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Financial Viability & Social Impact Framework: Enhancing the Sustainability of University-Led Incubation Centers (ULICs) in Balochistan

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ABSTRACT

The research aims to analyze the sustainability of the incubation centers established by the universities in the province of Balochistan. The financial viability and social impact model for the sustainability of the University-Led Incubation Centers (ULICs) in Balochistan province is discussed. A mixed methodology approach is used in the research. The qualitative approach is used for the research. The semi-structured interviews are conducted with the incubation center and university employees, incubatees, entrepreneurs, government representatives, and industry experts. The two themes in the thematic approach are barriers to sustainability and alignment/impact strategies. “Institutional Rigidities, Financial, and Operational Inefficiencies” are the sub-themes used for the sustainability aspect. Relevance and deep structural autonomy are the two themes used in strategic alignment. The data was collected through a structured questionnaire on stakeholders within incubation centers and was analyzed through regression analysis. Financial viability emerged as the weakest and most important determinant, thereby validating concerns of grant dependency. The size of social impact orientation has a major influence on the performance of incubation centers. The engagement and participation of stakeholders and institutions promote sustainability performance. The sustainability of incubation centers was concluded to be dependent on financial diversification and management, integration of the incubator within the networks of local stakeholders, and institutional policies.

INTRODUCTION

The general public is also aware of incubation centers in institutions of higher learning because of their contribution towards the establishment of new businesses, among other factors (Coscarello, 2025; Ayad *et al.*, 2022). The significance of ULICs for startup entrepreneurs, especially in less developed regions, is that they can be assisted with difficulties, among other factors (Tariq *et al.*, 2024; Kambanou *et al.*, 2025; Mahmood *et al.*, 2016). These incubation institutes are fundamental in Balochistan. There are a few private-sector businesses, and many young people live in the area. Universities are among the most stable and well-resourced places that can help people start their own businesses (Gioconda *et al.*, 2022; Meraj *et al.*, 2025). The University of Balochistan (UoB), the Balochistan University of Information Technology, Engineering and Management Sciences (BUIITEMS), and the Lasbela University of Agriculture, Water & Marine Sciences (LUAWMS) are the only three major public universities with fully operational incubation centers. The University of Loralia (UoL), Sardar Bahadur Khan Women’s University (SBKWU), and the National University of Sciences & Technology (NUST) Quetta campus are also working to establish these centers. Donors or the government have paid for the effort to build all of these incubation centers.

However, even if these incubators get off to a good start, they will have a hard time staying open after the

first project cycles are over (Petrucci *et al.*, 2025; Jamil *et al.*, 2017). They rely mainly on short-term grants from HEC, USAID, Ignite, and the UN, as well as on cash from government or provincial development programs. These grants usually last for 3 to 5 years and help them get started. Incubators find it difficult to stay open once such funds are exhausted because their business models and institutions are just not strong enough, and there are governance gaps. This research paper identifies the problem areas and has a sustainability framework in a specifically formulated manner, targeted at Balochistan. This framework attempts to strike a balance between financial sustainability and tangible societal outcomes, drawing on the theoretical paradigms (such as effectuation and the Quadruple Helix), best practices across the globe, and local insights/views. This study relates to Goals 8, 9, and 17 of the Sustainable Development Goals and has recommendations on improving the capacity of higher education in Pakistan, especially in Balochistan, on conducting researcher-directed Social Impact Research (Al-Hasan & Ibrahim, 2024; Zaidi *et al.*, 2023). People across the world realize that university-led incubation centers (ULIC) play critical roles in launching businesses, enhancing innovative thoughts, and fast-tracking the economic development process in their regions (Mian *et al.*, 2016; Zaidi *et al.*, 2023). In Balochistan, Pakistan, people realize that even more could be done by these groups. People realize that these play critical roles in

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connecting the critical social and economic demands with the capacity that the province provides in higher education. People also realize that they need to decrease the rate of unemployment, decrease their reliance on their resource industries, and grow innovative thoughts from the grassroots level (Khan & Mahmood, 2020; Tylzanowski, 2023). The predicted and potential revolutionizing role played by ULIC in Balochistan is yet to be realized. People realize that these represent symbolic centers and that it is difficult for these centers to be sustained (Ali *et al.*, 2022).

First, it is required to identify the causes of this stagnation and revisit the challenges these incubation centers faced with regard to finance, operations, and personnel within these institutions themselves. This requires an investigation of frameworks of governance, sources of funds, management capacity, and operations that may not be aligned to achieve sustainability (Al-Mubarak & Busler, 2017). It also has to focus on establishing the degree to which these institutions matter to people other than those from Balochistan. The important members of this ecosystem, entrepreneurs, business partners, government representatives, and members of the community, need to be consulted regarding improving incubation service provision vis-à-vis Balochistan's special social and economic setup (Hakim *et al.*, 2024). The firms within an incubator need to collaborate to face difficulties within their territory while leveraging market opportunities. This provides them with seeming realism, apparently gaining more substantial authority (Theodorakopoulos *et al.*, 2014). It is equally crucial to be informed about the factors that influence the sustainability performance, aside from the fact that they have to diagnose. As such, we have to investigate the interrelationships and corresponding influences exerted by four key constructs on the sustainability performance as the dependent variable: social impact orientation that places priority on missions for local development, financial viability that ensures good fiscal governance, stakeholder engagement that involves partnership with ecosystem players, and institutional support that gains assistance from the hosting university (Soetanto & Jack, 2016). This aim will verify that sustainability does not focus merely on funds but involves an intricate combination of strategic orientation, management acumen, and relation-based assets (Hassan, 2024). Finally, we must uncover the relationships between these key drivers. It is less clear to us how the institutional support and stakeholder engagement affect the main relationship between financial viability and sustainability performance. It questions whether strong external connectivity and university support can implicate and promote good financial management, or whether lackluster engagement and support might amplify them, despite the seeming success of the business (Bögenhold *et al.*, 2019). The overall research design has four components: first, identifying the problem; and second, searching for ways to upgrade it (Ding *et al.*, 2023). There is much that has been learned about business incubators

in the rest of the world, but little that has been learned about university-based incubation efforts in places such as Balochistan, where business incubators and related efforts are in their nascent stages. Firstly, while there has been an understanding pinpointed about overall impediments that prevent business incubators and related business efforts from being successful (Bergek & Norrman, 2008), there has been a shortfall concerning having an institutional, financial, and operating perspective that recognizes and analyzes within the specific and particular setting and needs that pertain specifically and uniquely within the particular peripheral and geographically isolated provinces and newly formed and emerging entrepreneurial cultures (Gupta *et al.*, 2020). Those models derived from the developed or larger cities in the context of the relevant country, in this case, Pakistan, do not appropriately respond to the distinct requirements and “institutional voids” in the socio-economic context in the province of Balochistan (Mair and Marti, 2009).

Second, most research only concentrates on the elements affecting incubators directly rather than understanding their interactions. There is little empirical study conducted on the role of contextual/relational factors, such as stakeholder engagement or institutional context, influencing the role of internal elements, such as financial viability, on social effectiveness (Scillitoe & Chakrabarti, 2010). This is clear proof that the regulation is less effective. Most research uses the social impact as an outcome rather than as a social effect orientation to the operations of ULICs (Social Effect Orientation). There are limitations in the existing literature that this research aims to address by developing an encompassing, localized, and contextually appropriate model of sustainability within the context of ULICs in Balochistan (Cheranukorn *et al.*, 2025; Mahmood *et al.*, 2017).

Problem Statement

In a global scenario, University-Led Incubation Centers (ULICs) encourage entrepreneurship, translate research results into commercial products, and thus enhance regional development (Mian *et al.*, 2016). In Balochistan, the biggest yet most underdeveloped province in Pakistan, with high rates of unemployment, lack of economic diversification, and struggles with infrastructure, ULICs have enormous potential. First and foremost, they provide impetus for indigenous innovation and thus employment generation and mitigation of socio-economic challenges (Khan & Mahmood, 2020). In fact, instead of meeting their highly anticipated goals and expectations, a majority of the ULICs in Balochistan perform significantly below their potential and struggle with long-term viability and sustainability. Al-Mubarak and Busler (2017) identified that the institutional weaknesses of the host universities and uncertain and inefficient financial models and operations impede their service delivery and strategic growth. Second, the incubation initiatives in the aforementioned organizations do not meet the Balochistan social and economic factors and realities of

industries. This has implications of rendering ULICs irrelevant within the Balochistan context, which will result in little community and stakeholder engagement and contribution, as well as little impact on the community (Theodorakopoulos *et al.*, 2014). Thus, a major public and institutional effort has suboptimal returns, and an important provincial development tool could be better harnessed.

Therefore, this study addresses the issue of the absence of a context-specific paradigm for understanding and alleviating the sustainability concerns associated with the ULIC in Balochistan. A paradigm gap exists in terms of developing a more informed approach by policymakers and the administration in understanding the interventions needed, without a comprehension of the internal challenges and the understanding and verification of the relationships between the critical success factors. This particular research addresses the intricacies associated with the sustainability aspect of the ULIC and provides critical insights into making the center a sturdy and influential engine for sustainable growth in the province of Balochistan.

Research Objectives

- To examine institutional, financial, and operational constraints hindering the long-term viability of university-led incubation centers in Balochistan.
- To evaluate ecosystem actors' views on aligning incubation methods with the province's socio-economic needs to improve relevance and effect.
- To analyze the impact of social impact orientation, financial viability, stakeholder involvement, and institutional support on sustainability performance.
- To identify how stakeholder participation and institutional support moderate the relationship between financial viability and sustainability performance.

LITERATURE REVIEW

University Incubators and Entrepreneurial Ecosystems

University-led incubators turn what is learned in school into businesses and solutions that can make money. They are a key part of the innovation ecosystems in the area (Qureshi *et al.*, 2021; Ndagi, 2018). The literature says that universities give businesses credibility, research, and expertise. Incubators, on the other hand, provide businesses with infrastructure, mentoring, training, and access to markets to help them avoid failure in the early stages. Studies in both developed and developing economies demonstrate that incubators facilitate the assimilation of new ideas, the dissemination of knowledge, and the connection of entrepreneurs, businesses, and government entities. University incubators help address market problems, funding gaps, weak supplier networks, and skills gaps by providing students with hands-on learning opportunities, subsidized services, and a place to test new ideas relevant to the situation. Researchers assert that ecosystem initiatives should incorporate incubators that integrate curricula, research commercialization, and

community involvement (Etzkowitz, 2008; Guerrero, Cunningham, & Urbano, 2015).

Sustainability Challenges of Incubators

The literature shows how fragile incubator sustainability is. Researchers have found that in South Asia, Africa, and other developing areas, people depend too much on government or donor money that comes and goes. They also do not focus enough on commercialization, performance monitoring, or industry connections. Incubators do not usually offer consulting, paid training, ownership stakes, or corporate partnerships because they struggle to turn a profit (Schwartz & Hornych, 2010). It is also difficult for them to be agile and create strategic partnerships in scenarios when the boards of the company are weak, its key performance indicators are vague, and there is limited managerial freedom. The absence of clear metrics on impact measurement (in financial, social, and employment bases) provides no evidence to incubator stakeholders that they are useful. It limits incubators from acquiring additional funding or becoming members of organizations. Much emphasis on incubation has been placed in the higher education system for over a decade in Pakistan. However, in instances such as Balochistan, incubators are very likely to fail due to the lower private sector involvement, higher regional instability, and limited infrastructure. The literature focus has apparently shifted away from project-mode incubators to hybrid models characterized by mission-driven objectives, sustainable income strategies, and improved governance.

Theoretical Anchors

Effectuation Theory

Saras Sarasvathy's (2001) theory of effectuation provides an epistemological approach that is appropriate when resources are scarce. Entrepreneurs acting on effectuation principles do not rely on forecasted markets. They do not fully plan out their projects and instead define their undertakings from what they have (who they are, what they know, and who they know), form alliances or networks (crazy-quilt approach), manage risk to avoid losses that could severely burden their funds (affordable loss), and decide to be satisfied that not everything may go according to their planned design (lemonade principle). The approach is extremely helpful to incubator managers working in developing regions to produce their own opportunities without many resources, through the utilization of their knowledge from academia, students, and local businesses' networks and connections (Sarasvathy, 2001; Dew *et al.*, 2009).

Quadruple Helix Model

The quadruple helix adds strength to the triple helix model by considering the stakeholders in civil society and communities on par with the university, business, and the government (Carayannis & Campbell, 2009). In order for incubators to be sustained and socially contextual, literature emphasizes social governance that involves four

dimensions: that of academia with research and human capital, industries with market credibility, governments with their policies and investments, and communities with their relevance (Carayannis *et al.*, 2018). The quadruple helix model is highly relevant when it comes to social entrepreneurship incubations, with communities and their relevance being essential determinants.

Social Enterprise Design

Researchers on social enterprises indicate that through combining financial models and setting goals for the social mission, there can be sustainable financial models (Dees, 1998; Austin, Stevenson & Wei-Skillern, 2006). Incubators that assist social ventures to start or social enterprises may use earned income (through training fees, consulting services, sales of services or product sales, equity, or royalties) and funds from donors or CSR to stabilize their income sources. The design discipline of social businesses includes ensuring the value proposition is clear, using blended finance tools, managing stakeholders, and measuring impact. These tools can help incubators achieve their goals while also generating revenue.

Empirical and Policy Literature: Lessons for Pakistan

Studies of incubation programs in Pakistan and other developing countries show that companies need to make their own plans. Plan9/PlanX in Pakistan and some university incubators in India and Kenya are two examples of incubators that will be around for a long time. There are many ways for them to make money, such as charging for acceleration services, working with businesses, charging for intellectual property commercialization, renting space, offering faculty bonuses, offering student-credit-bearing incubation modules, and implementing strict monitoring and evaluation systems. Policy literature examines the function of higher education authorities (HECs) in institutional embedding via the incorporation of incubation activities into faculty workload models, the provision of seed-matching funding, and the promotion of university–industry platforms. Studies from different countries show that incubators are more likely to last if they do more than provide services. For example, they should bring together city officials, angel investors, and mentors to help local ecosystems grow (OECD, 2019). University-led incubation centers (ULICs) are a key part of entrepreneurial ecosystems because they connect academic research with real-world business problems. Their basic role is to supply businesses with funding, infrastructure, advice, and contacts. It lowers the risk of bankruptcy (Mian *et al.*, 2016). These schemes have increased the transfer of technology, spin-offs, and regeneration in advanced nations (Bergek & Norrman, 2008). In the less developed regions, the basic goal of ULICs goes beyond profit-making. There is a need to lower poverty, employment, and the transfer of new ideas from conception to implementation (Gupta *et al.*, 2020). Khan & Mahmood (2020) believe that ULICs could be a solution to the existing challenges in Balochistan. These

include the absence of diverse businesses, unemployment among the youth, and an economy that depends on natural resources. They must perform well in this region since they can establish an economy using the skills of its residents.

Barriers to Incubator Sustainability: A Generic and Contextual Perspective

There are several articles that explain the struggles that make it challenging for incubators to remain operational. Usually, they are categorized into three types: operational, financial, and institutional. Institutional factors would be bureaucratic management structures, the lack of freedom to strategically operate independently, or when the incentive structure within universities does not align. These may reduce the ability of individuals to come up with creative ideas and act on them swiftly (Al-Mubarak & Busler, 2017). Some ULICs receive funds from the government or an agency as a source of funding that might not be constant. They also have several sources through which they can earn money, including equity, services, or third-party partnerships (Hackett & Dilts, 2004). It thus becomes important to maintain a constant flow of funds. Managers might not be able to handle people, might not have good mentorship, or might not have suitable methods for selecting incubates; otherwise, things might not go as expected (Theodorakopoulos *et al.*, 2014). “Institutional voids,” as described by Mair and Martí (2009), refer to a lack of well-established market intermediaries, regulations, and institutions. What locals in regions, for example, Balochistan, notice is that there is a lack of good infrastructure, a lack of good venture capital, and a lack of business networks. “A normal incubation approach would fail under these conditions” (Khan & Liu, 2021). It brings about internal issues for the firm, which are compounded by a substandard environment. It is a novel trap for sustainability that remains underresearched in contemporary incubation research, mainly based on North American–European research, as discussed by Scillitoe & Chakrabarti (2010).

Alignment with Socio-Economic Needs and Stakeholder Perceptions

The utility and significance of the ULIC will rest upon the manner in which it addresses the requirements of the surrounding location. Some individuals argue that translocated methods of assisting entrepreneurs have negative implications, as they impose “alien” entrepreneurial ideas that fail within the local setting and utilize local resources (Sánchez-Hernández *et al.*, 2016). In this regard, the ULICs of Balochistan cannot solely rely upon the traditional tech start-up approach. They have the responsibility of assisting the entrepreneurs of locations where benefiting the province is possible, including the areas of renewable resources, mineral processing, appropriate farmlands, and the preservation of cultural heritage. In this respect, the notion of social impact orientation is vital. In essence, the enterprise

will have a strategy to facilitate a better world within the organization's long-term plan (Miller *et al.*, 2012). A good SIO would assist ULICs to utilize resources, choose incubatees, and decide on success factors to be measured and achieved in a manner that contributes to local economic development. In this respect, to promote uniformity, local enterprises, local leaders, and public institutions, along with individuals seeking to start their own businesses, must collaborate to provide an incubation service (Bögenhold *et al.*, 2019). The opinions of various stakeholders on the existing gap and potential measures for improvement form a major, and to a certain extent anecdotal, field of investigation in the case of Balochistan.

Towards an Integrated Framework

An emerging finding is that the focus of the I model should consider the influence of different factors on the incubator's performance. In this review, four ways have been discussed on how Balochistan could improve its environmentally friendly approach. Social impact orientation, or SIO, reflects the degree of alignment of the ULIC's mission and activities with the social and economic issues surrounding the local community. The full implementation of SIO would encourage the organization itself to appear authentic, provide it with resources for its mission, and, in the long run, help create community connection. They would strengthen the group's unity not only financially but in all aspects as well (Saebi *et al.*, 2019). Being financially viable, or FV, means creating budgets, planning for the future, identifying ways to generate additional income, and making smart financial decisions. Good FV will ensure the easy flow of activities, and we could change our plans whenever necessary (Al-Mubarak & Busler, 2017). The ULIC's stakeholder engagement, or SE, encompasses the nature, intensity, and extent of their connection or relationship with the surrounding persons and groups, among others. Good SE has resources, market information, connects incubatees, and fosters the support coalition, thus decreasing the probability of institutional support gaps (Fichter & Tiemann, 2020). The host university has Institutional Support (IS). These are funds, legitimacy, qualified faculty, and administrative systems that are easily altered. Good IS ensures that everything is kept in order when things are not right outside (Soetanto & Jack, 2016). These should be considered in the Sustainability Performance (SP), which entails factors like the capability of the business to make money, the time it will take to grow the business, and its impacts on the people, as well as the economy. According to the literature, these components are interconnected. Good SE and IS could be critical factors that influence the results. They may enhance FV-SP associations through the provision of complementary resources that will aid them in dealing with their finances. They may also facilitate them in gaining access to the network, allowing them to be more legitimate, thereby allowing them to raise more funds

(Bögenhold *et al.*, 2019). Conversely, having a weak SE and IS can cause an effective FV to be ineffective. There is a huge area, or gap, in theory within this interaction, particularly when tough situations arise.

In light of the discussion, it can be concluded that the focus of the literature is on ULICs, along with the problems identified. However, it seems that such findings do not apply well in a country such as Balochistan, which has not developed much. Firstly, the context presented isn't adequate, establishing that little work has been done related to the impact of problems in the fields of institutions and operations. Second, the people who are involved do not think the plan needs to be changed to work better in the area. Third, and most importantly, there is not enough real-world research on how SIO, FV, SE, and IS directly affect SP, or on how relational and institutional factors might modify these effects. This study develops and tests a framework that accounts for specific situations to address problems and provide valuable insights for regional development theory and practice through university-led entrepreneurship. The university-run incubation centers in Balochistan lack funding, have poor infrastructure, and need significant support to address social and economic conditions. They want to promote entrepreneurship (social impact) and financial independence (financial sustainability), but these two goals are incompatible. This study examines social impact methods, revenue-generation strategies, stakeholder involvement, and institutional support to develop a plan to make ULIC more sustainable (Pricopoaia *et al.*, 2024; Mate *et al.*, 2025). We examine what makes something sustainable and offer evidence-based suggestions based on data from a mixed-methods survey. According to the Resource-Based View (Barney, 1991) and Stakeholder Theory (Freeman, 1984), ULIC's long-term success depends on its own resources and on its interactions with others.

Sustainability is measured by social impact and financial break-even/surplus. Key constructs are as follows:

- Social Impact Orientation (SIO): Proactive focus on community development, inclusive entrepreneurship, and SDG alignment.
- Financial Viability (FV): Diversified revenue, cost control, and financial planning.
- Stakeholder Engagement Depth (SED): Quality of relationships with government, industry, alumni, and NGOs.
- Institutional Support Adequacy (ISA): University-level policies, infrastructure, and autonomy.
- Sustainability Performance (SP): Measured via social outcomes and financial health.

After going through the literature, the following hypotheses are formulated.

H1: Social impact orientation, financial viability, stakeholder engagement depth, and institution support adequacy are positively correlated with sustainable performance.

H2: Financial viability and stakeholder engagement depth moderate the relationship between social impact

orientation and sustainable performance.

H3: Institutional support adequacy strengthens the effect of financial viability and stakeholder engagement depth on sustainable performance.

MATERIALS AND METHODS

The study employed a mixed-methods research design; the first two objectives were analyzed using qualitative thematic analysis. The third and fourth objectives of the study were achieved through quantitative analyses using regression analysis. The qualitative data were collected from professionals at the Balochistan incubation center, university officials, a few start-ups, industry-related experts, and government officials. Sixteen semi-structured interviews were conducted, as saturation was reached (Hennink & Kaiser, 2022; Galvin, 2015). Quantitative data were collected through a structured interview with 150 stakeholders involved in university incubation centers in Balochistan. The sample size was calculated using G*Power analysis and maximum variation sampling (Patton, 2002). All constructs employed 5-point Likert scales (1=Strongly Disagree, 5=Strongly Agree). Austin *et al.* (2006) used a 6-item “Social Entrepreneurship Measurement Scale for the social impact orientation.” Our incubator supports projects that address problems in the local community and how people manage their money. We use five

items from Brush *et al.* (2009) to measure resource management. Doh & Guay (2006) assessed stakeholder collaboration using a 5-item stakeholder engagement depth scale. The research utilized the 4-item Clarysse *et al.* (2005) institutional support adequacy measure. A six-item assessment that looks at both social (jobs created, women entrepreneurs, rural outreach) and financial (cost recovery, revenue growth) performance in terms of sustainability. The index is the mean of the items. SPSS calculated descriptive statistics, validity, reliability, and correlation analyses, while regression analysis evaluated the hypothesis.

RESULTS AND DISCUSSION

Results and Analysis

Qualitative Analysis and Findings

The word count for the qualitative data collected through the semi-structured interviews is shown in Figure 1. It highlights the most frequently occurring words across all interview transcripts. These words reflect the core discourse around institutional challenges, financial models, and the need for contextual alignment in Balochistan’s incubation centers. The words ‘funding’ and ‘sustainability’ are used many times, highlighting the importance of funding for the sustainability of the incubation centers.



Table 1: presents the identified codes, along with the sub-themes and themes, explanations, and literature support, and also provides qualitative data evidence

Table 1: Qualitative analysis

Code	Sub-Theme	Theme	Explanation with Literature Support	Interview Evidence
Bureaucratic Inertia & Risk Aversion	Institutional Barriers	Barriers to Sustainability	University governance institutions stress accountability, precedent, and risk avoidance, which is the opposite of how incubation works (Grimaldi & Grandi, 2005; Rothaermel <i>et al.</i> , 2007).	“The university is built on deliberation, precedent, and risk aversion... A start-up needs a grant in days; our finance committee meets monthly.” (O)
Lack of Autonomy & Embedded Bureaucracy	Institutional Barriers	Barriers to Sustainability	University cost center incubators lack decision-making power and face delays in procurement, recruiting, and financial distribution. (Mian, 1997; Bruneel <i>et al.</i> , 2012).	"Every piece of content... must go through the university’s Public Relations Office for approval... These two things clash.” (A)

Grant Dependency & Project-Based Funding	Financial Barriers	Barriers to Sustainability	Grants (HEC, donors) produce a "boom-and-bust" cycle that prevents strategic planning and fundamental operational stability. (Aernoudt, 2004; Hackett & Dilts, 2004).	"We are trapped in the grant cycle... When the grant ends, the program stops, and we lose credibility." (B)
Absence of Revenue-Generation Mechanisms	Financial Barriers	Barriers to Sustainability	University regulations generally restrict stock stakes, consultant fees, and success-based models, preventing financial independence. (Phan <i>et al.</i> , 2005).	"Legal barrier is the University Act and Government Financial Rules, which do not permit us to establish a revolving fund, hold equity, or earn and retain consultancy fees." (K)
Mentorship & Human Capital Gap	Operational Barriers	Barriers to Sustainability	Incubation works best with mentors having industry and venture-building experience, not just academics. (Hackett & Dilts, 2004).	"Most glaring gap is in professional leadership... We need a dedicated, full-time chief executive... hired from the industry or entrepreneurial ecosystem." (L)
Infrastructure & Resource Deficit	Operational Barriers	Barriers to Sustainability	The lack of infrastructure and resources is an obstacle to sustainability (Mian, 1997).	"We provide desks and Wi-Fi, but not the critical infrastructure start-ups need: reliable testing labs, prototyping workshops, or legal/IP clinics." (D)
Imported vs. Indigenous Model Misalignment	Sectoral & Contextual Misalignment	Strategies for Alignment & Impact	Generic, tech-heavy incubation methods from advanced ecosystems clash with primary sector-based local economic frameworks. (Radosevic & Myrzakhmet, 2009).	"Our province's pressing requirements are in primary and secondary sectors, yet we're using a broad incubation strategy from tech-heavy institutions." (G)
Problem-Led & Challenge-Driven Approach	Sectoral & Contextual Alignment	Strategies for Alignment & Impact	Basing incubation on local community and government department challenges shifts from "solution-push" to "demand-pull." (Bergek & Norrman, 2008).	"We must work backwards from Planning & Development Department problems to design challenge statements and hire or train teams to tackle them." (L)
Ecosystem Integration & Formal Partnerships	Ecosystem Integration & Governance	Strategies for Alignment & Impact	Moving beyond ceremonial MOUs to formal, decision-making responsibilities for industry and government in incubator administration to ensure local economic absorption. (Etzkowitz <i>et al.</i> , 2000; Guerrero <i>et al.</i> , 2016).	"The Chamber and appropriate trade associations must have statutory board seats. Make decisions, not attend ceremonies." (J)
Structural Autonomy via Separate Legal Entity	Ecosystem Integration & Governance	Strategies for Alignment & Impact	To sidestep university bureaucracy, enable flexible employment, retain funds, and enter into contracts, the incubator must be an autonomous not-for-profit firm (e.g., a Section 42 organization). (Grimaldi & Grandi, 2005).	"Granting the BIC operational and financial autonomy through a separate legal vehicle is the most important decision. The master key." (I)

Redefining Academic Excellence & Incentives	Cultural & Philosophical Shift	Strategies for Alignment & Impact	University culture must change to embrace social impact and economic translation alongside scholarly results for sustainable incubation (Etzkowitz, 2003).	"Redefining academic greatness is difficult. We must integrate social effect and economic translation in that definition." (F)
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The literature on ecosystem actors, technology transfer, and academic entrepreneurship indicates that university incubators face many issues that make them unstable. Start-ups must change rapidly and take chances, while universities prioritize academic accountability and risk reduction. Pressure is on timely recruiting, purchasing, and decision-making (Grimaldi & Grandi, 2005). When viewed as a “project” or “cost center” and not considered a business unit, people will not invest within the incubator. The academic and business logics do not match, as argued by Rothaermel *et al.* (2007). “Liabilities of newness” apply to the slow university incubators, according to Bruneel *et al.* (2012). HEC funding or project funding from a sponsor will not do for the incubator presently. The nature of universities hampers their incubators’ ability to retain firm equity, provide consulting services, or invest seed capital, as based on Phan *et al.* (2005). The incubator cannot focus on the market if it relies too much on the public sector, as argued by Aernoudt (2004). The incubators within the public sector utilize an equity approach to funding, based on Grimaldi and Grandi (2005).

Incubation requires trained venture builders, specialists, labs, and prototyping environments for success. The crucial difference is that incubators can only work with secondment mentors from academia and no one from industry (Hackett & Dilts, 2004). The reason

start-ups find it difficult to gain entry into academia’s research labs is that the red tape is inhibiting. The area of regional innovation systems and case stories implies that incubators could also be beneficial in Balochistan, with improvements in the GSCC areas. Generic digital approaches for incubation that disregard the region’s presence and prominence in the agricultural and mineral sectors and livestock would be incongruous. The shift towards “appropriate technology” and innovative strategy integration with region-wide value chains and economic conditions is imperative and appropriate (Radosevic & Myrzakhmet, 2009). Incubators being a part of the innovative landscape is imperative and important. Industry and government co-governance coalitions beyond symbolic coalitions establish “market-pull” for innovation (Guerrero *et al.*, 2016). Organizational crime assistance helps most incubators escape from academic bureaucracy and red tape (Grimaldi & Grandi 2005). First, the institution has to redefine “academic excellence.” Change requires rewarding applicable research and starting new companies to turn the institution from a “tower” to a “steward of regional talent” (Etzkowitz 2003; Shahzad *et al.*, 2025).

Quantitative Analysis and Findings

The descriptive analysis of quantitative data outlined

Table 2: Descriptive Statistics

	Count	Mean	Std Dev	Median	% High (4-5)
Social Impact Orientation	150	3.85	0.92	4.00	62%
Financial Viability	150	2.95	1.10	3.00	34%
Stakeholder Engagement	150	3.40	0.87	3.50	48%
Institutional Support	150	3.10	1.05	3.00	40%
Sustainability Performance	150	3.30	0.96	3.25	44%

that the highest mean refers to social impact orientation, equalling 3.85, which defines strong mission alignment with community needs. Table 2 underlines that the lowest average score, 2.95, belongs to financial viability and signals problems in cost management and/or income

diversification. Only 34% of the respondents stated that financial viability was high, which signals action. The sustainability performance is at an average to high level, expressed by 44% of the answers, which allows for room to further improve.

Table 3: Reliability Analysis

	Cronbach's Alpha	Composite Reliability	Items
Social Impact Orientation	0.89	0.91	6
Financial Viability	0.82	0.85	5
Stakeholder Engagement	0.85	0.88	5
Institutional Support	0.79	0.83	4
Sustainability Performance	0.88	0.90	6

All the constructs surpass the minimum threshold proposed by Nunnally (1978) with 0.70, thus being very consistent with one another. The internal consistency coefficient is supported by high composite reliability with a value above 0.80. Cronbach's alpha and composite reliability are two techniques utilized for the internal consistency analysis. The loading and the average variance extracted (AVE)

are described in the convergent validity, and all the values above 0.50 support the convergent validity proposed by Fornell & Larcker (1981), as shown in Table 4.

The discriminant validity measure used the Fornell-Larcker Criterion: diagonal values exceed inter-construct correlations, confirming discriminant validity, as presented in Table 5.

Table 4: Convergent Validity

	AVE	Item Loadings Range
Social Impact Orientation	0.63	0.71–0.86
Financial Viability	0.58	0.65–0.82
Stakeholder Engagement	0.61	0.68–0.84
Institutional Support	0.55	0.62–0.79
Sustainability Performance	0.62	0.70–0.85

Table 5: Fornell-Larcker Criterion

	SIO	FV	SED	ISA	SP
SIO	0.79				
FV	0.45	0.76			
SED	0.52	0.49	0.78		
ISA	0.38	0.55	0.44	0.74	
SP	0.61	0.67	0.59	0.51	0.79

Table 6: Pearson Correlations

	SIO	FV	SED	ISA	SP
SIO	1				
FV	0.45**	1			
SED	0.52**	0.49**	1		
ISA	0.38**	0.55**	0.44**	1	
SP	0.61**	0.67**	0.59**	0.51**	1

** $p < 0.01$

All independent variables are positively related to SP, accordingly confirming H1. There was an outstanding correlation between financial viability and SP, with a value of 0.67, which demonstrates the importance of the relationship between these two variables. SP also

has a strong relationship with social impact orientation at 0.61, supporting the dual objective. Inter-correlations of less than 0.70 between the predictors indicate that multicollinearity is minimal.

Table 7: Regression Analysis

	Model 1 β	Model 2 β	Model 3 β
SIO	0.61***	0.32***	0.30***
FV		0.40***	0.38***
SED		0.21**	0.19**
ISA		0.15*	0.14*
FV x SED			0.17**
ISA x FV			0.11*
R ²	0.372	0.589	0.624
Adjusted R ²	0.368	0.578	0.610
F-change	88.45***	42.16***	6.89**

*** $p < 0.001$, ** $p < 0.01$, $p < 0.05$

Model 1 shows that SIO accounts for 37.2% of the variance in SP, while Model 2 shows that FV, SED, and ISA account for 58.9%. All of them are important predictors, although FV has the highest standardized beta (0.40). Interaction terms account for 3.5% of the unique variance in Model 3. The FV x SED interaction ($\beta = 0.17$, $p < 0.01$) indicates that when stakeholders are highly involved, financial viability has a larger positive effect on sustainability. The interaction between ISA and FV ($\beta = 0.11$, $p < 0.05$) indicates that institutional support enhances financial efficiency. H2 and H3 are supported.

Discussion

This study examined the challenges faced by Balochistan University-led Incubation Centers (ULICs) in maintaining operations and developed a strategy that reconciles social advantages with profitability. We learned that ULICs are very important for entrepreneurship, innovation, engaging young people, and helping the local economy grow, but we do not know what will happen to them in the future. The most considerable risk is depending too much on donations that do not last long and on government plans for quick installation and operation. When the money runs out, incubators have no incoming funds, a steady staff, or a way to work with the university's governance. Researchers say that to be sustainable, a company must run smoothly, have a strong institutional base, and make the world a better place. Balochistan's incubators have no way to plan, meet new people, get advice, or find out how much good they do for society. These rules make it harder for incubators to be consistent, creative, and helpful to entrepreneurs over time. Research employing the concept of Effectuation Theory, the Quadruple Helix Model, and Design of Social Enterprises reveals that a resource-constrained ULIC can adopt an approach that is more flexible, cooperative, and mission-focused. Incubators leverage their existing network, emphasize what they have, create a cost-effective network, and leverage new possibilities, as proposed in effectuation theory. The quadruple helix model argues that educational institutions, corporations, governments, and social organizations should collaborate in an organized manner to provide an atmosphere that breeds entrepreneurship. Designing social ventures makes incubators a hybrid organizational entity, as they also function as profit generators as well as people facilitators.

The findings reveal that the Balochistan ULICs cannot remain operational as long as the funders continue to allocate funds for their sustainability. There has to be an interface with the ecosystem, and they have to earn money as well as have groups to back them up. This paper brings forth an innovation with an effective framework and academic recommendations to policymakers, university administrators, and incubator administrators. The two most influential parameters that determine the SP are considered to be FV and SIO (Pricopoaia *et al.*, 2024; Mate, 2025). The threat level to organizations for their sustainability could be influenced by their strong

SIO alignment (SIO mean=3.85) and various levels of difficulties in their FV parameters (FV mean=2.95), with only 34% being high. The regression models reveal that the most influential factor for SP for organizations to work towards sustainability will still be their ability to earn money, as indicated by their $\beta=0.38$ coefficient within the regression equation for Model 3. SIO will continue to be an influential factor for individuals to take actions that are predominantly for their own reasons, as indicated by their $\beta=0.30$ coefficient. The foundation of social entrepreneurship, theoretically and practically, leads to a substantially improved sustainable outcome (adjusted $R^2 = 0.610$). The model focuses on indicating financial viability and not direct sustainable performance. The presence of strong interaction terms shows that financial viability is not a monolithic concept. The FV x SED interaction ($\beta=0.17$) shows that effective financial management and increased stakeholder engagement produce improved sustainability. According to Freeman's stakeholder theory (1984), positive engagement with local people and stakeholders creates a setting within which financial management is viewed from a legitimate perspective. The second interaction, ISA x FV ($\beta=0.11$), shows that an institution has the potential to modify people's skills to handle their finances through financial provision, networking, and developing skills. According to Scott's institutional theory (1995), organizations acquire aid and resources from external sources to enhance financial systems. Collaboration towards making the world a better place. Humanitarian entrepreneurs are required to achieve alignment of their humanitarian mission and their sound financial management, aiming for the reduction of the "mission-money gap." The reliability and validity of the measurement model ensure the validity of the above prescription-setting suggestions. In achieving a better world, people are required to understand the concept of saving and managing their spending. External relational and institutional resources improve internal functioning. In the context of successful completion of integrated development initiatives, the future will require focus on the domain of finance, relationships, and institutions" (Austin, Stevenson, & Wei-Skillern, 2006).

CONCLUSION

The study links social impact and financial viability. ULICs in Balochistan recognize social challenges but lack funds to help. The framework emphasizes. Finance systems should include fee-for-service, commercial partnerships, and impact investing. To strengthen government-business mentoring and co-funding. Universities must be given the freedom and the means to operate independently. It must methodically track social indices to acquire grants and aid; this study's cross-sectional design and Balochistan focus confound causal inference.

Surveys, in-depth interviews, and secondary research demonstrate that Balochistan's ULICs will last. Instead of facts, we look for regional thematic trends. There are challenges from existing practices, resources, and

governance. An integrated conceptual model enhances sustainability. Research and regional scenarios suggest dependence on donors, lack of alignment with institutions, inadequate diverse funding approaches, poor incubator ability, and inadequate monitoring systems. There are social enterprise-based sustainability approaches worldwide that meet international standards. These should be considered in the context of Balochistan's existing limitations and its needs. Existent realities and conceptual realities both substantiate the sustainability model in this context. Incubators in Balochistan's universities have to be improved from an institutional, provincial, donor, and ecological standpoint to sustain themselves. Universities should govern the incubators, not treat donors separately. Finance, human resource positions, reporting, and strategic planning are specific. After fundraising, there is institutionalization, followed by adaptation in their business model so that they can raise money from multiple sources and become self-sufficient. Streams can be, for instance, entrepreneurial boot camps, consultation fees for projects led by faculty members, co-working space charges, stock shares in selective startups, and programs for innovation, digital competencies, and social entrepreneurship. University academics should be rewarded for mentoring, product development, and cross-disciplinary collaboration. Students are engaged by cross-disciplinary entrepreneurial material, and faculty networks and communities of practice improve ecosystem multipliers.

REFERENCES

- Aernoudt, R. (2004). Incubators: Tool for Entrepreneurship? *Small Business Economics*, 23(2), 127-135.
- Ali, M., Jamshed, S., Shams, A., & Zahid, A. (2022). Impact of business incubations on entrepreneurial mindset: In the context of Pakistan. *Review of Education, Administration and Law (REAL)*, 5(2), 189-202.
- Al-Hassan, F. A., & Ibrahim, K. M. (2024). Entrepreneurial horizons: Exploring the contributions of university business incubators to college sustainability—A case study in Iraq. *Research Journal of Economics and Sustainable Development*, 1(1).
- Al-Mubarak, H. M., & Busler, M. (2017). The effectiveness of business incubation in the US. *Journal of International Business and Entrepreneurship Development*, 10(4), 335-350
- Austin, J., Stevenson, H., & Wei-Skillern, J. (2006). Social and commercial entrepreneurship: same, different, or both? *Entrepreneurship Theory and Practice*, 30(1), 1-22
- Ayad, T., Sobaih, A.E.E., & Elshaer, I.A. (2022). University Incubator Support and Entrepreneurial Intention among Tourism Graduates: Mediating Role of Personal Attitude and Sustainability.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*
- Battilana, J., & Lee, M. (2014). Advancing research on hybrid organizing—Insights from the study of social enterprises. *The Academy of Management Annals*, 8(1), 397-441
- Bergek, A., & Norrman, C. (2008). Incubator best practice: A framework. *Technovation*, 28(1-2), 20-28
- Bögenhold, D., Fink, M., & Kraus, S. (2019). Integrative strategy for entrepreneurship: The role of business incubation and stakeholder engagement. *Review of Managerial Science*, 13(5), 1087-1112
- Bruneel, J., Ratinho, T., Clarysse, B., & Groen, A. (2012). The evolution of business incubators: Comparing demand and supply of business incubation services across different incubator generations. *Industrial and Corporate Change*, 21(2), 339-368.
- Carayannis, E. G., & Campbell, D. F. J. (2009). “Mode 3” and “quadruple helix”: Toward a 21st-century fractal innovation ecosystem. *International Journal of Technology Management*, 46(3-4), 201-234.
- Cherapanukorn, V., Pattanasak, P., & Wudhikarn, R. (2025). Key performance indicators for sustainable business incubation: identification and prioritization. *Sustainable Futures*, 10(2025).
- Clarysse, B., & Bruneel, J. (2007). Creating university spin-offs: The role of incubators. *Journal of Business Venturing*, 22(2), 254-273.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297-334.
- Coscarello, M. (2025). Social innovation hubs: Experiences of incubators as promoters of territorial development and urban regeneration. In *Crisis, conflict and celebration: Ethnographic studies of European cities* (pp. 419-450).
- Ding, K., Shu, L., & Li, H. (2023). The impact of social capital on the entrepreneurial performance of university business incubators: The moderating roles of entrepreneurs' risk-taking and managers' proactive behavior. *Asian Journal of Business Research*, 13(3).
- Dees, J. G. (1998). *The meaning of social entrepreneurship*.
- Dew, N., Read, S., Sarasvathy, S. D., & Wiltbank, R. (2009). Effectual vs. predictive logics in entrepreneurial decision-making: Differences between experts and novices. *Journal of Business Venturing*, 24(4), 287-309.
- Etzkowitz, H. (2008). *The triple helix: University-industry-government innovation in action*. Routledge.
- Etzkowitz, H. (2003). Innovation in innovation: The triple helix of university-industry-government relations. *Social Science Information*, 42(3), 293-337.
- Etzkowitz, H., Webster, A., Gebhardt, C., & Terra, B. R. C. (2000). The future of the university and the university of the future: evolution of ivory tower to entrepreneurial paradigm. *Research Policy*, 29(2), 313-330.
- Fichter, K., & Tiemann, I. (2020). Impacts of promoting sustainable entrepreneurship in generic business incubation programs. *Administrative Sciences*, 10(2).
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
- Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.
- Galvin, R. (2015). How many interviews are enough? Do qualitative interviews in building energy consumption research produce reliable results? *Journal of Building*

- Engineering*, 1, 2–12.
- Gioconda, M., Sansone, G., Secundo, G., & Paolucci, E. (2022). Speeding up student entrepreneurship: The role of university business idea incubators. *Institute of Electrical and Electronics Engineers (IEEE)*.
- Grimaldi, R., & Grandi, A. (2005). Business incubators and new venture creation: an assessment of incubating models. *Technovation*, 25(2), 111-121.
- Guerrero, M., Cunningham, J. A., & Urbano, D. (2015). Economic impact of entrepreneurial universities' activities: An exploratory study of the United Kingdom. *Research Policy*, 44(3), 748–764.
- Guerrero, M., Urbano, D., Fayolle, A., Klofsten, M., & Mian, S. (2016). Entrepreneurial universities: emerging models in the new social and economic landscape. *Small Business Economics*, 47(3), 551-563.
- Gupta, P., Chauhan, S., Paul, J., & Jaiswal, M. P. (2020). Social entrepreneurship research: A review and future research agenda. *Journal of Business Research*, 113, 209-229.
- Hackett, S. M., & Dilts, D. M. (2004). A systematic review of business incubation research. *The Journal of Technology Transfer*, 29(1), 55-82.
- Hafeez, S., Ali, Q. A., and Nawaz, M. A. (2021). Business Incubators in Pakistan: State of the Art and Future Outlook. *Journal of Accounting and Finance in Emerging Economies*, 7(4), 979-990.
- Hakim, A. I., Sukimi, M. F., & Rahman, A. H. A. (2024). Exploring the role of business incubators to sustainable start-ups: A systematic literature review. *Centre for Research in Development, Social & Environment, Universiti Kebangsaan Malaysia*.
- Hassan, N. A. (2024). University business incubators as a tool for accelerating entrepreneurship: Theoretical perspective. *Review of Economics and Political Science (REPS)*, 9(5), 434–445.
- Hennink, M., & Kaiser, B. N. (2022). Sample sizes for saturation in qualitative research: A systematic review of empirical tests. *Social Science & Medicine*, 292, 114523.
- Hussain, S., Xuetong, W., & Hussain, S. F. (2021). Assessing the performance of business incubators: A case study of Pakistan. *SAGE Open*, 11(3)
- Jamil, F., Yasir, M., Mahmood, N., Malik, M. S., & Khan, N. U. (2017). University incubators and entrepreneurial ecosystem. *Economics, Business and Management*.
- Javaid, U. (2021). Socio-economic challenges of Balochistan: The way forward. *Journal of the Research Society of Pakistan*, 58(1), 107-120
- Kambanou, M. L., Hajoary, P. K., & Lindfors, A. (2025). Supporting start-ups in the circular economy: An analysis of university-led incubators in India. *Journal of Industrial Ecology*, 29(3), 997–1012
- Khan, S. A., & Liu, Y. (2021). Bridging the institutional voids: A comparative study of business incubators in China and Pakistan. *Journal of Entrepreneurship in Emerging Economies*, 13(5), 1009-1032
- Khan, S. A., & Mahmood, A. (2020). Role of universities in entrepreneurial ecosystem: Case of Pakistan. *Journal of Entrepreneurship and Business Innovation*, 7(1), 1-19
- Khan, S., Khan, M.H., & Iqbal, S. (2025). Innovation under Pressure: Mapping the Boom, Challenges, and Resilience of Pakistan's Start-up Ecosystem (2019–2024). *Review of Social Psychology & Social Work*, 3(2)
- Khalid, S., & Fatima, H. (2020). The role of Higher Education Commission (HEC) in promoting entrepreneurship in Pakistan. *Pakistan Journal of Commerce and Social Sciences*, 14(1), 1-25
- Mahmood, N., Jamil, F., & Yasir, N. (2017). Role of business incubators in entrepreneurship development in Pakistan. *City University Research Journal, Special Issue (AIC, Malaysia)*, 37–44.
- Mahmood, N., Jianfeng, C., Munir, H., Jamil, F., & Nusrat, A. (2016). The role of university-based incubators in developing economies: Empirical evidence from Pakistan. *International Journal of u- and e-Service, Science and Technology*, 9(11), 143–152.
- Mair, J., & Martí, I. (2009). Entrepreneurship in and around institutional voids: A case study from Bangladesh. *Journal of Business Venturing*, 24(5), 419–435.
- M'at'e, D., Estiyanti, N. M., Novotny, A., & Vveinhardt, J. (2025). University business incubators in Indonesia: Navigating commercial viability and societal contributions. *Sustainable Futures*, 10.
- Mian, S. A. (1997). Assessing and managing the university technology business incubator: an integrative framework. *Journal of Business Venturing*, 12(4), 251-285.
- Mian, S., Lamine, W., & Fayolle, A. (2016). Technology business incubation: An overview of the state of knowledge. *Technovation*, 50, 1-12
- Mirani, I. A., Meng, F., & Khaskhelly, F. Z. (2022). Towards a sustainable business incubator model: Evidence from Pakistan. *Journal of Global Entrepreneurship Research*, 12(1), 299-312
- Meraj, J., Qudoos, A., Malik, F., Ahmed, P., Akram, B., Uthal, M. S., & Baluchistan, P. (2025). Relationship between University Entrepreneurial Facilities & Students Entrepreneurial Performance. *Review Journal of Social Psychology & Social Works*, 3(1), 12–23
- Miller, T. L., Grimes, M. G., McMullen, J. S., & Vogus, T. J. (2012). Venturing for others with heart and head: How compassion encourages social entrepreneurship. *Academy of Management Review*, 37(4), 616-640
- Moussi, N. (2025). Funding Start-ups through University Business Incubators: Leading International Experiences. *Journal of El-Maqrizi for Economic and Financial Studies*, 9(1)
- Ndagi, A.M. & Amony, M. (2018). University-Industry Linkage: the New Role of Technology Business Incubators. *International Journal of Operational Research in Management, Social Sciences, & Education*, 4(1)
- Nunnally, J. C. (1978). *Psychometric theory*. McGraw-Hill.
- Pakistan 2025. (2025). *One nation–one vision: A report of Planning Commission*. Ministry of Planning, Development & Reforms, Government of Pakistan.
- Patton, M. Q. (2002). Two decades of developments in qualitative inquiry: A personal, experiential perspective. *Qualitative Social Work*, 1(3), 261–283.

- Petrucci, F., Mutignani, F., & Santos, J. N. (2025). Sustainability-driven changes in the business incubation industry. *Journal of Business and Industrial Marketing*, 40(6), 1376–1388.
- Phan, P. H., Siegel, D. S., & Wright, M. (2005). Science parks and incubators: observations, synthesis and future research. *Journal of Business Venturing*, 20(2), 165-182.
- Planning & Development Department, Government of Balochistan. (2023). *Balochistan development vision 2023–2028*.
- Pompa, C. (2013). *Literature review on the impact of business incubation, mentoring, investment and training on start-up companies*. Professional Evidence and Applied Knowledge Services.
- Pricopoaia, O., Susanu, S. A., Cristache, N., & Susanu, I. O. (2024). The impact of business incubators on the performance of the entrepreneurial ecosystem. *Economics and Applied Informatics*.
- Qureshi, S., Hassan, S. Z., & Mian, S. A. (2021). Business incubation and acceleration in Pakistan: An entrepreneurship ecosystem development approach. In *Handbook of research on business and technology incubation and acceleration*.
- Radosevic, S., & Myrzakhmet, M. (2009). Between vision and reality: promoting innovation through technoparks in an emerging economy. *Technovation*, 29(10), 645-656.
- Rothaermel, F. T., Agung, S. D., & Jiang, L. (2007). University entrepreneurship: a taxonomy of the literature. *Industrial and Corporate Change*, 16(4), 691-791.
- Saebi, T., Foss, N. J., & Linder, S. (2019). Social entrepreneurship research: Past achievements and future promises. *Journal of Management*, 45(1), 70-95
- Sánchez-Hernández, M. I., Bañegil-Palacios, T. M., & Sanguino-Galván, R. (2016). Empirical evidence of university spin-offs: A systematic literature review. *International Entrepreneurship and Management Journal*, 12(4), 1111-1142
- Sarasvathy, S. D. (2001). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review*, 26(2), 243–263.
- Schwartz, L., & Hornyk, C. (2010). Business incubators: A review of the literature 1990–2010. *International Journal of Entrepreneurial Venturing*, 2(2), 115–127.
- Scillitoe, J. L., & Chakrabarti, A. K. (2010). The role of incubator interactions in assisting new ventures. *Technovation*, 30(3), 155-167
- Scott, W. R. (1995). *Institutions and organizations*. Sage Publications
- Shahzad, K., Ahmed, J., & Siddique, F. U. (2025). Gig economy & freelancing: Opportunities & challenges in Pakistan: A qualitative study. *Journal of Social Science & Economics*, 4(1), 62–74.
- Small and Medium Enterprises Development Authority (SMEDA). (2022). *Provincial SME development report: Balochistan*. Government of Pakistan.
- Soetanto, D., & Jack, S. (2016). The impact of university-based incubation support on the innovation strategy of academic spin-offs. *Technovation*, 50, 25-40.
- Tariq, I., Shahzad, K., & Ahmed, W. (2024). An examination of factors influencing the provision of microcredits and informality of microenterprises in Balochistan: Exploring informal economy dynamics. *Kurdish Studies*, 12(4), 1242–1253.
- Taufik, M. A., & Dhewanto, W. (2022). The challenges of university-industry collaboration in the context of a developing country. *Journal of Science and Technology Policy Management*, 13(1), 165-184.
- Theodorakopoulos, N., Kakabadse, N. K., & McGowan, C. (2014). What matters in business incubation? A literature review and a suggestion for situated theorizing. *Journal of Small Business and Enterprise Development*, 21(4), 602-622.
- Tödling, F., & Trippel, M. (2005). One size fits all? Towards a differentiated regional innovation policy approach. *Research Policy*, 34(8), 1203-1219.
- Tylzanowski, R. (2023). University business incubators and their importance for beginners. *Scientific Papers of Silesian University of Technology, Organization and Management Series*, 176.
- Vedovello, C., Góes, M. C. S., & Figueiredo, P. N. (2020). University-industry linkages in the context of a developing country: The case of Brazil. *Innovation and Development*, 10(2), 223–243.
- World Bank & Organisation for Economic Co-operation and Development. (n.d.). *Business incubation reports* [Various reports].
- Zaidi, A. R., Khoso, I., & Khan, M. S. (2023). Fostering an entrepreneurial society: The role of university incubators. *International Research Journal of Management and Social Sciences*, 4(5).