Creating Conducive Environment for IT, Business, and Industrial Start-ups

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Abstract:

Governance plays a vital role in formulating climate change policies, especially in countries vulnerable to environmental hazards like Pakistan. Good governance requires a synergy between capable governments, civil society, and the private sector to create policies that improve disaster resilience and climate adaptation. Pakistan, although contributing less than 1% to global greenhouse gas emissions, ranks among the top 10 most affected countries by climate change. The recurrent climate-related disasters, such as the 2022 floods, demonstrate the urgent need for effective governance to mitigate climate risks. While Pakistan has aligned its national policies with international climate frameworks, challenges remain in policy implementation due to institutional, financial, and technical barriers. Strengthening governance, increasing domestic climate finance, and adopting innovative technologies are critical steps toward achieving resilience. Effective climate action requires a coordinated effort among all stakeholders to enhance Pakistan's capacity for climate adaptation and disaster preparedness.

Key words:

Governance, climate change Policies, Disaster Resilience, Climate Adaptation, Pakistan.

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Introduction

According to Forbes, start-ups are defined as newly established companies created to develop and market unique products or services, playing a pivotal role in driving innovation and economic development. These companies are often funded through various stages, starting with bootstrapping from founders, friends, and family, followed by seed funding from angel investors, and later rounds of funding (Series A, B, C, and D) led by venture capital firms. Eventually, some start-ups may go public through an Initial Public Offering (IPO) or be acquired by larger companies, providing an exit strategy for early investors (Baldridge, 2022).

Start-ups are critical to the economic development of any country, especially developing economies. They generate numerous employment opportunities, contributing significantly to GDP growth. For instance, according to a study by the Kauffman Foundation, start-ups in the United States create approximately 1.5 million jobs annually (Centre, 2023). Start-ups also drive economic activity, enhance a country's competitiveness, and foster regional development by addressing unmet needs and creating new markets. The role of technology in the success of start-ups cannot be overstated. IT facilitates product development, reduces costs through scalable solutions like cloud computing, enhances productivity, and improves customer service, enabling start-ups to reach broader markets efficiently (24x7direct, 2024).

Globally, countries have adopted various best practices to support start-ups. For example, Silicon Valley in the USA benefits from a robust legal framework, substantial funding, top-tier universities, and a culture of innovation (Iconsultant & Little, 2023). India has seen significant growth in its start-up ecosystem due to government initiatives like Start-up India, the SAMRIDH Scheme, and Make in India initiatives. With a large pool of affordable skilled labor, coupled with a vast domestic market and a conducive business environment, India has become a global powerhouse with more than 112,718 start-ups recognized by DPIIT (Department for Promotion of Industry and Internal Trade). As of January 2024, India had 111 unicorn start-ups (unicorn: a privately held start-up company valued at over $1 billion), with a total valuation of more than $350 billion (Ujjain, 2024). Additionally, Sweden and China provide strong innovation funding, collaborative spaces, and a supportive regulatory environment, contributing to their thriving start-up ecosystems (Iconsultant & Little, 2023).

In Pakistan, the start-up ecosystem has evolved significantly over the past two decades. One of the earliest successful start-ups, Rozee.pk, was founded by Monis Rahman in 2007 and became Pakistan's first venture capital-funded start-up (Niazi, 2023). The ecosystem has since grown, with notable start-ups like SimSim, Airlift, Bykea, Dukan, and Easypaisa, among others.

The establishment of the first incubator at NUST in 2005, followed by others at institutions like LUMS and IBA, laid the groundwork for a supportive environment for start-ups. The National Incubation Centers (NICs), launched in 2016, have further transformed the landscape, providing vital support to early-stage start-ups (Abbasi, 2019). Despite several challenges, Pakistani start-ups have attracted significant funding and investments in recent years. In 2020, the ecosystem received total investments of USD 70 million, with Bykea leading at USD 13 million. In 2021, investments soared more than five times, totaling USD 373 million. Despite the global recession in 2022, Pakistani start-ups raised USD 360 million (Iconsultant & Little, 2023). However, in 2023, investments drastically fell by 77.2% to a meager USD 75.6 million, due to, among other factors, high interest rates and a global tightening environment (Hussain, 2024).

Pakistan's regulatory framework for start-ups is complex and involves multiple regulatory bodies, including the Securities and Exchange Commission of Pakistan (SECP), the State Bank of Pakistan (SBP), and the Competition Commission of Pakistan (CCP), among others. The lack of a centralized regulatory authority results in fragmented oversight, increased compliance costs, and challenges for start-ups (Iconsultant & Little, 2023). However, the government has introduced several initiatives to support start-ups, such as the Pakistan Start-up Fund (MoITT, 2024), BridgeStart Pakistan (Ignite, 2024), and the establishment of Special Technology Zones, which provide infrastructure, resources, and incentives for innovation and entrepreneurship (Akhtar, 2023).

An understanding of the start-up ecosystem would be incomplete without mentioning Entrepreneurship Support Organizations (ESOs), which mainly include incubators and accelerators (Iconsultant & Little, 2023). These organizations play a crucial role in nurturing start-ups by providing, among other things, resources, mentorship, and networking opportunities. In Pakistan, there are 83 such entities, including eight NICs, Durshal, Takhleeq, NSPIRE, WomenX, and Invest2Innovate (i2i), as well as a number of incubators operated by universities like LUMS, IBA, NUST, and NUML, which support start-ups across various sectors. As per Ignite's 2023 report, NICs have collectively incubated 1,317 start-ups, of which 660 have successfully graduated (Iconsultant & Little, 2023). Further, NICs have become key supporters of female entrepreneurship, with almost one-third of their start-ups (491) led by women, representing 37% of all NIC-supported ventures.

Category	Total
Incubators	22
Accelerators	13
Co-Working spaces	18
University-based incubators	30
Total	**83**

Table 1: ESOs in Pakistan's Start-up Ecosystem (Iconsultant & Little, 2023)

In Pakistan, the fintech sector has seen notable growth, with platforms like JazzCash and Easypaisa promoting digital payments and financial inclusion. The e-commerce industry has also expanded, driven by platforms like Daraz, especially during the COVID-19 pandemic. Healthtech start-ups, such as oladoc.com and Marham, are improving access to medical services. The edtech sector, with platforms like SABAQ and Knowledge Platform, has gained traction, particularly during the pandemic. Agritech start-ups, like Ricult, are enhancing farming practices and promoting sustainable agriculture (URCA, 2024). However, Pakistan does not yet have a unicorn, unlike India, which had 111 unicorns as of January 2024 (Ujjain, 2024).

According to the Global Start-up Ecosystem Index Report 2023 by Genome, Pakistan is absent from the top 40 start-up hubs worldwide, while India's Bengaluru-Karnataka ranks 20th and Delhi stands at 24th position (Genome, 2023). Furthermore, according to Arthur D. Little's Archetype model for assessing the degree of digitization of an economy, which contains seven stages, Pakistan is at the second level, as an ICT patron. Countries within this archetype are characterized by their extensive use of ICT goods and services, although they have a minimal role in the global ICT value chain (Iconsultant & Little, 2023).

Figure 1: Arthur D. Little's Digitization Archetype Model

Despite significant efforts, Pakistan's start-up ecosystem faces challenges such as limited access to local venture capital, economic and political instability, and an over-reliance on international investors. Additionally, there are gaps in the educational system, insufficient training programs for entrepreneurs and start-up founders, and inconsistent internet connectivity, particularly in rural areas. Addressing these challenges through regulatory reforms, enhanced funding mechanisms, improved infrastructure, and targeted support programs is essential for the sustained growth and impact of the start-up ecosystem in Pakistan. By leveraging existing initiatives and

addressing these issues, Pakistan can cultivate a thriving start-up ecosystem that significantly contributes to economic growth and technological advancement. The following figure shows the major start-ups in Pakistan's start-up ecosystem as of 2023.

Figure 2: Major start-ups in Pakistan's start-up ecosystem (Darbar & Capital, 2023)

Statement of the Problem

"The start-up ecosystem in Pakistan is currently in its nascent stage, but it holds great potential for inclusive economic growth due to the large youth population and the government's supportive role, among other factors. In contrast, Pakistan is lagging far behind most global players like Singapore, China, and India, as evidenced by several international benchmarks. Therefore, there is an urgent need to examine the factors responsible for the overall performance of Pakistan's start-up ecosystem, such as the regulatory framework, access to finance, support structures, and skills alignment with industry needs, in order to identify the challenges and determine the way forward."

Literature Review

Start-ups are critical drivers of economic development, fostering innovation, creating jobs, and stimulating economic activity, thereby making a significant contribution to GDP growth (I2I, 2021). Technology plays a crucial role in their success, enabling rapid scaling and global reach through advanced tools like AI, IoT, and blockchain (PSEB, 2020). Pakistan's start-up ecosystem has evolved notably, with increased support from the Higher Education Commission (HEC) and the establishment of Business Incubation Centers (BICs) and Offices of Research, Innovation, and Commercialization (ORICs), though these initiatives face challenges related to coordination and quality (Iconsultant & Little, 2023). The ecosystem's potential is reflected in the $350 million raised by Pakistani start-ups in 2021, marking a 438% increase from the previous year, driven by a young, tech-savvy population and growing international investor confidence (I2I, 2021). However, the complex

regulatory environment, multiple agency involvement, and skill gaps in education present significant hurdles (Iconsultant & Little, 2023). Addressing these issues through enhanced support programs and better alignment between education and industry needs is crucial for sustaining momentum and fostering a conducive environment for start-ups.

ANALYSIS OF PAKISTAN'S START-UP ECOSYSTEM

1. Situational Analysis

i. Analysis of the Potential of Pakistan's Start-up Ecosystem

The Pakistani start-up ecosystem has shown substantial potential and strength in recent years. According to the Global Start-up Ecosystem Index 2024 by Start-upBlink, Pakistan ranks 71st worldwide and 2nd in South Asia (StartupBlink, 2024). In 2021, Pakistani start-ups raised a record $373 million, more than five times the amount raised in 2020, indicating growing investor confidence. The presence of international investors such as Tiger Global and Kleiner Perkins signifies Pakistan's rising prominence in the global start-up landscape (Iconsultant & Little, 2023). With nearly 64% of the population under 30, Pakistan boasts a large pool of young, tech-savvy individuals driving innovation. According to the Pakistan Economic Survey 2022-23 (Finance, 2023), Kearney's Global Services Location Index (2021) ranked Pakistan as the second most financially attractive location in the world for offshore outsourcing in IT and ITeS. The International Labour Organization (ILO) also reported Pakistan as the second-largest supplier of digital labor services in its 2021 report, highlighting the IT skills and potential of the Pakistani workforce.

Furthermore, there are 136 million broadband subscribers (both mobile and fixed-line), resulting in a broadband penetration rate of 56.37% (PTA, 2024). This digital transformation facilitates the growth of tech-based start-ups and expands their potential market.

Government initiatives and support programs, such as the Pakistan Start-up Fund (MoITT, 2024), BridgeStart Pakistan (Ignite, 2024), and Pakistan's largest free online training program, Digiskills.pk (Digiskills, 2024), as well as the HEC's Business Incubation Center Policy 2021 to foster entrepreneurial talent in universities (Iconsultant & Little, 2023), provide a supportive environment for start-ups. The establishment of Special Technology Zones aims to attract foreign investment through incentives like tax breaks. Additionally, the Government of Pakistan introduced the definition of a start-up into the Income Tax Ordinance, 2001, through the Finance Act of 2017, to promote innovation and entrepreneurship, particularly in IT. Before this, there were no specific tax exemptions for start-ups. The expansion of Entrepreneur Support Organizations (ESOs),

including 83 incubators, accelerators, and co-working spaces, offers crucial support to start-ups. Diverse sectors such as fintech, e-commerce, healthtech, edtech, and agritech are witnessing significant growth, with notable start-ups like Airlift and Bazaar achieving major milestones (I2I, 2021). Recent success stories such as Bykea, Farmdar, Pakvitae, BizB, MyTM, Digikhata, and Ezbike further reflect the potential for growth in Pakistan's start-up ecosystem (Iconsultant & Little, 2023).

A survey conducted by our research team, through a questionnaire circulated among different stakeholders (Annex-I), highlighted the following strengths and potential of Pakistan's start-up ecosystem, among others:

- High risk appetite among youth
- Resilience in adverse conditions
- Cultural shift towards entrepreneurship
- Increasing female participation
- Strong community and peer support
- Social media influence and reach

ii. **Analysis of the Current Status of Pakistan's Start-up Ecosystem**

The Pakistani start-up ecosystem has experienced reasonable growth in recent years, marked by an increase in the number of new start-ups and a rise in investments (up until 2022). In 2020, Pakistani start-ups raised $70 million, which soared to $373 million in 2021 and $360 million in 2022, despite global economic challenges (Iconsultant & Little, 2023). However, in 2023, the investment dropped drastically to a meager $75.6 million due to various internal and external factors (Hussain, 2024).

Additionally, there is a significant gender gap in Pakistan's start-up ecosystem. Out of the $277 million raised by Pakistani start-ups in early 2022, only $1.8 million was raised by a female entrepreneur (Iconsultant & Little, 2023). There is also a lack of cooperation and coordination among various stakeholders within the ecosystem, along with a deficiency of reliable data. For instance, while the Higher Education Commission (HEC) promoted the establishment of Business Incubation Centers (BICs) and Offices of Research, Innovation, and Commercialization (ORICs), these programs have faced challenges related to quality and insufficient communication and coordination among universities. Support entities such as incubators, accelerators, and co-working spaces have often operated in silos. Furthermore, there has been a significant deficiency in industry-level data collection and storage, resulting in the absence of data-driven growth strategies (Iconsultant & Little, 2023).

At present, Pakistan does not have a single unicorn, while India has 111 unicorns as of January 2024 (Ujjain, 2024). Another issue is the insufficient digital literacy in Pakistan, which is just over 34% (Mehdi, 2023), posing a significant impediment to the growth of a tech-driven start-up ecosystem. Additionally, according to PTA, around 44% of the population lacks internet access (PTA, 2024), particularly in remote and underdeveloped areas, contributing to a widening digital divide and hampering digital inclusivity.

A survey conducted by our research team (Annex-I) highlighted the following challenges in Pakistan's start-up ecosystem, among others:

- Skepticism towards digital payments
- Brain drain to more developed markets
- Slow adaptation to new technologies
- Bureaucratic hurdles
- High dependency on traditional business models

iii. **Contribution of Start-ups to the Economic Development of Pakistan**

Start-ups are critical to Pakistan's economic development, driving innovation, creating employment opportunities, and contributing to GDP growth. According to Ignite's report, the National Incubation Centers (NICs) have performed commendably well against the amount invested by Ignite, generating a total of PKR 13.85 billion versus PKR 22.10 billion invested. Since 2017, approximately PKR 3 billion has been spent on capital and operational expenditures for the first five NICs. The overall impact, considering cumulative revenue and investments, has amounted to around PKR 35.95 billion, yielding a financial return approximately 12 times the initial investment of PKR 3 billion.

Furthermore, more than 126,000 jobs have been created through NICs-supported start-ups, and around 500 female founders and entrepreneurs have been supported. The following figure briefly highlights the contribution of NICs to the Pakistani economy:

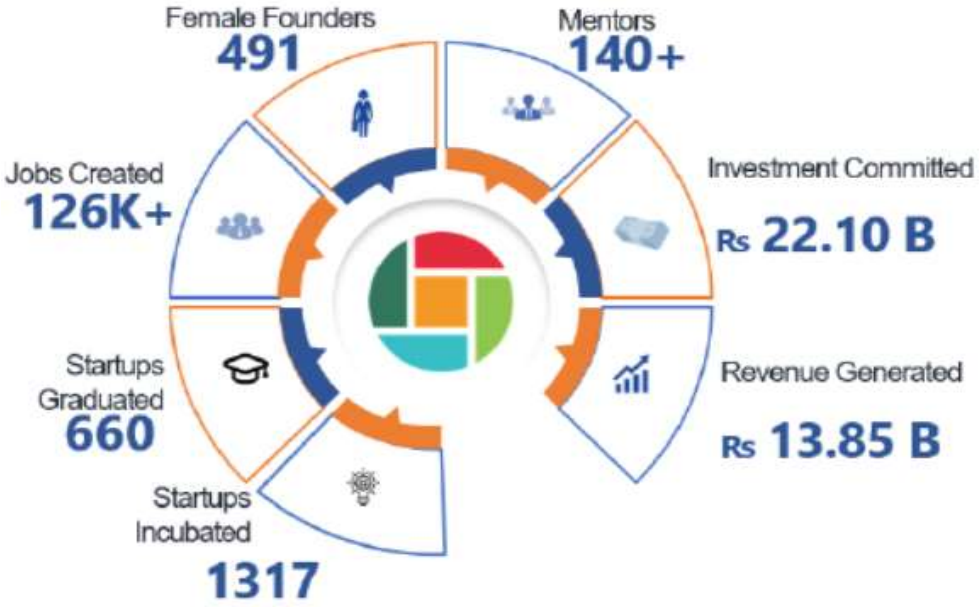
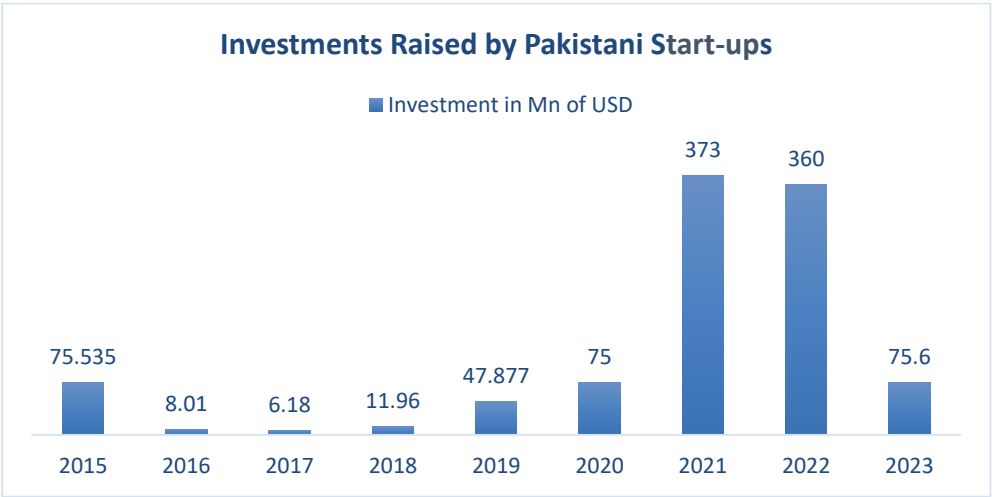


Figure 2: Achievements of NICs (Iconsultant & Little, 2023)

In an interview conducted by Al Jazeera, Mr. Faisal Aftab, CEO of Zayn Capital (a venture capital fund), estimated that Pakistani start-ups will be worth USD 50 billion by 2030. According to him, the current valuation of Pakistan's start-up ecosystem is estimated at $1.8 billion. Including companies like Daraz and Foodpanda, this valuation increases to between $3 billion and $4 billion. Daraz, an e-commerce platform founded in Pakistan, now operates in multiple countries, while Foodpanda is an international food and grocery delivery service (Chughtai & Ali, 2022). Moreover, there has been a continuous rise in investments attracted by Pakistani start-ups since 2017; however, the number dropped in 2023 due to several internal and external factors. The following chart shows the trend (Chughtai & Ali, 2022; Iconsultant & Little, 2023; Hussain, 2024):



2. Analysis of Existing Legal & Institutional Frameworks

i. Current Legal and Institutional Framework

Currently, Pakistan lacks an independent regulatory framework or a specific regulator for start-ups. Start-ups are subject to the same regulations as other business entities, with the applicable legal regime depending on their structure (e.g., sole proprietorship, partnership, LLC) and business activities. The absence of a single regulator means that different regulatory authorities may become involved based on the start-up's activities, transactions, and parties involved. Below is a list of relevant acts and regulators that govern start-ups in Pakistan (Iconsultant & Little, 2023):

a) Acts:

- Companies Act, 2017
- Central Depository Act, 2017
- Securities Act, 2015
- Foreign Exchange Regulation Act, 1947
- Electronic Transaction Ordinance, 2002
- Competition Act, 2010
- Prevention of Electronic Crimes Act, 2016

b) Regulators/Institutions:

- Securities and Exchange Commission of Pakistan (SECP)
- State Bank of Pakistan (SBP)
- Competition Commission of Pakistan (CCP)
- Intellectual Property Organization (IPO)
- Central Depository Company (CDC)
- Electronic Certification and Accreditation Council (ECAC)
- Punjab Information Technology Board (PITB)
- National Information Technology Board (NITB)
- Pakistan Software Export Board (PSEB)

ii. Current Taxation Regime for Start-ups

The Government of Pakistan introduced the definition of a start-up into the Income Tax Ordinance, 2001, through the Finance Act, 2017, to promote innovation and entrepreneurship, particularly in IT. Prior to this, there were no specific tax exemptions for start-ups. According to Section 2(62A) of the Ordinance, a start-up is defined as a business established by a resident individual, association of persons (AOP), or company that began on or after July 1, 2012, offering technology-driven products or services, certified by the Pakistan Software Export Board (PSEB), with a turnover of less than PKR 100 million in each of the last five tax years (Iconsultant & Little, 2023).

Notwithstanding the above, this tax exemption for start-ups is valid for only three years. After this period, if the start-up is registered with the Securities and Exchange Commission of Pakistan (SECP), it faces a high tax rate of 29% on profits (the small company rate for 2022 is 21%). This high tax burden can result in low net profits and returns, making it difficult for start-ups to absorb initial investments during this period.

Moreover, there is an inconsistency between federal and provincial sales taxes in Pakistan. Changes in tax rates and the need for multiple registrations at both the provincial and federal levels complicate business management for investors. Additionally, a 17% general sales tax on IT equipment (excluding laptops, which are taxed at 5%) raises the cost of services for both end users and start-ups, increasing operational expenses (Iconsultant & Little, 2023). Lastly, the cumbersome withholding tax regime, the lack of tax exemption for local investors in start-ups, and the absence of tax exemptions on salaries of individuals serving in start-ups are other issues that make the start-up ecosystem unattractive (Iconsultant & Little, 2023).

iii. "Exit" Framework

Unlike established companies, where financing focuses on growth for higher dividends or stock prices, start-up financing emphasizes "exits" by founders and investors for scaling the business, aiming for higher payouts upon exit. Therefore, all start-up transactions and financing instruments consider rights and liabilities at the time of exit. Legal policies on exits, such as Initial Public Offerings (IPOs) and Mergers and Acquisitions (M&As), significantly impact the start-up ecosystem and influence venture capital (VC) and angel investment decisions. The Global Start-up Ecosystem Report 2022 by Start-up Genome highlights that 7 of the top 15 start-up ecosystems were US cities, largely due to the JOBS Act, which created fundraising exemptions and relaxed exit options for start-ups. This act positively impacted the number of IPOs and increased start-up valuations in M&A transactions, as evidenced by various academic and research studies (Iconsultant & Little, 2023). A 2018 Ernst & Young report noted that start-ups accounted for 94% of IPOs in the first nine months, reflecting the JOBS Act's influence.

a) Exit through Initial Public Offering (IPO):

An Initial Public Offering (IPO) is the process by which a private corporation offers shares to the public, transitioning from a private to a publicly traded company. After an IPO, the company's shares are listed on a stock exchange and available for public trading. In Pakistan, the start-up ecosystem is still developing, and many start-ups need more time to mature before they can contemplate going public.

b) Exit through Mergers and Acquisitions (M&As):

The most popular exit strategy for investors in start-ups is acquisition or merger with another company, as IPOs are often not feasible for younger start-ups. Recent examples in Pakistan include Uber's acquisition of Careem, Zoodpay's acquisition of Tez Financial Services Limited, and GoZayaan's acquisition of Findmyadventure. The primary laws governing mergers and acquisitions (M&As) in Pakistan are the Companies Act and the Competition Act 2010 (Iconsultant & Little, 2023).

c) Exit through Private Placement:

A popular alternative to IPOs is private placement, where securities are offered to a select group of investors rather than being listed on the stock exchange. According to Section 2 (xl) of the Securities Act, a private placement involves offering securities to a specific group of investors without using print or electronic media for invitations. This option is favored by venture capitalists and select investors, as it bypasses the extensive IPO process while still allowing for external investment. In Pakistan, under the Private Placement of Securities Rules 2017, all companies, except single-member companies, can issue securities through private placement, following the procedure outlined in Section 83 of the Companies Act.

According to Section 87 of the Securities Act, no one is allowed to publicly offer securities without meeting specific conditions. These conditions are detailed in Regulation 3 of the Public Offering Regulations 2017.

iv. IPO Regime

Intellectual Property Rights (IPRs) in Pakistan are governed by the Intellectual Property Organization (IPO) of Pakistan, established under the IPO Act, 2012. The IPO ensures the enforcement of IPRs with the help of enforcement agencies like the Federal Investigation Agency (FIA), Federal Board of Revenue (FBR), and local police. The IPO also creates awareness about IP rights and advises the Federal Government on implementing IP policies. The key types of intellectual property managed by the IPO include patents, layout designs of integrated circuits, industrial designs, copyrights, trademarks, and geographical indications. The primary legislation governing these areas includes the Patents Ordinance 2000, Copyright Ordinance 1962, and Trademarks Ordinance 2001, reflecting Pakistan's compliance with international treaties like the Paris Convention, Berne Convention, and TRIPS.

However, according to a survey (Annex-I), Mr. Pir Amad Ali Shah, the Project Director of Durshal Incubator, stated that “Start-ups in KPK struggle with inadequate IP laws, leading to fears of idea theft.” The situation is largely similar in other parts of the country.

3. Comparative Analysis of Pakistan's Start-up Ecosystem with International Best Practices

i. Legal Framework

a) Pakistan

The legal framework for start-ups in Pakistan involves multiple regulatory bodies, such as the Securities and Exchange Commission of Pakistan (SECP), Federal Board of Revenue (FBR), and the State Bank of Pakistan, among others (StartupDotPK, 2022, September). The regulatory environment is complex, with high tax rates and bureaucratic delays due to the absence of a single regulatory authority. Furthermore, the tax exemption for start-ups is limited to just three years, after which high taxes on profits are imposed (Pakistan, 2023, July 30).

b) International Best Practices

Countries like the USA benefit from streamlined legal frameworks and policies such as the JOBS Act, which aims to reduce regulatory burdens on start-ups while facilitating their access to capital markets, maintaining necessary investor protections, and relaxing exit options for start-ups. This has significantly boosted IPOs and M&A transactions (JOBS Act, 2012). Start-ups in the USA employ 4% of the private workforce. Singapore provides a simplified regulatory environment with substantial government support through grants like the Enterprise Development Grant. India's *Startup India* initiative has reduced regulatory burdens and streamlined processes for start-ups (Karandaaz, 2024).

ii. ESOs (Incubators and Accelerators)

a) Pakistan

Pakistan has around 83 incubators and accelerators, including the National Incubation Centers (NICs), which provide essential support to start-ups. However, many incubators lack sufficient resources and consistent quality, limiting their effectiveness (Pakistan, 2023, July 30).

b) International Best Practices

In Silicon Valley, incubators like Y Combinator have been highly effective, housing 20% of all U.S. start-ups due to world-class mentorship, funding opportunities, and strong industry connections (Y Combinator, 2024). India's BIRAC SEED Fund supports biotech start-ups with specialized incubators and funding, enabling innovation and growth (Karandaaz, 2024).

iii. Access to Finance
a) Pakistan

Start-ups in Pakistan face limited access to local venture capital and economic instability. Government initiatives like the Pakistan Start-up Fund provide some support, but there remains a heavy reliance on international investors (Pakistan, 2023, July 30).

b) International Best Practices

Silicon Valley enjoys unparalleled access to venture capital, with substantial investments in start-ups. In China, high-tech start-ups benefit from policy initiatives and significant government funding, which amounted to $53.7 billion in 2022. Singapore offers a range of financial incentives and funding programs for start-ups, including early-stage funding and tax incentives (Karandaaz, 2024).

iv. Skills and Capacity of Entrepreneurs & Start-up Founders
a) Pakistan

There is a significant gap between the skills provided by educational institutions and the needs of the start-up industry. Limited training programs and a lack of experienced mentors exacerbate this issue (Iconsultant & Little, 2023).

b) International Best Practices

The USA and India emphasize STEM education and entrepreneurship training, producing a skilled workforce. India's collaboration between government, academia, and the private sector has enhanced the skills of entrepreneurs through extensive training programs (Karandaaz, 2024).

v. Technology Adoption and Innovation
a) Pakistan

Start-ups in Pakistan face challenges such as inconsistent internet connectivity and limited access to advanced technologies. The pace of digital transformation is slower compared to other regions, which limits tech-driven innovation (Pakistan, 2023, July 30).

b) International Best Practices

Silicon Valley leads in the adoption of emerging technologies such as AI, IoT, and blockchain, with robust support from the ecosystem. The Chinese government heavily invests in high-tech sectors, promoting rapid adoption and integration of advanced technologies (Karandaaz, 2024).

vi. Market Access & Internationalization
a) Pakistan

The limited domestic market and regulatory hurdles restrict the growth potential of start-ups. Programs like BridgeStart aim to address these issues, but more comprehensive efforts are needed (Pakistan, 2023, July 30).

b) International Best Practices

Singapore's strategic location and excellent infrastructure make it a prime hub for international business. The USA's global networks and market size provide extensive opportunities for start-ups to scale internationally. India's *Startup India* initiative also supports international market access through various programs (Karandaaz, 2024).

vii. Government Incentives including Tax Exemptions
a) Pakistan

Start-ups in Pakistan benefit from a three-year tax exemption, but subsequent high tax rates significantly reduce net profits. There is a lack of targeted support and a complex tax structure that deters new start-ups (Pakistan, 2023, July 30).

b) International Best Practices

The USA offers substantial government incentives, including tax breaks and grants. China provides reduced corporate income tax rates and significant R&D expense deductions. Singapore offers extensive tax incentives and financial support programs to foster a conducive start-up environment (Salminen, 2021).

viii. Monitoring & Evaluation of Support Programs
a) Pakistan

There is a lack of comprehensive metrics and consistent data collection methods, making it difficult to evaluate the effectiveness of start-up support programs (Pakistan, 2023, July 30).

b) International Best Practices

The USA employs robust monitoring and evaluation frameworks with detailed metrics to track the performance of start-up support programs. Singapore regularly reviews its programs to ensure they remain aligned with evolving market needs. India's monitoring systems under the *Startup India* initiative provide valuable insights for continuous improvement (Karandaaz, 2024).

4. SWOT Analysis of Start-up ESOs (Including Incubators & Accelerators) in Pakistan

i. Strengths:

a) Supportive Infrastructure

Incubators and accelerators in Pakistan, such as the National Incubation Centers (NICs) and other Entrepreneurial Support Organizations (ESOs), provide essential infrastructure, mentorship, and networking opportunities that are critical for early-stage start-ups.

b) Government Support

Government initiatives and support programs, such as the *Pakistan Start-up Fund* (which offers 10%-30% of the total investment made by venture capitalists in start-ups) (MoITT, 2024), *BridgeStart Pakistan* (which offers international exposure to young entrepreneurs) (Ignite, 2024), and Pakistan's largest free online training program, *Digiskills.pk* (Digiskills, 2024), are key strengths in supporting start-up development in the country.

c) Sectoral Diversity

Incubators and accelerators in Pakistan support a diverse range of sectors, including fintech, e-commerce, healthtech, edtech, and agritech, which highlights the ecosystem's adaptability and broad scope. Notable start-ups, such as *Airlift* in logistics, *Daraz* and *Bazaar* in e-commerce, and *Easypaisa* and *Finja* in fintech, demonstrate the ecosystem's potential for innovation across different sectors (Iconsultant & Little, 2023).

d) International Interest

Growing interest from international investors, including partnerships with global venture capital firms such as *Tiger Global* and *Kleiner Perkins* (which entered the Pakistani start-up market in 2021), further enhances the credibility and potential of local start-ups (Iconsultant & Little, 2023).

ii. Weaknesses:

a) Resource Constraints

Many incubators and accelerators face financial and operational limitations, which can hinder their ability to provide consistent, high-quality support to start-ups (Iconsultant & Little, 2023).

b) Politico-Economic Instability

Pakistan's political and economic instability negatively impacts the start-up

ecosystem by creating an unpredictable business environment. This instability can deter investment, disrupt supply chains, and reduce consumer spending power. Uncertainty around regulations and economic policies further complicates securing funding, attracting talent, and maintaining consistent operations, stifling innovation and growth in start-ups.

c) Lack of Coordination and Data Collection

There is a lack of coordination and communication among stakeholders of the start-up ecosystem, including ESOs, academia, industry, and government. This results in fragmented support structures, reducing overall efficiency and impact. Additionally, insufficient industry-level data collection and analysis hinder data-driven growth strategies and the ability to measure the impact of start-up initiatives accurately.

d) Quality and Consistency Issues

There are varying levels of quality and effectiveness among different incubators and accelerators, leading to inconsistencies in the support provided to start-ups. These discrepancies can limit the overall success and sustainability of the ecosystem (Iconsultant & Little, 2023).

iii. Opportunities:

a) Contribution to Economic Development

A thriving start-up ecosystem can significantly contribute to economic development by driving innovation, creating employment opportunities, and boosting GDP growth in Pakistan.

b) Digital Economy

A tech-driven start-up ecosystem will help bridge the digital divide, increase digital inclusivity, and foster a culture of innovation and entrepreneurship, thus contributing to the broader digital economy.

c) Youth Demographics

With around 64% of the population under the age of 30, Pakistan has a large pool of young, tech-savvy individuals who are well-positioned to drive innovation and entrepreneurship.

d) Digital Transformation

With high broadband penetration (around 56.37%) (PTA, 2024) and ongoing digital transformation initiatives, Pakistan's start-up ecosystem is poised to take advantage of a conducive environment for tech-based start-ups to thrive.

iv. Threats:

a) Resource Drain

Start-ups often attract significant amounts of capital and talent, which can sometimes lead to a resource drain from other critical sectors of the economy. High-paying jobs in start-ups and the allure of start-up culture may draw skilled professionals away from traditional industries, such as manufacturing, healthcare, and education. This could result in skill shortages in these sectors, negatively impacting their growth and development (Gompers & Lerner, 2001).

b) Regulatory and Ethical Challenges

The rapid pace of innovation in start-ups can outstrip existing regulatory frameworks, creating challenges for policymakers. Start-ups operating in emerging technologies, such as artificial intelligence, biotechnology, and fintech, may present ethical and regulatory dilemmas that require careful management. For instance, the rise of ride-sharing platforms like *inDrive* and *Uber* has led to regulatory challenges and labor disputes globally, emphasizing the need for adaptive regulatory approaches.

c) Economic Instability

Start-ups, especially in their early stages, are inherently risky with high failure rates. This presents a threat of economic instability if a large portion of the economy becomes reliant on these ventures. The failure of high-profile start-ups could lead to job losses, reduced investor confidence, and potential financial losses for stakeholders. The collapse of the dot-com bubble in the early 2000s is a stark reminder of the risks tied to over-reliance on the success of start-ups (Lerner, 2020).

d) Cybersecurity Risks

Start-ups often operate with limited resources, which can lead to underinvestment in cybersecurity measures. This makes them vulnerable to cyberattacks, which can have significant repercussions, not just for the start-ups themselves, but also for their clients and partners.

5. PESTLE Analysis of Pakistan's Start-up Ecosystem

i. Political

The Pakistani government actively supports the start-up ecosystem through various initiatives, such as the *Start-up Pakistan Program* and the establishment of *National Incubation Centers (NICs)*. These initiatives provide essential resources like mentorship, funding, and infrastructural support. Programs like *BridgeStart* aim to globalize Pakistani start-ups by offering them international exposure, with funding up to PKR 5 million for incubation and acceleration in top global incubators (Desk, 2024). However, political instability, frequent changes in government policies, and unpredictable regulatory environments create uncertainty for start-ups. This volatility poses challenges in long-term planning, decision-making, and business stability, discouraging both domestic and foreign investment.

ii. Economic

Pakistan's start-up ecosystem benefits from a large, young, and tech-savvy population, providing a substantial market for new products and services. Successful start-ups such as *Dawaai*, *Bykea*, and *Daraz* showcase the potential within key sectors like healthcare, transportation, and e-commerce. Despite this potential, economic instability, high inflation, and fluctuating currency values complicate financial planning for start-ups. Limited access to local venture capital exacerbates funding challenges, though international interest in the ecosystem is growing. Initiatives like the *Pakistan Start-up Fund* aim to ease financial pressures by providing equity-free grants to start-ups, but a long-term, sustainable funding model is still a work in progress.

iii. Social

Social and cultural factors have a profound impact on the start-up ecosystem in Pakistan. There is a societal preference for stable, traditional career paths (e.g., government jobs or corporate positions) over entrepreneurial ventures, which fosters a risk-averse mindset. This cultural tendency can deter potential entrepreneurs. Furthermore, gender biases and societal norms continue to limit the participation of women in the start-up ecosystem. Women-led start-ups account for a significantly lower proportion of total investments, indicating a gender disparity that hinders broader participation. Nevertheless, initiatives like NICs and growing awareness around global start-up success stories are gradually shifting attitudes, particularly among the youth, towards embracing entrepreneurship. Increasing digital literacy and the rise of female role models in the start-up space are also helping to overcome these social barriers.

iv. Technological

Technological advancements are a driving force for the growth of Pakistan's start-up ecosystem. With increased internet penetration and mobile connectivity, opportunities for tech-based start-ups have flourished. Companies like *Finja* (financial services) and *Bykea* (transportation) are leveraging technology to solve critical challenges in their respective sectors. However, there are still significant barriers to growth, such as inconsistent internet connectivity and underdeveloped technological infrastructure, particularly in rural areas. Additionally, the slow adoption of emerging technologies, such as artificial intelligence (AI), the Internet of Things (IoT), blockchain, and cloud computing, is impeding the country's broader digital transformation. To foster the growth of tech-based start-ups, continued investment in digital infrastructure and broader access to advanced technologies is essential.

v. Legal

The legal framework for start-ups in Pakistan is complex and fragmented, as no single regulatory body or law specifically addresses the needs of start-ups. Multiple regulatory authorities and legal instruments govern start-up activities, including the *Companies Act 2017*, *Income Tax Ordinance 2001*, and various provincial laws. This lack of a unified legal structure makes compliance burdensome for start-ups. Additionally, inconsistencies between federal and provincial tax regimes further complicate the business environment. The complex and lengthy process of obtaining permits, licenses, and approvals for new ventures, combined with a high tax burden after the initial three-year tax exemption period, remains a significant hurdle. Streamlining the regulatory environment and creating a more start-up-friendly legal framework could enhance the attractiveness of Pakistan as an entrepreneurial hub.

vi. Environmental

Environmental factors are becoming increasingly important for start-ups, particularly those in sectors like agritech, cleantech, and renewable energy. Pakistan faces serious environmental challenges, including water scarcity, air pollution, and the broader impacts of climate change. Start-ups focused on sustainable farming practices, efficient resource management, and clean energy solutions can play a vital role in addressing these environmental issues. However, there is a lack of comprehensive environmental policies and support mechanisms to incentivize environmentally sustainable practices across sectors. As global awareness of environmental sustainability grows, there is a clear opportunity for start-ups to innovate and provide solutions for climate resilience and resource conservation. The government's role in providing clear regulatory frameworks and incentives for green technologies will be essential in promoting a sustainable start-up ecosystem.

CHALLENGES FACED BY PAKISTAN'S START-UP ECOSYSTEM

i.**Regulatory/Legal**

i. **Delay and Cost Increase:** The regulatory framework involves multiple agencies, leading to delays and increased costs. The average time to start a business in Pakistan is 16.5 days, significantly higher than the regional average of 9.2 days. (Iconsultant & Little, 2023)
ii. **Multiple Regulatory Bodies:** Over 20 different regulatory bodies govern various aspects of start-ups, creating confusion and inefficiencies. (Iconsultant & Little, 2023)
iii. **Lengthy Permit & License Process:** Obtaining necessary permits can take up to 45 days on average, compared to 25 days in neighboring countries. (NTF, 2023)

1. **Start-up Incubation and Acceleration**
   i. **Resource Constraints:** Only 30% of incubators have access to adequate funding and networks. (Iconsultant & Little, 2023)
   ii. **Limited Capacity to Scale Up:** 60% of start-ups fail to scale beyond the initial stages due to inadequate support. (NTF, 2023)
   iii. **Varying Levels of Support:** The success rate of start-ups varies widely, with only 10% receiving consistent, high-quality support across incubators. (NTF, 2023)
2. **Access to Finance**
   i. **Restrictive Access to Local Venture Capital:** Only 25% of start-ups secure local venture capital funding. (Iconsultant & Little, 2023)
   ii. **High Inflation and Currency Fluctuations:** The inflation rate in Pakistan for March 2023 was 35.4%, while 23.1% was recorded in February 2024. (Statistics, 2024)
   iii. **Insufficient International Investments:** Foreign investment accounts for only 15% of total start-up funding needs. (Iconsultant & Little, 2023)
3. **Skills Development and Capacity Building**
   i. **Gap Between Educational Outputs and Industry Needs:** Only 40% of graduates possess skills aligned with start-up needs. (Iconsultant & Little, 2023)
   ii. **Limited Training Programs:** There is insufficient focus on entrepreneurship education, with less than 10% of educational institutions offering comprehensive entrepreneurship training. (NTF, 2023)
   iii. **Need for Mentorship:** There is a lack of experienced mentors, as 70% of start-ups report a lack of access to experienced mentors. (NTF, 2023)
4. **Technology Adoption and Innovation**
   i. **Inconsistent Internet Connectivity:** As of 2024, approximately 62.7% of Pakistan's population resides in rural areas. Rural areas experience internet speeds up to 50% slower than urban areas. (Bank, 2024)
   ii. **Difficulty Accessing Cutting-edge Technologies:** Only 20% of start-ups have access to advanced tech tools. (NTF, 2023)

iii. **Slow Digital Transformation:** Pakistan's pace is slower compared to other regions in transforming its traditional processes into modern and technologically advanced techniques. Pakistan ranks 90th out of 100 in digital transformation readiness. (Iconsultant & Little, 2023)

5. **Market Access and Internationalization**
   i. **Limited Local Market Size:** The domestic market size for start-ups is $1 billion, much smaller than regional counterparts. (NTF, 2023)
   ii. **Barriers to Expanding Internationally:** Due to regulatory hurdles and limited networks, only 5% of start-ups successfully expand internationally. (NTF, 2023)
   iii. **Insufficient Comprehensive Efforts for International Exposure:** Only 15% of start-ups participate in international incubator programs. (Hassan, 2023, January)
6. **Incentives to Start-ups**
   i. **Limited Financial Support:** Financial incentives cover only 10% of start-up needs. (Iconsultant & Little, 2023)
   ii. **Lack of Targeted Support:** Pakistan does not have a tailored incentive regime for various sectors. Almost 70% of start-ups find current incentives inadequate for their specific needs. (NTF, 2023) Additionally, there is a glaring gender gap in Pakistan's start-up ecosystem. Out of the $277 million invested in Pakistani start-ups in early 2022, only $1.8 million was raised by the only female entrepreneur. (Iconsultant & Little, 2023)
   iii. **Complex Tax Structures:** The current tax environment for start-ups in Pakistan presents several challenges, including limited tax exemptions and inconsistencies in sales tax regimes across different provinces (e.g., 5% federally, in Sindh, Punjab, and KPK, but 15% in Baluchistan), further complicating the tax landscape. Start-ups currently benefit from a tax exemption period of only three years, after which they face a high tax rate on profits (29% for regular companies and 21% for small companies in 2022). (Iconsultant & Little, 2023)
7. **Monitoring and Evaluation**
   i. **Need for Better Performance Metrics:** Approximately 80% of programs lack standardized performance indicators. (NTF, 2023)
   ii. **Hinders Effectiveness Assessment:** Only 30% of support programs collect consistent data required for monitoring and evaluation purposes. (NTF, 2023)
   iii. **Limited Feedback from Start-ups:** 60% of start-ups report inadequate feedback mechanisms for continuous improvement. (NTF, 2023)

FAULT LINES

1. **Legal/Regulatory Framework**
   The absence of a single authority and a unified set of rules or acts to govern start-ups in Pakistan.
2. **Start-up Incubation and Acceleration**

Financial constraints and a lack of experienced mentors to properly guide emerging entrepreneurs.

3. **Access to Finance**
   VCs, angel investors, and other funding sources are reluctant to invest in Pakistan's start-up ecosystem due to the unstable and uncertain political and economic situation.
4. **Skills Development and Capacity Building of Start-up Founders/Entrepreneurs**
   The gap between Pakistan's education system/syllabi and the requirements of the tech-driven emerging industry/market.
5. **Technology Adoption and Innovation by Start-ups**
   Start-ups in Pakistan are slow to adopt emerging technologies like AI, IoT, and blockchain due to a lesser appetite in the Pakistani market for such tech-driven solutions, as is evident from the low digital literacy rate of 34%. (Mehdi, 2023)
6. **Market Access and Internationalization of Start-ups**
   Pakistani start-ups have limited success in both domestic and international markets due to quality and cost issues, making their products less competitive compared to international suppliers like China.
7. **Incentives to Start-ups**
   The tax exemption of three years granted to start-ups under the Finance Act, 2017, is insufficient. Moreover, the tax rate after the lapse of three years is very high for SECP-registered start-up companies (up to 29% on profits), resulting in low net profits and returns.

Conclusion

The research into Pakistan's start-up ecosystem reveals a dynamic yet challenging landscape, characterized by significant potential for growth amidst considerable obstacles. Key challenges identified include a complex legal framework, which lacks a single legal instrument and regulatory body for start-ups, posing regulatory hurdles for them, as well as difficulties related to Initial Public Offerings (IPOs), which limit avenues for growth and exit strategies. These regulatory complications often result in a lack of investor confidence and hinder the scalability of promising start-ups.

Furthermore, the ecosystem suffers from a fragmented support structure, with insufficient collaboration between government bodies, private sector stakeholders, and academic institutions. This lack of cohesion restricts access to vital resources, such as funding, mentorship, and technical expertise, which are crucial for nurturing nascent enterprises.

Despite these challenges, the findings highlight several promising initiatives that could pave the way for a more robust start-up ecosystem in Pakistan. Government-led programs like the Pakistan e-Rozgar Program and DigiSkills.pk, along with initiatives such as BridgeStart Pakistan and the Pakistan Start-up Fund, demonstrate a commitment to fostering entrepreneurship. These programs aim to equip aspiring entrepreneurs with

the necessary skills, resources, and exposure to succeed in a competitive market. Additionally, the digital transformation efforts across various sectors, including agriculture, health, and tourism, create new opportunities for innovation and entrepreneurship.

By addressing the identified challenges and leveraging these initiatives, Pakistan has the potential to cultivate a thriving start-up ecosystem that can significantly contribute to economic growth and technological advancement.

Recommendations

Based on the comprehensive analysis of Pakistan's start-up ecosystem, here are the detailed recommendations for creating a conducive environment for IT, business, and industrial start-ups to address the identified challenges and boost the growth of start-ups in the country:

1. Regulatory/Legal Reforms

i. **Simplify the Regulatory Framework**: Simplifying the regulatory framework for start-ups is essential to foster a more conducive environment for entrepreneurship. By establishing a single-window system, start-ups can fulfill all necessary legal and regulatory requirements through a streamlined process. This approach would significantly reduce bureaucratic delays, lower compliance costs, and enhance overall efficiency. Entrepreneurs would be able to focus more on innovation and business development rather than navigating complex administrative procedures, thereby accelerating the growth of the start-up ecosystem.

ii. **Create a Centralized Regulatory Body**: The creation of a centralized regulatory body dedicated to start-ups is crucial for ensuring consistent and coherent policies across the ecosystem. This body would oversee all regulatory requirements, providing start-ups with a clear point of contact for their regulatory needs. It would also facilitate better coordination among various government agencies, ensuring that policies are implemented effectively and efficiently. A centralized authority would help address the unique challenges faced by start-ups, fostering a more supportive regulatory environment.

iii. **Fast-Track Processes for Ancillary Matters**: Implementing technology-driven fast-track processes at relevant departments to handle ancillary matters not covered under the single-window system is vital. These processes would leverage modern technological solutions to expedite administrative tasks, reducing the time and effort required for start-ups to comply with regulatory obligations. By doing so, start-ups can focus on their core business activities, enhancing productivity and innovation. The fast-tracking of ancillary matters would also contribute to a more dynamic and responsive regulatory framework.

2. Incubators and Accelerators

i. **Increase Funding**: Increasing funding for incubators and accelerators is critical to ensure they are well-resourced and capable of providing comprehensive support to start-ups. This can include financial grants, state-of-the-art facilities, and access to global networks of angel investors and venture capitalists. Adequate funding would enable these entities to offer high-quality mentorship, training, and resources, which are essential for the growth and success of start-ups. A well-funded ecosystem would attract more entrepreneurs and foster a culture of innovation and entrepreneurship.

ii. **Develop Scalability Programs**: Developing programs that focus on scaling start-ups beyond the initial incubation stage is essential for sustained growth. These programs should offer advanced training, mentorship, and strategic partnerships among entrepreneurial support organizations (ESOs) to help start-ups expand. Scalability programs would address the challenges faced by start-ups as they transition from early-stage ventures to growth-stage companies. By providing the necessary support and resources, these programs would enable start-ups to achieve their full potential and contribute to economic development.

iii. **Incentives to Incubators & Accelerators, Including Tax Exemptions**: Providing incentives to incubators and accelerators, such as tax exemptions, is crucial for promoting innovation and entrepreneurship. These incentives would reduce financial risks for start-ups, attract and retain talent, and enhance the quality of support services. By fostering regional development, these incentives would create a more vibrant and competitive start-up ecosystem. Moreover, incentivizing incubators and accelerators would drive economic growth, job creation, and the overall success of start-ups.

3. Access to Finance

i. **Encourage Local Investment**: Encouraging local investment through tax incentives for venture capitalists and angel investors is vital for providing start-ups with the necessary funding. Establishing government-backed venture capital funds would further support this initiative by offering financial resources to start-ups. By creating a favorable investment climate, these measures would attract local investors and stimulate economic growth. Encouraging local investment would also foster a sense of community and support within the start-up ecosystem.

ii. **Facilitate International Investments**: Facilitating easier access to international investors is essential for attracting global funding and expertise. Easing foreign exchange regulations and offering incentives for foreign investments would make Pakistan's start-up ecosystem more attractive to global investors. Promoting the ecosystem internationally would also enhance visibility and credibility, drawing more international attention and investment. These efforts would provide start-ups with access to a broader range of resources, networks, and opportunities.

4. Skills Development and Capacity Building of Entrepreneurs

i. **Align Education Programs**: Aligning educational programs with industry needs by incorporating entrepreneurship and technology courses into academic curricula is crucial for preparing future entrepreneurs. Educational institutions should collaborate with industry stakeholders to ensure that curricula are relevant and up-to-date. By fostering an entrepreneurial mindset and equipping students with practical skills, these programs would contribute to the development of a skilled workforce capable of driving innovation and entrepreneurship.

ii. **Capacity Building of Entrepreneurs**: Entrepreneurial support organizations (ESOs), especially national incubation centers (NICs), should focus on providing skills development programs to emerging entrepreneurs. Partnering with tech companies for training programs on emerging technologies, such as artificial intelligence (AI), the Internet of Things (IoT), and blockchain, would enhance the technical capabilities of entrepreneurs. These programs should also include internships to provide hands-on experience. Capacity-building initiatives would equip entrepreneurs with the knowledge and skills needed to succeed in a competitive market.

iii. **Develop a National Mentorship Network**: Developing a national mentorship network that connects experienced entrepreneurs with new start-ups is essential for fostering knowledge transfer and support. This network should include regular workshops, one-on-one mentorship sessions, and peer-to-peer learning opportunities. By leveraging the expertise of seasoned entrepreneurs, new start-ups can gain valuable insights, guidance, and support. A robust mentorship network would contribute to the overall success and sustainability of the start-up ecosystem.

5. Adoption of Emerging Technologies like IoT, AI, and Blockchain by Start-ups

i. **Improve Internet Infrastructure**: Investing in improved internet infrastructure, especially in rural areas, is crucial for supporting tech-based start-ups. Public-private partnerships can accelerate this development, ensuring that all regions have access to reliable, high-speed internet. Enhanced internet infrastructure would enable start-ups to leverage emerging technologies and compete effectively in the digital economy. This investment would also bridge the digital divide, promoting inclusive growth and development.

ii. **Provide Access to Advanced Technologies**: Providing grants and subsidies for start-ups to access advanced technologies is essential for fostering innovation. Establishing tech hubs and innovation labs equipped with IoT, AI, cybersecurity, and blockchain facilities would create an environment conducive to technological advancements. By offering these resources, start-ups can experiment with and develop cutting-edge solutions, driving technological progress and economic growth. Access to advanced technologies would also enhance the global competitiveness of start-ups.

iii. **Promote Digital Transformation**: Promoting digital literacy and the benefits of digital transformation across all sectors is vital for creating a forward-looking economy. Government policies should encourage the adoption of emerging technologies within the start-up ecosystem. By fostering a culture of digital transformation, businesses can improve efficiency, productivity, and innovation. Digital literacy initiatives would also ensure that the workforce is equipped with the skills needed to thrive in a technology-driven world.

6. Market Access and Internationalization

i. **Support Global Market Entry**: Facilitating participation in international trade fairs and exhibitions with government support is essential for helping start-ups access global markets. These platforms provide opportunities for start-ups to showcase their products and services, network with potential partners, and gain international exposure. By supporting global market entry, the government can help start-ups expand their reach and compete on a global scale. This initiative would also promote the country's innovation capabilities and attract foreign investment.

ii. **Simplify Export Procedures**: Simplifying export procedures and reducing tariffs for tech products would make it easier for start-ups to penetrate foreign markets. Offering incentives for start-ups that successfully export their products would further encourage international expansion. By removing bureaucratic barriers and providing financial support, the government can enhance the global competitiveness of start-ups. Simplified export procedures would also streamline operations and reduce costs for start-ups.

iii. **Enhance Global Exposure**: Expanding programs like BridgeStart that support start-ups in accessing international incubators and accelerators is crucial for enhancing global exposure. Fostering partnerships with global tech hubs would facilitate knowledge exchange and collaboration. By providing opportunities for start-ups to engage with international markets and ecosystems, these programs would accelerate growth and innovation. Enhancing global exposure would also attract foreign talent and investment, enriching the local start-up ecosystem.

7. Enhancing Incentives and Stakeholder Engagement

i. **Increase Financial Incentives**: Increasing financial incentives, such as tax breaks, grants, and subsidies tailored to different sectors and stages of start-ups, is essential for fostering growth. Promoting these incentives widely would ensure that start-ups are aware of and can benefit from them. Financial incentives would reduce the financial burden on start-ups, allowing them to reinvest in their businesses and scale effectively. By providing targeted support, the government can address specific needs and challenges faced by start-ups. Moreover, by providing targeted support, the government can also ensure gender inclusivity.

ii. **Develop Sector-Specific Support Programs**: Developing sector-specific support programs to address unique challenges and opportunities in different

industries is vital for a well-rounded start-up ecosystem. Involving industry experts in the design and implementation of these programs would ensure their relevance and effectiveness. Sector-specific support programs would provide tailored resources, mentorship, and funding, enabling start-ups to navigate industry-specific challenges. This approach would foster innovation and growth across various sectors.

iii. **Simplify Tax Regulations**: Simplifying tax regulations for start-ups is crucial for reducing administrative burdens and promoting compliance. Making tax regulations easier to understand and comply with would encourage more start-ups to formalize their operations. Consideration should also be given to implementing a lower tax rate for start-ups in their initial years to support growth and reinvestment. Simplified tax regulations would create a more business-friendly environment, fostering entrepreneurship and economic development.

8. Monitoring and Evaluation of Start-up Support Programs

i. **Standardized Metrics for Evaluation**: Developing a standardized framework for monitoring and evaluating start-up support programs is essential for assessing their impact. Using metrics such as job creation, revenue growth, and innovation outputs would provide a comprehensive understanding of the effectiveness of these programs. Standardized metrics would also facilitate comparisons across different programs, helping to identify best practices and areas for improvement. This approach would ensure that resources are allocated effectively and programs deliver the desired outcomes.

ii. **Implement Consistent Data Collection**: Implementing uniform data collection methods across all support programs is crucial for ensuring the consistency and reliability of data. Digital tools should be utilized to facilitate real-time data collection and analysis, providing accurate and timely information. Consistent data collection would enable better tracking of program performance and impact. By leveraging data-driven insights, policymakers can make informed decisions and continuously improve support programs.

iii. **Establish Feedback Mechanism**: Establishing regular feedback loops with start-ups is crucial for the continuous improvement of support programs. By creating platforms where start-ups can share their experiences and provide constructive feedback, policymakers and support organizations can gain valuable insights into the effectiveness of their initiatives. Additionally, incorporating feedback into the decision-making process allows for the dynamic adjustment of programs to better meet the evolving needs of the start-up ecosystem.

LOG MATRIX

#	Action	KPI	Executing Authority	Timeline	Period
		1. Legal/ Regulatory Framework			
1	Form a government committee to draft a comprehensive startup policy, consolidating and optimizing all regulations under one framework.	Number of policy drafts completed and reviewed within the time assigned. Number of stakeholder consultations held during the policy drafting process.	Ministry of Information Technology and Telecommunication	Short term	2 months
2	Establish a dedicated authority for startup regulation and support, streamlining the registration and compliance processes.	Time taken to register a new startup reduced by 50% within one years. Bring 50% of the Universities incubators under one network within one year.	Cabinet Division	Medium term	1 year
		2. Start-up Incubation and Acceleration			
3	Increase government and private sector funding for incubators and accelerators to enhance their resources and capabilities.	Percentage increase in funding for incubators and accelerators annually. Number of startups successfully incubated or accelerated each year.	Ministry of Finance	Long term	2 years
4	Develop a national mentorship program that connects experienced entrepreneurs and industry experts with startups, providing them with tailored guidance.	Number of mentors enrolled in the program. Number of startups receiving mentorship and their growth metrics (revenue, funding, etc.).	Ministry of Information Technology and Telecommunication	Medium term	6 months
		3. Access to Finance			
5	Introduce investment	Number of new investments made	Ministry of Finance	Medium term	1 year

	incentives such as tax breaks and matching funds for VCs and angel investors who invest in local startups.	by VCs and angel investors in local startups. Amount of capital raised by startups through these incentives.			
6	Establish a stability fund to mitigate risks associated with political and economic instability, encouraging investment in startups.	Amount of funds allocated to the stability fund. Number of startups receiving investment support from the stability fund.	Ministry of Finance	Medium term	6 months

#	Action	KPI	Executing Authority	Timeline	Period
	4. Skills Development and Capacity Building of Startup Founders/ Entrepre				
7	Revise educational curricula to include practical training in emerging technologies and entrepreneurship.	Number of educational institutions implementing the revised curriculum. Number of students completing courses in emerging technologies and entrepreneurship.	Ministry of Federal Education & Professional Trainings with collaboration with Provincial Education Department	Long term	1 year
8	Launch partnerships between universities and the tech industry to provide internships and hands-on training programs for students.	Number of partnerships established between universities and tech companies. Number of students participating in internships and training programs.	Ministry of Federal Education & Professional Trainings with collaboration with Provincial Education Department	Medium term	6 months

5. Technology Adoption and Innovation by Startups					
9	Offer grants and subsidies to startups for the adoption and integration of advanced technologies like AI, IoT, and blockchain.	Number of grants and subsidies awarded to startups. Percentage increase in the adoption of advanced technologies among startups.	NIC, Islamabad	Long term	1 year
10	Organize tech literacy campaigns to raise awareness and understanding of digital technologies among potential users and customers.	Number of tech literacy events and campaigns conducted. Number of participants attending tech literacy events.	Ministry of Information Technology and Telecommunication and NIC, Islamabad	Medium term	6 months
6. Market Access and Internationalization of Startups					
11	Implement quality improvement programs and certifications to help startups meet international standards.	Number of startups obtaining quality certifications. Number of products meeting international standards.	Ministry of Info. Technology and Tele. and NIC, Islamabad	Medium term	6 months
12	Establish export promotion initiatives and trade fairs to help startups showcase their products in domestic & international markets.	Number of startups participating in trade fairs and export initiatives. Increase in export sales for participating startups.	Ministry of Commerce and Trade and Ministry of IT & T	Medium term	1 year

#	Action	KPI	Executing Authority	Timeline	Period
7. Incentives to Startups					
13	Extend the tax exemption period from three to five years for SECP registered startups.	Number of startups benefiting from extended tax exemptions. Average tax savings per startup due to extended exemption.	Ministry of Finance and Federal Board of Revenue	Long term	1 year
14	Reduce the tax rate on startup profits post-exemption period to a more competitive level, such as 15-20%, to encourage growth and reinvestment.	Number of startups benefiting from reduced tax rates. Increase in net profits and reinvestment rates among startups.	Ministry of Finance and Federal Board of Revenue	Long term	1 year

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