establishment. Their collective impact influences the performance of accelerators, the dependent variable in this framework. Accessible markets ensure a fertile ground for startups, while regulatory frameworks and infrastructure set the stage for operations. Universities act as catalysts, nurturing talent and innovation, while cultural support and support systems create an atmosphere fostering entrepreneurship. Moreover, human capital stands as a linchpin, shaping the workforce essential for accelerator success. Together, these independent variables intricately shape the performance and efficacy of public-led accelerators, influencing their establishment and impact within the entrepreneurial ecosystem.

Innovation Accelerators

Defining innovation accelerators and distinguishing them from incubation hubs, seed angels, small-medium enterprises, and angel investors can be challenging (Yang, 2019). Cohen (2013) describes accelerators as fixed-duration programs operating in cohorts, providing mentorship and instruction, culminating in a public pitch or demo day. Dempwolf, Auer, & D'ippolito (2014) expand this by emphasizing their structure: accelerators invest in early-stage companies in exchange for equity, operating within a fixed-term, cohort-based program, and concluding with a public pitch event (Yang, 2019).

Gonzalez-Uribe & Hmaddi (2022) characterize business accelerators as educational institutions for entrepreneurs, offering concentrated programs aimed at developing ventures. They select groups of businesses through a competitive process, enhancing entrepreneurs' skills through education, mentorship, networking, and sometimes shared working spaces. Some accelerators also provide financial support, acquiring equity in the businesses they assist. These programs end with a public

presentation, known as a demo day (Gonzalez-Uribe & Leatherbee, 2018). Accelerators vary in strategic objectives, sponsoring entities, and the assistance they provide, defining different types of accelerators (Yitshaki & Drori, 2018).

Hochberg (2016) notes that many accelerators offer a stipend or modest initial investment in exchange for equity, typically 5-7%. Besides mentorship, education, and networking, most provide shared workspaces and additional services. Some programs offer a larger investment as a convertible note post-completion. While accelerators may focus on specific industries like healthcare or energy, most startups involved typically offer software or internet-based services tailored for distinct industry verticals.

Acceleration platforms are recognized for fostering entrepreneurial environments and rejuvenating industries and regions (Coste & Gatzke, 2017; Prexl et al., 2019). The European Union (2018) states that "accelerators are an increasingly popular approach to supporting startups and helping them to grow," addressing the needs of the entrepreneurship ecosystem by providing training, advisory, mentoring services, and access to finance. Accelerators support small businesses, from startups to mature organizations.

Emerging Trends of Accelerators

Key trends in accelerator business include vertical specialization, corporate accelerators, network accelerators, vertical integration into seed funds, transition into incubators, university accelerators, government accelerators, and international presence (Hochberg, 2016). Accelerators are increasingly focusing on specific industries like healthcare and energy, alongside traditional software startups. Corporations are creating accelerators to stay close to emerging technologies, and network accelerators are expanding through franchises across multiple locations. Some accelerators are integrating seed funds to invest in graduates and other startups, while others are transitioning into incubators for more flexible, long-term support. University-affiliated programs are emphasizing educational opportunities, and government accelerators focus on regional development rather than individual startup success. Lastly, US-based accelerators are expanding internationally, with programs in Europe and Latin America.

Key Antecedents to Establishing Successful Public Led Innovation Accelerators

• Ecosystem Readiness

A conducive ecosystem is essential for innovation, requiring access to funding, talent, supportive policies, infrastructure, and a culture that encourages risk-taking. Accelerators facilitate horizontal knowledge sharing through mechanisms like hackathons, pitch competitions, co-working spaces, and mentoring programs, which are absent in traditional cluster theories (Autio et al., 2018). They rely on a stable innovation ecosystem, maintaining contacts with startups, entrepreneurs, investors, experts, and sectoral representatives (Kuebart & Ibert, 2019). Deliberate strategies are needed to build this ecosystem: in the short term, a one-stop platform for stakeholders to access accelerator information; in the medium term, investment in knowledge management for better information sharing and cooperation; and in the long term, fostering a culture of formal, institutionalized cooperation with clear communication channels and knowledge-sharing avenues (Rull & Kakal, 2021).

• Environment

Lukas (2019) emphasized the necessity of supportive external and contextual factors for the success of accelerators. Both internal and external environments influence their effectiveness.

Foster et al. (2013) identified eight pillars of entrepreneurial ecosystems: human capital, education and training, accessible markets, funding and finance, regulatory framework and infrastructure, major universities as catalysts, cultural support, and business support systems. Lukas (2019) categorized factors into internal (startup selection, social networks, mentorship strength, stage focus, fund allocation, batch operations, program type) and external (education, business environment, human capital, cultural support, policy direction, accessible markets). Success metrics include follow-up funding speed, employment growth, survival length, and total funding growth.

• Accessible Markets

Accessible markets are crucial for the success of innovation accelerators, offering startups opportunities for validation, growth, and impact (Kairikko, 2020). They allow startups to interact with real customers, gather feedback, and refine their offerings, which is essential for validation. Markets help startups acquire customers, scale their ventures, and establish industry presence (Tanev, 2017). Access to local and international markets fosters growth, facilitates partnerships,

and attracts investor interest (Kabbara, 2016). It also promotes iterative innovation by enabling startups to quickly adapt to changing customer needs and market dynamics (Vogel, 2017). For accelerators, providing tools and support for market access is paramount for startups to thrive and drive disruptive innovation (Foster et al., 2013).

H1-1: Importance of readily available accessible markets positively influence the successful establishment of public-led innovation accelerators.

• **Funding and Finance**

The success and sustainability of public-led innovation accelerators depend heavily on securing adequate funding and financial support (Lukas, 2019; OECD, 2019). Funding is essential for establishing infrastructure, technological resources, and operational facilities, and for supporting startups within the accelerators (Gonzalez-Uribe & Leatherbee, 2018; Cohen, 2013). It covers operational expenses, reduces capital costs (Chang, 2021), and facilitates mentorship, research, and product development. Sustained funding ensures robust accelerator programs, including workshops, mentorship, and networking, which are crucial for nurturing startups. Continuous funding allows accelerators to scale operations, attract more startups, and form impactful collaborations, driving innovation investment and yielding economic benefits (Chang, 2021; European Union, 2018). Diversification of funding sources, such as personal savings, grants, loans, angel investors, and government funding, ensures stability. Governments should implement policies for public-private collaboration without crowding out private investment (OECD, 2019).

Strategies to enhance access to funding address market deficiencies like uneven information access and financial gaps. Policy methods include conventional tools, encouraging diverse funding sources, and reinforcing financial literacy (OECD, 2019). The EU's European Innovation Council (EIC) Pilot, part of Horizon 2020, supports top-class innovators, startups, small companies, and researchers with high-risk, scalable ideas by providing targeted funding (European Union, 2018).

H1-2: Importance of funding and finance positively influence the successful establishment of public-led innovation accelerators.

• **Human Capital/Workforce**

Human capital stands as the linchpin in the success of public-led innovation accelerators, wielding immense influence in shaping their effectiveness and impact. The leadership's expertise and a skilled workforce within these accelerators are the architects driving their strategic direction and

operational excellence. They offer invaluable mentorship and guidance to startups, drawing from diverse backgrounds to provide tailored support across various domains crucial for startup growth (OECD, 2019; Gonzalez-Uribe & Leatherbee, 2018). This workforce curates and executes accelerator programs meticulously, orchestrating workshops, networking events, and pivotal support systems (Spigel, 2017; Kuebart & Ibert, 2019). Their adeptness in relationship building fosters collaborations within the entrepreneurial ecosystem, connecting startups with resources, investors, and invaluable expertise. A diverse skill set within the workforce enriches the accelerator environment (Sariri & Agrawal, 2022), fueling a culture of innovation, adaptability, and entrepreneurial thinking. Their agility in adapting to market dynamics, coupled with an entrepreneurial mindset, not only shapes the success of startups within accelerators but also contributes profoundly to the sustainability and long-term impact of these public-led initiatives.

H1-3: Importance of human capital and workforce positively influence the successful establishment of public-led innovation accelerators.

• Support System

Support systems are vital for public-led innovation accelerators, providing essential frameworks to nurture startups and foster innovation (Gonzalez-Uribe & Leatherbee, 2018). Mentors and advisors offer guidance, helping startups navigate challenges and strategic decisions (OECD, 2019; Wright, 2018). Access to professional services, such as legal, accounting, and marketing, allows startups to focus on innovation (Hochberg, 2016). Integrated incubators and accelerators provide structured programs, resources, and networking opportunities (Spigel, 2017). Entrepreneurial peers within these accelerators create a collaborative environment for idea exchange and mutual support (Yitshaki & Drori, 2018; Kairikko, 2020). These support systems facilitate resource access, validation, and integration into the entrepreneurial landscape, exposing startups to investors, partners, and growth opportunities (Gonzalez-Uribe & Hmaddi, 2022; Kuebart & Ibert, 2019; Cohen et al., 2019). Continuous learning within these systems fosters adaptation and growth in a competitive market.

Governments can enhance these systems by developing comprehensive policy bundles that include basic information and extensive support like coaching and mentorship from incubators and accelerators (OECD, 2019).

H1-4: Importance of support system positively influence the successful establishment of publicled innovation accelerators.

• Regulatory Framework and Infrastructure

Establishing successful public-led innovation accelerators requires a comprehensive framework encompassing regulatory frameworks, policies, procurement, ownership, and infrastructure. Clear guidelines and adaptable legal structures encourage innovation, while policies should promote collaboration and innovation-driven procurement criteria. Streamlined procurement mechanisms and fair intellectual property rights incentivize startup participation. Robust infrastructure, supported by public investment, provides necessary resources and connectivity. Governments play a critical role through tailored policies that extend support beyond the startup phase, safeguard property rights, and foster grassroots entrepreneurship. Effective procurement, funding, and cost-of-capital policies significantly influence innovation and economic growth.

H1-5: Importance of regulatory framework and infrastructure positively influence the successful establishment of public-led innovation accelerators.

• Education and Training

Education and training form the foundation for innovation accelerators by cultivating essential skills, mindsets, and environments necessary for entrepreneurial success (Rull & Kakal, 2021). Emphasizing creativity, critical thinking, and problem-solving, education fosters an entrepreneurial mindset crucial for startups to ideate and navigate challenges (Uhm, Sung, & Park, 2018; OECD, 2019). Specialized programs and workshops provide aspiring entrepreneurs with vital knowledge, mentorship, and networks (Rechter & Avnimelech, 2022; Kairikko, 2020). Universities and research institutions generate novel ideas and technologies for startups. Education serves as a talent pipeline and promotes continuous learning, adaptation, and innovation, driving the success of accelerators by fostering an environment ripe for groundbreaking ideas and ventures (Lin & Nabergoj, 2014; Lackéus, 2015; Almeida & Amaral, 2019).

H1-6: Importance of education and training positively influence the successful establishment of public-led innovation accelerators.

• Major Universities

Major universities are crucial drivers of public-led innovation accelerators, influencing entrepreneurship and innovation profoundly. These institutions cultivate a culture of entrepreneurship through dedicated programs, innovation centers, and initiatives that encourage innovation, risk-taking, and creation. Universities serve as fertile grounds for new ideas and technologies, originating from academic research and collaborations. They provide a talented pool of graduates and researchers who bring specialized skills to startups, essential for their growth. By

facilitating collaboration, offering resources, and hosting incubators, universities enhance the impact of public-led accelerators, contributing to the innovation ecosystem. Their role in technology transfer ensures startups access cutting-edge research, further accelerating their growth within the entrepreneurial landscape.

H1-7: Importance of major universities positively influence the successful establishment of publicled innovation accelerators.

• Cultural Support

Cultural support stands as a fundamental cornerstone for the success of public-led innovation accelerators, profoundly influencing the entrepreneurial landscape and the growth of startups within these programs. Cultures that embrace risk-taking and view failure as a stepping stone to success foster an environment where startups feel empowered to explore, innovate, and take calculated risks within accelerators (OECD, 2019). Societies that celebrate and encourage selfemployment create a reservoir of individuals eager to engage in entrepreneurial pursuits, contributing to a pool of talent engaged with accelerators. Highlighting success stories and role models within the community inspires and motivates startups, fueling their ambition and determination. A robust research culture, coupled with a positive perception of entrepreneurship and a celebration of innovation, provides fertile ground for disruptive ideas to flourish within accelerators. This cultural framework not only nurtures an environment conducive to innovation but also cultivates an entrepreneurial spirit, driving startups within public-led accelerators to push boundaries and create impactful solutions that drive societal progress and economic growth.

H1-8: Importance of cultural support positively influence the successful establishment of publicled innovation accelerators.

Methodology

The research adopts a positivist approach, emphasizing quantitative data, empirical evidence, and logical reasoning (Ryan, 2018; Saunders et al., 2019). Its goal is to construct a theoretical framework outlining the conditions necessary for successfully establishing public-led innovation accelerators (Tamminen & Poucher, 2020). Positivism, according to Saunders (2019), ensures objectivity, logical deduction, and reliance on observable facts. The study categorizes variables into independent and dependent classifications to analyze factors impacting innovation accelerators within entrepreneurial ecosystems (Hatch & Cunliffe, 2013). This approach maintains objectivity and facilitates a structured analysis to predict factors influencing the success of publicled innovation accelerators.

Gupta & Gupta (2022) described the research design as a framework guiding data collection and analysis, transforming research inquiries into actionable projects (Gupta & Gupta, 2020). Saunders et al. (2019) emphasized its role in shaping research questions, methodologies, data sources, limitations, and ethical considerations. This study employs a quantitative positivist approach with an explanatory focus to explore links between factors influencing public-led innovation accelerators and innovation performance. Using correlational analyses and a descriptive survey design with questionnaires, the research methodology is structured to facilitate quantitative assessment.

Population

The concept of population in research studies is crucial for study design, participant selection, and data analysis (Willie, 2023). The study's population of interest encompasses diverse group of individuals, including innovators, policy makers, pubic employees, private company employees, entrepreneurs, chosen to provide a comprehensive and nuanced understanding of the phenomena under examination. The study's "target population" refers to all employees within Zimbabwe's innovation hubs and ICT companies giving a total population of about 2000. These companies were chosen for several reasons including representativeness and accessibility.

Partner Selection

Participant selection in this study was guided by specific research objectives and criteria to ensure representation and reduce bias. Using a simple random sampling technique (Creswell & Creswell, 2023), the study aimed to gather insights from individuals with relevant experiences and perspectives on the establishment of public-led innovation accelerators (Goswami, Mitchel, & Bhagavatula, 2018). With a target population of 2000 employees and a 95% confidence level with

a $\pm 5\%$ margin of error, the sample size was determined to be 322 participants using the Krejcie and Morgan formula (Krejcie & Morgan, 1970). Participants were identified through the researcher's network and contacted via email, WhatsApp, and LinkedIn. Interested individuals were assessed against predefined eligibility criteria to ensure they could contribute valuable insights. This rigorous selection process aimed to create a diverse cohort capable of enriching the study's findings, thereby enhancing the credibility and applicability of its outcomes.

Data Collection Instruments

For data collection, a survey instrument served as the primary tool, incorporating a close-ended questions approach. Closed-ended questions, structured with predefined response categories, aimed to quantify participants' perspectives on factors that are critical to establish public led innovation accelerators. These questions facilitated statistical analysis, allowing for the identification predictors of a public led innovation acceleration model within the data. Prior to distribution, the survey underwent rigorous validation, including pilot testing to refine questions for clarity and relevance. Ethical considerations were paramount throughout the process, with measures in place to protect participant confidentiality and secure informed consent. This comprehensive survey instrument was pivotal in collecting robust data for the study, offering both quantitative metrics and qualitative narratives essential for a nuanced exploration of the topic under study.

Data Findings, Analysis and Discussion

Reliability Test

Reliability Statistics

Cronbach's Alpha	N of Items
.887	8

Cronbach's Alpha is a measure of internal consistency, indicating how closely related a set of items are as a group. The Cronbach's Alpha value for the scale is .875, which is well above the commonly accepted threshold of .70. This suggests that the scale has high internal consistency, meaning that the items on the scale are measuring the same underlying construct. With 9 items included in the test, the high alpha value indicates that the scale is reliable and that the items are well-correlated, providing confidence in the consistency of the responses across different items. Therefore, the scale can be considered reliable for measuring the constructs of interest.

Validity Tests

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.860
Approx. Chi-Square	733.062
Bartlett's Test of Sphericity Df	28
Sig.	.000

The KMO measure of sampling adequacy is 0.860, indicating that the sample is highly suitable for factor analysis. Bartlett's Test of Sphericity is significant (Chi-Square = 733.062, df = 28, $p < 0.000$), suggesting that the correlations among variables are sufficient for factor analysis. These results collectively confirm that the data is appropriate for identifying underlying factors.

	Correlations								
	MARKET ING	HUMA N CAPIT AL	FUNDI NG	SUPPO RT SYSTE M	REGULAT ORY	EDUCATI ON	MAJOR UNIVERSI TIES	CULTUR AL SUPPOR T	INNOVATIO N PERFORMA NCE
MARKETIN G	1								
HUMAN CAPITAL	.426**	1							
FUNDING	.564**	.477**	1						
SUPPORT SYSTEM	.592**	.533**	.880**	1					
REGULATO RY	.497**	.382**	.553**	.613**	1				
EDUCATIO N	.330**	.327**	.388**	.441**	.328**	1			
MAJOR UNIVERSIT IES	.383**	.455**	.478**	.523**	.519**	.540**	1		
CULTURAL SUPPORT	.426**	.574**	.591**	.639**	.614**	.395**	.656**	1	
INNOVATIO N PERFORMA NCE	.544**	.455**	.659**	.666**	.611**	.481**	.598**	.638**	1
	**. Correlation is significant at the 0.01 level (2-tailed).								

Correlation Tests

The correlation analysis reveals strong positive relationships among key independent factors—market accessibility, human capital and training, funding and finance, support systems, regulatory environment, education, major universities, cultural support—and innovation performance, indicating that an increase in these factors tends to positively impact innovation outcomes.

Specifically, significant correlations were observed between funding and finance, regulatory environment and support systems, as well as cultural support and innovation performance.

This study aimed to identify critical factors influencing the success of public-led innovation accelerators. The results underscored the importance of market accessibility, human capital, funding and finance, support systems, regulatory framework and infrastructure, education and training, major universities, and cultural support in enhancing innovation performance within these accelerators.

Previous research also highlights the pivotal role of factors such as public funding, human capital, organizational support, and innovation culture in driving innovation performance (Torres-Barreto et al., 2021; Alpkhan et al., 2010; Coutinho & Au-Yong-Oliveira, 2024; Calik et al., 2020). Studies by Kowang et al. (2015), Dempwolf et al. (2014), Valliere et al. (2014), and Shahnaei & Long (2015) emphasize the significance of research universities, marketing, learning capabilities, and human capital management in fostering innovation. Together, these findings advocate for a holistic approach integrating diverse organizational, human, and environmental factors to foster successful innovation and drive economic growth.

Regression

The study validated the main hypothesis, demonstrating that there are factors which are critical and important for establishing public led innovation accelerators significantly influence innovation performance. The model showed positive correlations on all factors proving the central hypothesis

(H₀) and the secondary hypothesis (H₁-1, H₁-2, H₁-3, H₁-4, H₁-5, H₁-6, H₁-7, H₁-8) as important critical factors for the establishing of successful public led innovation accelerators.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.783 ^a	.613	.593	.41316

a. **Predictors: (Constant),** Cultural support, Education, Marketing, Human Capital, Regulatory, Funding, Major

The research aimed to assess the collective impact of critical factors influencing public-led innovation accelerators. Results from the model summary indicated an R Square of 0.613, revealing that approximately 61.3% of the variance in innovation performance can be attributed to factors such as cultural support, education, marketing accessibility, human capital, regulatory environment, funding, major universities, and support systems. This strong R Square value suggests substantial explanatory power of the model. However, it's important to acknowledge potential influences beyond the model's scope that could affect innovation performance. Nonetheless, these findings underscore the model's effectiveness in elucidating the relationship between predictors and innovation outcomes in the studied context.

ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	41.403	8	5.175	30.318	.000 ^b
Residual	26.117	153	.171		
Total	67.520	161			

a. **Dependent Variable:** Innovation Performance

b. **Predictors: (Constant)**, Cultural Support, Education, Marketing, Human Capital, Regulatory,

Funding, Major Universities, Support System

The ANOVA results show a significant relationship between predictors (Cultural Support, Education, Marketing, Human Capital, Regulatory, Funding, Major Universities, Support System) and the dependent variable, Innovation Performance. The regression model is highly significant ($F = 30.318$, $p < 0.001$), indicating that these predictors collectively explain a substantial amount of variance in innovation performance. The model's R-squared value confirms its strong explanatory power. These findings support the hypothesis that the specified predictors play a crucial role in predicting variations in innovation performance within the study context.

Predictive Model

The regression analysis reveals significant relationships between several independent variables (Marketing, Funding, Regulatory, Education, Major Universities, Cultural Support) and the dependent variable (Innovation Performance). Specifically, Marketing ($\beta = 0.136$, $p = 0.038$), Funding ($\beta = 0.253$, $p = 0.019$), Regulatory ($\beta = 0.171$, $p = 0.017$), Education ($\beta = 0.128$, $p = 0.039$), Major Universities ($\beta = -0.149$, $p = 0.046$), and Cultural Support ($\beta = 0.167$, $p = 0.042$) demonstrate statistically significant impacts on innovation performance. However, Human Capital and Support Systems show no statistical significance in predicting innovation performance and are excluded from the model. Market barriers exhibit a positive relationship with innovation performance but do not reach statistical significance ($p < 0.05$).

The study also endeavored to establish the influence of each factor on innovation performance. The regression analysis showed that some factors have negative influence like human capital whilst all others have positive influence. However, about 6 factors were found to be predictors of public led innovation accelerator success as their individual influence was statistically significant $p < 0.05$.

Coefficients ^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.470	.354		-1.328	.186
MARKETING	.162	.077	.136	2.092	.038
HUMANCAPITAL	-.006	.071	-.005	-.078	.938
FUNDING	.318	.134	.253	2.367	.019
SUPPORTSYSTEM	.020	.124	.019	.162	.872
REGULATORY	.151	.063	.171	2.415	.017
EDUCATION	.145	.070	.128	2.081	.039
MAJORUNIVERSITIES	.124	.062	.149	2.015	.046
CULTURALSUPPORT	.177	.087	.167	2.046	.042

a. **Dependent Variable:** Innovation Performance

Factors Influencing Establishment of Public Led Innovation Accelerators

The study endeavored to determine factors influencing the establishment and operation of public led innovation accelerators. The results indicated that all factors under study were critical and important as they influenced positively innovation performance of public led innovation accelerators. These factors are market accessibility, human capital, funding and finance, support systems, regulatory framework and infrastructure, education and training, major universities and cultural support.

Theoretical implications

The study adds to the current understanding of establishing public-led innovation accelerators by incorporating novel and unexamined elements that impact these accelerators, particularly within a developing nation context such as Zimbabwe. The ensuing theoretical contributions to adoption research encompass:

- This research focused on establishment of public-led innovation accelerators in the context of a developing country. This is the first work that has implemented a quantitative methods and validated existing factors and applied them for public led innovation accelerators in Zimbabwe.

In a novel endeavor for a developing nation like Zimbabwe, this study marks the inaugural empirical validation of predictive models that establish connections between factors such as marketing, funding, regulatory environment, education, major universities, and cultural support with innovation performance. This empirical validation contributes to the theoretical validation of existing models in the innovation management literature, thereby bolstering the robustness of theoretical frameworks utilized to conceptualize innovation processes and outcomes.

Enhanced Understanding of Innovation Ecosystems

The study contributes to theoretical frameworks surrounding innovation ecosystems by identifying and elucidating the multifaceted factors influencing the establishment and operation of public-led innovation accelerators. By integrating insights from various disciplines such as economics, management, and public policy, the study enriches our understanding of the complex dynamics within innovation ecosystems. Focusing on public-led innovation accelerators, the study contributes to the theoretical understanding of innovation within the public sector. It sheds light on the unique challenges and opportunities associated with fostering innovation in government agencies and public institutions, thereby enriching theories related to public sector innovation.

Conclusions and Recommendations

Establish Public Led Innovation Accelerators

The study recommends establishment of public led innovation accelerators in order to boost competitiveness of the economy, increase startup life span and success, and increase job creation in the economy. This can be achieved through creation of a government unit that's responsible for innovation as a Ministry or under Mutapa Investment Fund (MIF). All public institutions (Parastatals, Government Agencies) will have to provide a fund to Mutapa that will be used as funding to startups which are accessed through an appointed Public Accelerator. This institution will establish clear strategic framework outlining the objectives and milestones of the accelerators aligned with national innovation priorities. Designing tailored accelerator programs with defined timelines and support mechanisms, including mentorship and funding access, ensures effective support for innovators. Robust governance structures with transparent resource allocation mechanisms guarantee accountability and efficient management. Moreover, fostering inclusivity and diversity within accelerators promotes equitable access, while facilitating collaboration and networking opportunities cultivates a vibrant innovation ecosystem. Regular monitoring and evaluation of accelerator impact using key performance indicators are essential for continuous improvement and informed decision-making, ultimately contributing to the success and sustainability of public-led innovation accelerators in driving economic growth and societal advancement.

Reforming Ownership Structures

Reforming ownership structures involves updating regulations to permit government entities to hold shares in startups. This reform should provide clear guidelines for government participation in startup ownership, procurement, and acquisition, ensuring transparency, accountability, and alignment with innovation goals. By enabling government investment in startups, access to funding and resources is improved, promoting strategic public-private partnerships.

Facilitating Partnerships

Government-owned companies should be encouraged to form partnerships with startups, innovation hubs, universities, and other ecosystem players. Streamlined processes and frameworks should be established to facilitate collaboration and knowledge exchange. Leveraging the expertise and resources of government-owned companies can provide startups with valuable mentorship, infrastructure, and market opportunities, boosting their growth and competitiveness.

Promoting Investment

Encourage government-owned companies to invest in promising startups by creating an environment that incentivizes such investments. This can include offering tax incentives or regulatory exemptions to foster a culture of innovation and risk-taking. Supporting flexible investment decisions helps drive capital into high-potential startups, promoting innovation and economic growth.

Policy Framework

Government-owned companies should be allowed to invest in startups following thorough due diligence and guidance from public-led innovation accelerators. A clear strategic framework should be established, outlining the objectives and milestones of these accelerators, aligned with national innovation priorities. Tailored accelerator programs with defined timelines and support mechanisms, including mentorship and funding access, ensure effective support for innovators. Robust governance structures and transparent resource allocation mechanisms guarantee accountability and efficient management. Promoting inclusivity and diversity within accelerators ensures equitable access, while collaboration and networking opportunities foster a vibrant innovation ecosystem. Regular monitoring and evaluation of accelerator impact using key performance indicators are essential for continuous improvement and informed decision-making.

Government Commitment and Support

Ensure strong government commitment and support for public-led innovation accelerators by allocating sufficient funding and resources for their establishment and sustainability. Create policies and regulatory frameworks that encourage innovation and entrepreneurship, providing a conducive environment for accelerators to thrive. Government involvement should include partnerships with industry players and academic institutions to leverage expertise and resources for the success of the accelerators.

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