

EFFECTIVENESS OF BUSINESS INCUBATION CENTRES IN PROMOTING ENTREPRENEURSHIP IN KERALA

*Thesis submitted to the
University of Calicut for the award of
the degree of*
Doctor of Philosophy in Commerce

Submitted By
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CERTIFICATE

This is to certify that the thesis entitled “**Effectiveness of Business Incubation Centres in Promoting Entrepreneurship in Kerala**” prepared by **Shajithra. O. P** for the award of the Degree of Doctor of Philosophy in Commerce of the *University of Calicut* is a record of bonafide research work carried out under my supervision and guidance. No part of the thesis has been submitted for any degree, diploma, fellowship or other similar title or recognition before. She is permitted to submit the thesis.

Chungathara
26th March 2025

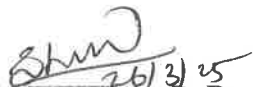


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DECLARATION

I hereby declare that the thesis entitled “**Effectiveness of Business Incubation Centres in Promoting Entrepreneurship in Kerala**” done under the guidance and supervision of **Dr. Rajeev Thomas**, is a record of bonafide research work done by me and that no part of the thesis has been presented for the award of any degree, diploma, fellowship, or other similar title or recognition before.

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26th March 2025


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ABSTRACT

Entrepreneurship has a key role in promoting innovation, social change, and economic expansion. The mission of business incubators is to help new companies get off the ground by connecting them with experienced businesspeople, funding, and other resources. Kerala is renowned for its high literacy rates, competent workforce, and developing start-up ecosystem. This study evaluates the impact of Business Incubation Centres in supporting entrepreneurship in the state.

The research's primary objectives are to determine how BICs affect entrepreneurs' ability to start and grow their businesses, how incubatees feel about the services they receive, and what obstacles they encounter when trying to make use of these resources. The purpose of this research is to learn how BICs in Kerala contribute to the entrepreneurial ecosystem as a whole by looking at how they deal with issues including lack of capital, difficulty getting into markets, and lack of mentorship.

This paper examines the impact of incubation services on innovation, job creation, and business growth through a systematic approach. It also assesses the programs and policies of the Keralan government that have an effect on BIC operations. Policymakers, incubator managers, and entrepreneurs can all benefit from the findings, which suggest ways to make BICs more effective in their entrepreneurship-fostering efforts.

While BICs in Kerala have made great strides in fostering an entrepreneurial ecosystem, the research shows that getting advanced funding, specialised mentoring, and access to markets are still tough. According to the research, the majority of startups are tech-driven and funded by individual savings and grants. Personalised incubation programs are essential for non-technical businesses because of the unique challenges they have owing to factors like limited resources and educational backgrounds. In addition, the study reveals that different incubatees' perspectives on services are affected by aspects including gender,

business type, patents, experience, and education. While non-technical firms look for marketing and mentorship services, technological startups prioritise R&D help.

In spite of BICs' generally beneficial effects, the research highlights the necessity for improved sector-specific resources, especially for rural and non-technical companies. To maximise the efficiency of incubation, it is essential to use advanced funding mechanisms, enhance market access techniques, and establish personalised mentorship programs. Findings also highlight the significance of incubation services being strategically aligned with the unique difficulties encountered by various business structures, including but not limited to sole proprietorships, partnerships, and corporations.

Ultimately, the research highlights how crucial it is for the BICs in Kerala to embrace a fresh and active strategy for incubation. To greatly improve the entrepreneurial ecosystem, services should be tailored to meet the specific challenges experienced by varied entrepreneurs, coordination among stakeholders should be strengthened, and high-impact services should be expanded. The state of Kerala will be able to set an example for sustainable entrepreneurial development thanks to these upgrades, and other regions will be able to use them as a blueprint.

Business Innovation Centres (BICs) in Kerala can help bring new ideas to market, which could lead to job creation, economic diversification, and long-term company growth. The importance of enhancing incubation programs to make the most of their potential in fostering a strong entrepreneurial ecosystem is highlighted by this study.

Keywords: Entrepreneurship, Business Incubation Centres, Start-ups, Kerala, Entrepreneurial Ecosystem, Innovation, Economic Development.

സംഗ്രഹം

പുതുമ, സാമൂഹിക മാറ്റം, സാമ്പത്തിക വിപുലീകരണം എന്നിവ പ്രോത്സാഹിപ്പിക്കുന്നതിൽ സംരംഭകത്വത്തിന് പ്രധാന പങ്കുണ്ട്. പരിചയസമ്പന്നരായ ബിസിനസുകാർ, ധനസഹായം, മറ്റ് വിഭവങ്ങൾ എന്നിവയുമായി ബന്ധിപ്പിച്ച് പുതിയ കമ്പനികളെ സഹായിക്കുക എന്നതാണ് ബിസിനസ് ഇൻകുബേറ്ററുകളുടെ ദൗത്യം. ഉയർന്ന സാക്ഷരതാ നിരക്ക്, യോഗ്യതയുള്ള തൊഴിൽ ശക്തി, സ്റ്റാർട്ടപ്പ് ആവാസവ്യവസ്ഥ വികസിപ്പിക്കൽ എന്നിവയ്ക്ക് കേരളം പ്രശസ്തമാണ്. സംസ്ഥാനത്തെ സംരംഭകത്വത്തെ പിന്തുണയ്ക്കുന്നതിൽ ബിസിനസ് ഇൻകുബേഷൻ സെന്ററുകളുടെ സ്വാധീനം ഈ പഠനം വിലയിരുത്തുന്നു.

ബിസിനസുകൾ ആരംഭിക്കുന്നതിനും വളർത്തുന്നതിനുമുള്ള സംരംഭകരുടെ കഴിവിനെ ബിഹൈസികൾ എങ്ങനെ ബാധിക്കുന്നു, അവർക്ക് ലഭിക്കുന്ന സേവനങ്ങളെക്കുറിച്ച് ഇൻകുബേറ്ററുകൾക്ക് എങ്ങനെ തോന്നുന്നു, ഈ വിഭവങ്ങൾ ഉപയോഗിക്കാൻ ശ്രമിക്കുമ്പോൾ അവർ നേരിടുന്ന തടസ്സങ്ങൾ എന്നിവ നിർണ്ണയിക്കുക എന്നതാണ് ഗവേഷണത്തിന്റെ പ്രാഥമിക ലക്ഷ്യങ്ങൾ. മൂലധനത്തിന്റെ അഭാവം, വിപണികളിൽ പ്രവേശിക്കാൻ ബുദ്ധിമുട്ട്, മാർഗനിർദ്ദേശത്തിന്റെ അഭാവം എന്നിവയുൾപ്പെടെയുള്ള പ്രശ്നങ്ങൾ എങ്ങനെ കൈകാര്യം ചെയ്യുന്നുവെന്ന് നോക്കിക്കൊണ്ട് കേരളത്തിലെ ബി. ഐ. സികൾ മൊത്തത്തിൽ സംരംഭകത്വ ആവാസവ്യവസ്ഥയ്ക്ക് എങ്ങനെ സംഭാവന നൽകുന്നുവെന്ന് പഠിക്കുക എന്നതാണ് ഈ ഗവേഷണത്തിന്റെ ലക്ഷ്യം.

പുതുമ, തൊഴിലവസരങ്ങൾ സൃഷ്ടിക്കൽ, ബിസിനസ്സ് വളർച്ച എന്നിവയിൽ ഇൻകുബേഷൻ സേവനങ്ങളുടെ സ്വാധീനം ചിട്ടയായ സമീപനത്തിലൂടെ ഈ പ്രബന്ധം പരിശോധിക്കുന്നു. ബി. ഐ. സിയുടെ പ്രവർത്തനങ്ങളിൽ സ്വാധീനം ചെലുത്തുന്ന കേരള സർക്കാരിന്റെ പരിപാടികളും നയങ്ങളും ഇത് വിലയിരുത്തുന്നു. നയനിർമ്മാതാക്കൾ, ഇൻകുബേറ്റർ മാനേജർമാർ, സംരംഭകർ എന്നിവർക്കെല്ലാം കണ്ടെത്തലുകളിൽ നിന്ന് പ്രയോജനം നേടാനാകും, ഇത് അവരുടെ സംരംഭകത്വ വളർത്തൽ ശ്രമങ്ങളിൽ ബിഹൈസികളെ കൂടുതൽ ഫലപ്രദമാക്കുന്നതിനുള്ള വഴികൾ നിർദ്ദേശിക്കുന്നു

ബിബിസിക്ളുടെ പൊതുവെ പ്രയോജനകരമായ ഫലങ്ങൾ ഉണ്ടായിരുന്നിട്ടും, മെച്ചപ്പെട്ട മേഖല-നിർദ്ദിഷ്ട വിഭവങ്ങളുടെ ആവശ്യകത, പ്രത്യേകിച്ച് ഗ്രാമീണ, സാങ്കേതിക ഇതര കമ്പനികൾക്ക്, ഗവേഷണം എടുത്തുകാണിക്കുന്നു. ഇൻകുബേഷന്റെ കാര്യക്ഷമത വർദ്ധിപ്പിക്കുന്നതിന്, നൂതന ഫണ്ടിംഗ് സംവിധാനങ്ങൾ ഉപയോഗിക്കേണ്ടത് അത്യാവശ്യമാണ്, മാർക്കറ്റ് ആക്സസ് ടെക്നിക്കുകൾ മെച്ചപ്പെടുത്തുക, വ്യക്തിഗത മെന്റർഷിപ്പ് പ്രോഗ്രാമുകൾ സ്ഥാപിക്കുക. ഏക ഉടമസ്ഥാവകാശം, പങ്കാളിത്തം, കോർപ്പറേഷനുകൾ എന്നിവ ഉൾപ്പെടെ എന്നാൽ അതിൽ മാത്രം പരിമിതപ്പെടുത്താതെ വിവിധ ബിസിനസ്സ് ഘടനകൾ അഭിമുഖീകരിക്കുന്ന സവിശേഷമായ ബുദ്ധിമുട്ടുകളുമായി ഇൻകുബേഷൻ സേവനങ്ങൾ തന്ത്രപരമായി യോജിക്കുന്നതിന്റെ പ്രാധാന്യവും കണ്ടെത്തലുകൾ എടുത്തുകാണിക്കുന്നു.

ആത്യന്തികമായി, കേരളത്തിലെ ബി. ഐ. സികൾക്ക് ഇൻകുബേഷനായി പുതിയതും സജീവവുമായ ഒരു തന്ത്രം സ്വീകരിക്കേണ്ടത് എത്രത്തോളം നിർണായകമാണെന്ന് ഗവേഷണം എടുത്തുകാണിക്കുന്നു. സംരംഭകത്വ ആവാസവ്യവസ്ഥയെ വളരെയധികം മെച്ചപ്പെടുത്തുന്നതിന്, വിവിധ സംരംഭകർ അനുഭവിക്കുന്ന പ്രത്യേക വെല്ലുവിളികളെ നേരിടാൻ സേവനങ്ങൾ ക്രമീകരിക്കുകയും ബന്ധപ്പെട്ടവർ തമ്മിലുള്ള ഏകോപനം ശക്തിപ്പെടുത്തുകയും ഉയർന്ന സ്വാധീനം ചെലുത്തുന്ന സേവനങ്ങൾ വിപുലീകരിക്കുകയും വേണം. ഈ നവീകരണങ്ങളിലൂടെ സുസ്ഥിര സംരംഭകത്വ വികസനത്തിന് ഒരു മാതൃക കാണിക്കാൻ കേരള സംസ്ഥാനത്തിന് കഴിയും, മറ്റ് പ്രദേശങ്ങൾക്ക് അവയെ ഒരു ബ്ലൂപ്രിന്റായി ഉപയോഗിക്കാൻ കഴിയും.

തൊഴിലവസരങ്ങൾ സൃഷ്ടിക്കുന്നതിനും സാമ്പത്തിക വൈവിധ്യവൽക്കരണത്തിനും ദീർഘകാല കമ്പനി വളർച്ചയ്ക്കും കാരണമാകുന്ന പുതിയ ആശയങ്ങൾ വിപണിയിലെത്തിക്കാൻ കേരളത്തിലെ ബിസിനസ് ഇന്നൊവേഷൻ സെന്ററുകൾക്ക് (ബിബിസി) കഴിയും. ശക്തമായ ഒരു സംരംഭക ആവാസവ്യവസ്ഥയെ പരിപോഷിപ്പിക്കുന്നതിന് ഇൻകുബേഷൻ പ്രോഗ്രാമുകൾ അവരുടെ കഴിവുകൾ പരമാവധി പ്രയോജനപ്പെടുത്തുന്നതിന്റെ പ്രാധാന്യം ഈ പഠനം എടുത്തുകാണിക്കുന്നു.

സൂചകപദങ്ങൾ: സംരംഭകത്വം, ബിസിനസ് ഇൻകുബേഷൻ സെന്ററുകൾ, സ്റ്റാർട്ടപ്പുകൾ, കേരളം, സംരംഭക പരിസ്ഥിതി, നവീകരണം, സാമ്പത്തിക വികസനം.

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LIST OF ABBREVIATIONS

BICs	-	Business Incubation Centres
EDP	-	Entrepreneurship Development Programme
IoT	-	IndiN Institute of Technology
KAU		Kerala Agricultural University
KSSEDM	-	Kerala State Self Entrepreneur Development Mission
KSUM	-	Kerala Startup Mission
KTIZ	-	Kerala Technology Innovation Zone
MIT	-	Massachusetts Institute of Technology
NBIA	-	National Business Incubators Association
R&D	-	Research and Development
SME	-	Small and Medium Industry
TBI	=	Technology Business Onubators

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Entrepreneurship is critical for promoting economic growth, innovation, and social transformation. It is the process of recognising, developing, and realising a vision, whether it is an original idea, a business opportunity, or a solution to a current problem. Entrepreneurs drive economic advancement by creating jobs, introducing new products and services, and increasing market competition. Entrepreneurs are essential to the expansion of modern economies because of their willingness to take chances, pool resources, and adapt to constantly changing market conditions.

Governments and other institutions have increased their support for entrepreneurship in recent years, realising its potential to address important problems like unemployment and regional imbalances.

Kerala, with its high literacy rates and strong cultural ethos, presents unique potential and challenges for developing business ecosystems. Understanding the characteristics that promote and impede entrepreneurship in such settings is critical for developing effective policies and support structures.

Entrepreneurship is a fundamental generator of economic growth and innovation, hence economic development and entrepreneurship are closely interconnected. Through employment creation, increased production, and introduction of new goods and services raising quality of life, entrepreneurs help to foster economic development. By means of their activities, they mobilise resources, drive investment, and promote competition, so augmenting efficiency and market dynamism. Furthermore, entrepreneurship helps to lower economic inequalities by attending to local needs and making use of unrealised resources, therefore promoting regional development. It also is very important in helping nations move from conventional to modern systems by encouraging invention and technical

developments. An essential component of sustainable economic development since entrepreneurship blossoms generates a virtuous circle of wealth creation, better infrastructure, and increased human capital.

Driven by technology developments, shifting consumer tastes, and global issues, new spheres of entrepreneurship are fast developing. To address environmental problems, fields including green entrepreneurship centre on sustainable business practices, renewable energy, and environmentally friendly goods. Social entrepreneurship creates businesses meant to improve education, healthcare, and community development, so addressing society issues. The emergence of the digital economy has created possibilities in e-commerce, fintech, artificial intelligence, blockchain, which let businesses create creative, tech-driven ideas. Furthermore, the gig economy and creative sectors have given people chances to apply their abilities in original ways. These fresh spheres of entrepreneurship underscore the need of flexibility and creativity in generating value in contemporary economies and reflect the changing requirements of society.

An entrepreneurial spirit is essential to a creative and innovative economy because it encourages risk-taking, experimentation, and problem-solving. A common motivator for entrepreneurs is the desire to fill a need in the market or overcome an urgent problem; this, in turn, motivates them to create something new. Entrepreneurs create new possibilities in technology, procedures, and business models by taking chances and questioning established norms.

Because of its adaptability and speed, entrepreneurship fosters invention through quick prototyping, testing, and adaption. Companies, especially startups and smaller ones, tend to be more nimble and willing to try out new, potentially game-changing tactics and technology than larger, more established companies. In addition to boosting competitiveness, this innovation mind-set propels industries ahead by establishing new benchmarks and expectations.

In addition, by teaming up with academics, businesses, and government agencies, entrepreneurs build ecosystems that foster innovation. Their businesses frequently serve as breeding grounds for new ideas and talent, leading to innovation

centres that improve people's lives and the economy in the long run. Entrepreneurs drive development and alter industries by taking on the challenge of turning new concepts into viable solutions.

In the ever-changing context of the modern global economy, entrepreneurship is a shining example of creativity, adaptability, and financial advancement. The role of entrepreneurship has become more important than ever as we move through a period marked by rapid technology developments, evolving market dynamics, and unexpected challenges. Often referred to as the catalyst for economic expansion, entrepreneurship transforms industries, promotes the creation of jobs, and propels societal advancement.

Entrepreneurs are the architects of change, propelled by a passion for invention and a desire to have an important impact on society. They have the guts to venture into unknown waters and the foresight to see possibilities where others perceive barriers. Entrepreneurship has the ability to transform our communities and rethink how we approach business and progress, from promoting diversity and addressing social challenges to encouraging creativity and accelerating technology advancements. Come along on an exploration of the complexities of entrepreneurship and the reasons it is so important in today's world.

Innovation is a major force behind economic expansion and social advancement, but it needs strong economic and governmental support to thrive. Economic systems give innovators the capital, market infrastructure, and trained labour they need to create and promote their ideas. However, the growth of new or high-risk inventions may not always be guaranteed by market forces alone. Government assistance becomes essential in this situation because it may close gaps by implementing laws, providing funds, and offering incentives that encourage innovation and taking risks. To help overcome obstacles like high beginning costs and uncertain returns, governments might fund R&D, create innovation hubs, and offer grants or tax advantages to firms. Furthermore, political frameworks and rules can safeguard intellectual property, guaranteeing that innovators benefit from their

labour. Together, the government and economy build a strong ecosystem that fosters innovation, propels long-term prosperity, and tackles urgent societal issues.

Kerala, a southern Indian state, is well-known for its beautiful scenery, colorful history, and innovative business culture. Kerala's entrepreneurial culture is defined by a well-balanced mix of tradition and innovation, propelled by a workforce that is highly educated and talented. Kerala's achievements in education also prove significant in promoting an entrepreneurial spirit. Because of the state's emphasis on education, we have a trained workforce and a high rate of literacy. This, together with a vibrant diaspora network, has given rise to successful entrepreneurs who make use their exposure to the world to introduce novel concepts and methods back home.

The flourishing small and medium enterprise (SME) sector in Kerala is a significant reflection of the state's entrepreneurial culture. A large number of micro-entrepreneurs in the state are active in many different fields, including agriculture, tourism, IT, and more conventional manufacturing. This dispersed method of entrepreneurship has enabled people to start and expand their businesses, leading to more equitable economic growth.

Furthermore, Kerala's cooperative movement has played a significant role in promoting entrepreneurship at the grassroots level. The state has seen a community-driven approach to business, creating a sense of ownership and participation among its people, from cooperative farming ventures to credit cooperatives.

The emphasis on environmentally and socially responsible business practices is an integral part of Kerala's entrepreneurial culture. A determination to strike a balance between economic development and environmental and social issues is shown in the growing popularity of initiatives supporting fair trade, organic farming, and eco-friendly methods.

Tradition, education, community involvement, and a dedication to sustainable methods are the threads that bind Kerala's business culture together.

Kerala's entrepreneurs will surely be pivotal in molding the state's economic environment while maintaining its own cultural identity as it continues to develop.

For a long time, people have recognised that entrepreneurship is one of the main drivers of economic growth and progress. In recent years, the state of Kerala—which is well-known for its advanced society and high literacy rates—has been striving to create conditions that encourage innovation and entrepreneurship. Though the state has great potential, it finds difficult to turn entrepreneurial aspirations into profitable businesses. Here is where BICs, or business incubators, play an essential role.

Business Incubation Centres are organised initiatives that facilitate the expansion and prosperity of emerging enterprises by offering them resources such as capital, mentoring, networking opportunities, and physical space, among other forms of support. They function as a crucial link between the initial phases of a business concept and its development into a self-sustaining, viable enterprise. These centres are intended to reduce the high risk associated with start-ups by providing a supportive environment in which entrepreneurs can test their ideas, refine business models, and establish connections with investors and mentors.

In Kerala, both the government and private sector have become more aware of the significance of Business Incubation Centres (BICs) in promoting an entrepreneurial culture. A number of incubation centres have been set up throughout the state with the goal of providing assistance to pioneering start-ups, namely in fields like as information technology, biotechnology, and agriculture. These centres not only offer crucial resources but also foster a community of entrepreneurs who can cooperate, exchange expertise, and benefit from each other's experiences.

Notwithstanding these endeavours, the success of Business Incubation Centres (BICs) in promoting entrepreneurship in Kerala necessitates further investigation. Although there have been instances of success, it is necessary to comprehend the wider influence of these centres on the entrepreneurial environment of the state. The success of Business Incubation Centres (BICs) in fostering start-ups

depends significantly on factors such as the calibre of mentorship, availability of finance, and the influence of government regulations.

The purpose of this research is to evaluate the influence of Business Incubation Centres on the development of entrepreneurship in Kerala. The study will evaluate the overall impact of these centres on the entrepreneurial environment of the state, analyse the obstacles they face, and investigate the ways in which they contribute to the expansion of start-up companies. This study aims to learn how Kerala's Business Incubation Centres (BICs) may operate more effectively, which will boost the state's ability for innovation and economic growth.

Need to promote Entrepreneurship in Kerala

The economic development of Kerala is significantly influenced by entrepreneurship, which promotes innovation, generates employment opportunities, and stimulates overall economic growth. Kerala's challenges include unemployment, migration of qualified workers, and an excessive dependence on traditional sectors such as tourism and remittances, despite its considerable human resource base and high literacy rate. By encouraging self-employment, attracting investments, and diversifying the economy, entrepreneurship can assist in addressing these challenges.

In order to establish a viable entrepreneurial ecosystem in the state, it is imperative to have government initiatives, private sector support, and business incubation centres. Long-term economic sustainability can be achieved by fostering businesses in emerging sectors such as technology, agribusiness, and sustainable industries. Kerala can leverage its skilled manpower and resources to establish itself as a centre for business development and entrepreneurship by cultivating a culture of risk-taking and innovation.

Improving the economy isn't the sole reason to encourage entrepreneurship in Kerala. The goal is to help the state reach its full potential so that its residents can build a better future for themselves. The highly educated workforce and robust economy of Kerala are well-known worldwide. It offers an ideal environment for

new firms to launch, which in turn can boost the economy, generate employment opportunities, and address societal issues. Creating an entrepreneurial culture in Kerala may help the state become less reliant on external funding and more resilient in the long run.

Moreover, entrepreneurship is crucial for leveraging the intellectual resources of the state and promoting innovation. Kerala's highly educated population, together with its dynamic startup ecosystem, offers a chance to make use of the latest innovations and create customized solutions that cater to local as well as global requirements. This not only fosters economic expansion but also establishes Kerala as a centre for innovation and creativity.

Furthermore, fostering business in Kerala can have a crucial impact on addressing the pressing issue of unemployment, particularly among the younger generation. Kerala can foster inclusive growth and social development by enabling individuals to start their own businesses. This would also help to keep talent inside the state, decrease brain drain, and create job possibilities. Kerala's economy has been significantly impacted by migration, which has brought both possibilities and difficulties. The state's economy and household earnings are supported by the substantial remittance inflows that have resulted from the widespread emigration of skilled and semi-skilled people, especially to Gulf nations. However, this dependence on remittances has created economic vulnerabilities because this source of income can be destabilised by changes in the global oil markets or shifting immigration laws in the countries of destination.

Kerala has a shortage of skilled workers because many people are leaving the state for better opportunities. This has created a lack of professionals in important areas like healthcare and education. In addition, the large number of working-age men leaving has worsened demographic gaps, putting extra strain on social support systems and increasing the number of people who depend on them.

The arrival of migrant workers from other Indian states has helped ease worker shortages in low-paying jobs like building and agriculture, but it has also created challenges. This includes issues with fitting into society and putting extra

pressure on public resources like housing and healthcare. The economic situation is made more difficult by concerns about competition for jobs and lower wages for local workers. Migration has helped Kerala's economy grow, but it also brings challenges. To address these issues, we need to create smart policies that balance the benefits of migration with the need for lasting social and economic development.

Entrepreneurship acts as a stimulant for rural development and empowerment in Kerala. Through the promotion of entrepreneurship in rural areas, the state may revitalize local economies, foster sustainable practices, and enhance living conditions. Undertakings such as skill enhancement initiatives, provision of financial resources, and improvement of infrastructure can establish a conducive atmosphere for rural entrepreneurs to flourish.

Essentially, the promotion of entrepreneurship in Kerala is not only a necessary economic action, but also a method to unlock the state's unexplored capabilities, encourage creativity, provide employment, and establish resilient communities. Kerala can set itself on the path to long-term growth, wealth, and development that benefits everyone by putting money into programmes that stimulate entrepreneurship.

Kerala needs to encourage people to become businesses for a number of reasons:

Diversifying the Economy: Encouraging entrepreneurship can foster economic diversification by promoting the emergence of novel industries and sectors, diminishing reliance on external influences, and boosting economic resilience.

Creation of Jobs: Kerala faces challenges in creating jobs, especially for young people. Entrepreneurship can offer new job opportunities, especially in areas like technology, healthcare, and services. Kerala can successfully tackle unemployment problems and create opportunities for self-employment and sustainable lives by promoting entrepreneurship.

Innovation and Competitiveness: Entrepreneurship encourages new ideas by inspiring people to develop unique goods, services, and ways of doing business.

This new attitude could help Kerala become more competitive both in India and around the world. It can attract investment, support economic growth, and make the state a hub for innovation and tech-based businesses.

Rural Development: Encouraging the establishment of businesses in rural parts of Kerala can enhance rural development by empowering local communities, revitalizing local economies, and diminishing migration to metropolitan centres. Entrepreneurial endeavors in agriculture, agribusiness, and rural tourism have the potential to generate money and enhance the overall standard of living in rural regions.

Social influence: By tackling important societal issues like poverty, inequality, and environmental sustainability, entrepreneurship can have a big social influence. Social entrepreneurship endeavors in Kerala might prioritize addressing community needs, advocating inclusiveness, and cultivating sustainable development techniques.

In short, encouraging entrepreneurship in Kerala is advantageous for tackling social and environmental issues, generating employment opportunities, stimulating economic growth, and nurturing innovation. Kerala can unleash its complete potential and construct a more promising future for its inhabitants by endorsing ambitious entrepreneurs, facilitating resource accessibility, and establishing an ideal environment for business growth.

Business Incubation

Business incubation is an approach that enables start-up and developing companies to expand more rapidly by offering them a diverse array of specialised tools and services. The primary objective of a business incubator is to assist entrepreneurs in achieving sufficient success to enable them to exit the program with financial stability and the ability to sustain themselves. Business incubation is an appealing form of innovation for entrepreneurs seeking to initiate a business from zero.

An organization offers business incubation services. This establishment is commonly referred to as a business incubator.

Beginning with management training and office space, a business incubator supports new companies and individual entrepreneurs to grow their enterprises by offering a full scale variety of services. Venture capital investment finishes the process.

According to the National Business Incubation Association (NBIA), "business incubators serve as a catalyst for regional or national economic development. The incubator offers entrepreneurs access to shared office facilities, as well as managerial assistance and guidance" (NBIA, n.d.).

In both rich and developing nations, business incubators are becoming more and more popular as a means of encouraging entrepreneurship. They have become an essential component of the business support structure, providing crucial help to newly established firms. Business incubators are meant to help recently launched entrepreneurial companies by providing a range of targeted business support services and resources, such management direction, technical advice, consulting, suitable rental space, shared basic business services and equipment, networking support, marketing help, and financing required for company expansion.

According to The National Business Incubators Association (NBIA) "Business incubation catalyzes the process of starting and growing companies, providing entrepreneurs with the expertise, networks and tools they need to make their ventures successful. Incubation programs diversify economies, commercialize technologies, create jobs, and build wealth".

Incubation programmes contribute to the diversification of economies, facilitate the commercialization of inventions, generate employment opportunities, and foster the accumulation of wealth.

Business Incubation Centres promote entrepreneurship for several reasons:

Supportive Ecosystem: Incubators establish a supportive ecosystem for entrepreneurship. By providing tools, training, networking, and money, they help entrepreneurs thrive and overcome hurdles.

Resource Accessibility: Incubators give entrepreneurs easy access to office space, equipment, technology, and administrative help. This reduces start-up costs, allowing them to focus on product development.

Mentorship and Guidance: Business Incubation Centres offer mentorship programs where experienced entrepreneurs, industry insiders, and experts advise firm founders. This mentorship can help entrepreneurs start and grow a business, avoid common mistakes, and make smart decisions.

Networking Opportunities: Incubators help entrepreneurs, investors, mentors, and industry stakeholders network. Networking events, workshops, seminars, and pitches help startups find clients, partners, and investors. They expand their network and find new revenue streams.

Access to investment: Many Business Incubation Centres have angel investor, venture capitalist, and other investment connections. They help startups create business strategies, pitch decks, and investor presentations to get funding for growth.

Training and Capacity Building: Incubators offer workshops, training, and instructional materials to help entrepreneurs learn marketing, finance, product development, and strategic planning. These programs helped company founders develop entrepreneurial skills and increase their chances of success.

Validation and input: Incubation Centres allow entrepreneurs to validate their ideas, evaluate their products, and get feedback from mentors, peers, and potential customers. Startups can enhance their goods, uncover new markets, and adjust their strategy through validation.

Legal and administrative support: Incubators assist with company formation, intellectual property protection, compliance, and regulatory compliance. This helps

entrepreneurs concentrate on expanding their companies free from administrative duties, therefore simplifying the starting process.

Business Incubation Centres are crucial for promoting entrepreneurship by providing enterprises with resources, mentorship, networking opportunities, investment, training, validation, and administrative support. Incubators are essential in promoting and enhancing the growth, innovation, and success of emerging businesses within the entrepreneurial ecosystem.

1.2 Significance of the Study

The government of Kerala has recently prioritised entrepreneurship education and training. Reason being, the state offers policies that are favourable to enterprises and a flourishing environment for start-ups. The initiative's backbone is the state's network of business incubators, or BICs, which are essential for encouraging and supporting entrepreneurial endeavours across the state.

Aspiring entrepreneurs might find the perfect environment to develop and implement their unique ideas at business incubators. An atmosphere that is conducive to growth, creativity, and teamwork is provided by the organisation. They provide aspiring business owners with the foundational tools, knowledge, and support systems necessary to face the obstacles of starting and growing a company.

The primary goal of Kerala's Business Incubation Centres (BICs) is to provide comprehensive support to start-ups throughout their development. From brainstorming and idea validation to breaking into the market and thriving, these institutions provide individualised programs and services to help entrepreneurs overcome the unique challenges they face. In most cases, this support includes things like a place to work, advice from seasoned professionals, opportunities to network, help getting funding, and educational programs that teach essential business skills.

Another important way that BICs help bridge the gap between universities and businesses is by encouraging collaboration and the sharing of knowledge across universities, research centres, and new businesses. Aiming to help students realise

their full potential and find real-world applications for what they learn in the classroom, these centres encourage creativity and entrepreneurship.

Moreover, BICs help numerous businesses and sectors, including renewable energy, technology, healthcare, and agriculture, which contribute significantly to Kerala's economic growth. These hubs encourage the birth of new, exciting businesses, which in turn generates employment opportunities, advances technological advancement, and draws in financial backers. Consequently, they foster economic growth and prosperity in the area.

In conclusion, there is no way to overstate the importance of Business Incubation Centres in promoting an entrepreneurial spirit in Kerala. By providing crucial support, resources, and opportunities to aspiring entrepreneurs, these centres empower individuals to pursue their entrepreneurial aspirations, enhance their creative capacities, and contribute to the socioeconomic development of the state.

The role of Business Incubation Centres (BICs) in creating and sustaining an entrepreneurial ecosystem is going to rise in importance as entrepreneurship is seen as a crucial instrument for growth and innovation in Kerala. In order to better understand how Kerala's Business Incubation Centres promote entrepreneurship through the services they provide, this study will focus on those centres. The Business Incubation Centres in Kerala are the main subject of this study. Many benefits accrue to all parties concerned, according to the study's results, which mainly investigate the effectiveness of Business Incubation Centres (BICs) in fostering entrepreneurship in Kerala. These results outline the many benefits of BICs as a platform for entrepreneurship, including the availability of resources, mentorship, and networking opportunities.

Successful business owners can improve their current strategy and accelerate their company growth by learning about fresh chances for expansion and success. Academic institutions can enhance their entrepreneurial support programs to better align with industrial needs, and policymakers can use these discoveries to strengthen the support network for entrepreneurs through evidence-based regulations. To

promote the long-term growth of the entrepreneurial ecosystem, investors and Venture capitalists can use their knowledge to identify promising businesses.

In the end, the study's goal of increasing community knowledge may lead to greater community involvement and support, which may improve the entrepreneurial climate in Kerala.

1.3 Statement of the Problem

Business Incubation Centres have gained significant importance due to their capacity to foster a supportive atmosphere that mitigates the problems encountered by entrepreneurs. They provide extensive and consistent support, leading to a notable reduction in the failure rate of new enterprises. Prior research in India and globally has illustrated the benefits of a well-structured incubation program; however, a comprehensive examination of the role of business incubation facilities in fostering entrepreneurship within the context of Kerala has not been undertaken by scholars. Consequently, a comprehensive examination of the effectiveness of company incubation in Kerala is required. This study seeks to examine the influence of business incubation facilities on supporting entrepreneurship. Therefore, conducting a study on the "EFFECTIVENESS OF BUSINESS INCUBATION CENTRES IN PROMOTING ENTREPRENEURSHIP IN KERALA" is very significant in this regard.

1.4 Research Questions

This research project seeks to investigate the following primary research questions.

1. What are the principal objectives and functions of Business Incubation Centres in Kerala?
2. What is the function of Business Incubation Centres in stimulating the development of entrepreneurial ecosystems in Kerala?
3. What challenges do entrepreneurs in Kerala encounter, and how can Business Incubation Centres mitigate these obstacles?

4. What specific types of support and resources do Business Incubation Centres provide to entrepreneurs in Kerala?
5. What is the influence of Business Incubation Centres on the growth and success of emerging enterprises in Kerala?
6. What are the particular skills and experiences of entrepreneurs who gain the most benefits from Business Incubation Centre initiatives in Kerala?
7. What are the perspectives and experiences of entrepreneurs who have utilised the services of Business Incubation Centres in Kerala?
8. In what manner do Government policies and initiatives influence the operations and effectiveness of Business Incubation Centres in Kerala?
9. What possibilities exist for augmenting or expanding Business Incubation Centre initiatives to better support entrepreneurship in Kerala?

1.5 Scope of the Study

A Business Incubation Centre (BIC) is a unique initiative or establishment that is designed to support the growth and development of small enterprises and early-stage businesses. These centres provide entrepreneurs with a variety of services, tools, and support to help them convert their concepts into profitable and successful businesses.

The economic growth of regions that prioritise entrepreneurship, such as Kerala, is significantly influenced by the importance of Business Incubation Centres (BICs). Kerala's initiatives to promote economic growth, innovation, and entrepreneurship are contingent upon the establishment of Business Incubation Centres. Business Incubation Centres (BICs) are essential in the promotion of employment creation, economic growth, and the overall prosperity of the region by providing support to small and emerging enterprises. The purpose of this study is to evaluate the efficiency and influence of Business Incubation Centres (BICs) in the promotion of entrepreneurship in Kerala.

The objective of this study is to examine the various aspects of Business Incubation Centres (BICs) and their influence on the development of enterprises. It tries to offer valuable insights into the function of these centres in the entrepreneurial ecosystem of Kerala. The present study attempts to improve the understanding of how incubation centres can effectively promote startup growth and innovation by investigating the significance of Business Incubation Centres (BICs) in fostering entrepreneurship in Kerala. It is anticipated that the findings of this study will provide valuable insights for policymakers, BIC administrators, entrepreneurs, and other stakeholders who are engaged in the promotion of economic development and entrepreneurship in Kerala. The current study exclusively investigates the influence of the services offered by Business Incubation Centres in Kerala on initially established companies. The services provided by Kerala's Business Incubation Centres (BICs) to foster entrepreneurship are the primary focus of this investigation.

1.6 Objectives of the study

The main goal of this research is to investigate thoroughly how Business Incubation Centres affect the growth of entrepreneurship in Kerala. In order to accomplish this objective, the following objectives are developed:

1. To identify the growth and developments of business incubation centres for entrepreneurial development.
2. To study the attitude of incubatees towards various services provided by business incubation centres.
3. To analyse the satisfaction level of incubatees towards the services provided by incubation centres.
4. To analyse the effect of various services provided by the business incubation centre to promote entrepreneurship in Kerala.

5. To evaluate the challenges faced by the incubatee in getting services from the business incubation centres.
6. To make recommendations for making business incubation centres in Kerala more effective in fulfilling their role of promoting entrepreneurship.

1.7 Hypotheses of the Study

In accordance with the stated objectives, the following hypotheses were formulated and evaluated using appropriate statistical tools.

Major hypotheses of the study

- H0. There is no significant relationship between Enabling Environment services provided by incubation centres and Promotion of Entrepreneurship
- H0. There is no significant relationship between Mentoring services provided by incubation centres and Promotion of Entrepreneurship
- H0. There is no significant relationship between Physical Infrastructure services provided by incubation centres and Promotion of Entrepreneurship
- H0. There is no significant relationship between financial services and assistance provided by incubation centres and Promotion of Entrepreneurship
- H0. There is no significant relationship between Marketing and Networking Services provided by incubation centres and Promotion of Entrepreneurship
- H0. There is no significant relationship between Human Resource Services provided by incubation centres and Promotion of Entrepreneurship
- H0. There is no significant relationship between Research and Development assistance provided by incubation centres and Promotion of Entrepreneurship
- H0. There is no significant relationship between Entrepreneur Support Services provided by incubation centres and Promotion of Entrepreneurship

1.8 Research Methodology

1.8.1 Method of Research

The present study of the effect of business incubation centres in promoting entrepreneurship in Kerala was carried out in a descriptive and analytical way.. This investigation is characterised by its descriptive nature, as it seeks to gather factual information and concentrates on particular elements of the issue at hand. The study may also be characterised as analytical due to the application of statistical methods for the analysis of quantitative data.

1.8.2 Sample Design

For the study, a two-stage sampling strategy has been used. The initial phase was the selection of Business Incubation Centres followed by the selection of Incubatees from the selected Business Incubation Centres in Kerala. Information regarding the sample design for the research is displayed below.

Stage 1.Selection of Sample Business Incubation Centres

The primary data required for the study has been collected from the incubatees of those business incubation centres registered under Kerala Start up Mission. Kerala Startup Mission (KSUM) is the state government's initiative aimed at fostering the startup ecosystem in Kerala, India. It was established with the vision of making Kerala a leading destination for innovation, entrepreneurship, and technology driven businesses. The data have been collected from the incubatees of 63 Business Incubation Centres. This list is as per the Startup Ecosystem Report 2022 and based on the information of the website of KSUM

Table 1.1
Business Incubation Centres in Kerala

District	Registered
Thiruvananthapuram	15
Kollam	2
Pathanamthitta	2
Alappuzha	3
Kottayam	5
Ernakulam	15
Idukki	2
Thrissur	3
Palakkad	3
Kannur	2
Kasargod	2
Kozhikode	5
Malappuram	2
Wayanad	2
TOTAL	63

(Source: Kerala Startup Ecosystem Report 2022, <https://startupmission.kerala.gov.in/>)

Thus all the 63 BICs were selected for the study.

Stage: 2. Selection of Sample Incubatees

The adopted sampling strategy for the study is briefly discussed here:

(i) Population

Population for this study is 63 Business Incubation Centres registered with Kerala Start up Mission and 2237 incubatees of these BICs. Kerala Startup Ecosystem Report 2022 and the website of KSUM was used as a reference source for identifying the incubation centres.

(ii) Sampling Technique

The primary data collection is done from 63 Business Incubation Centres of Kerala. A Proportionate Stratified Random Sampling Technique is used for the purpose of data collection from sample customers.

(iii) Determination of Sample

All the 63 BICs in Kerala is taken for the purpose of this study. The selection of the sample respondents was carried out using a Proportionate Stratified Random Sampling Technique. The entire state of Kerala is initially segmented into the North, Central, and South regions. Kasargod, Kannur, Waynad, Kozhikode, and Malappuram are the five districts that make up the North Zone. Palakkad, Thrissur, Ernakulam, and Idukki are all part of the Central Zone, whereas Thiruvananthapuram, Kollam, Alappuzha, Pathanamthitta, and Kottiyam are all belong of the South Zone.

From each of the strata, appropriate sample size is taken for the study in the proportion of number of BICs in each zone ie. 27:23:13

Selection of Sample size

Sample size was determined with the help of the following sample size formula (Krejcie & Morgan, 1970).

$$S = \frac{X^2 NP (1-P)}{d^2 (N-1) + X^2 P(1-P)}$$

Where	S	=	Sample size required
	X ²	=	Table value of chi-square for 1 degree of freedom at desired confidence level (2.576);
	N	=	Population size = 2237
	P	=	Proportion of population (assumed as 0.50)
	d	=	Degree of accuracy expressed as a proportion (assumed as 0.05).

$$S = \frac{2.576 \times 63 \times 0.50 (1-0.50)}{0.05^2 (63-1) + 2.576 \times 0.50 (1-0.50)}$$

Therefore S = 498

Sample is taken as 498 as per Krejcie & Morgan table

The details of sample selection is given below:

Table 1.2
Sample of Incubatees

Zones	District	Registered	Incubatees	Samples
South	Thiruvananthapuram	15	527	108
	Kollam	2	45	26
	Pathanamthitta	2	31	16
	Alappuzha	3	30	22
	Kottayam	5	264	41
	Total	27	897	213
Central	Ernakulam	15	1036	106
	Idukki	2	23	15
	Thrissur	3	48	35
	Palakkad	3	40	26
	Total	23	1147	182
North	Kannur	2	30	21
	Kasargod	2	16	11
	Kozhikode	5	100	51
	Malappuram	2	35	11
	Wayanad	2	12	9
	Total	13	193	103
	Total	63	2237	498

(Source: Kerala Startup Ecosystem Report 2022, <https://startupmission.kerala.gov.in/>)

1.8.3 Sources of Data

For the study, both primary and secondary data were obtained.

A. Collection of Secondary Data

The required secondary data for the study were collected from a number of studies undertaken both in India and outside the country. The information was gathered from many sources such as articles, journals, magazines, thesis reports, websites, newspapers, and published materials.

B. Collection of Primary Data

The current research is primarily focused on primary data. A structured questionnaire was used to conduct the sample survey and gather the primary data.

1.8.4 Tools/ Instruments for Primary Data Collection

For a comprehensive analysis of the role that business incubators play in promoting entrepreneurship in Kerala, a structured questionnaire is essential. Researchers can gather standardised data from a large number of subjects by using questionnaires. By using this systematic approach, it is ensured that each participant receives the same questions, which makes it easier to compare and evaluate the responses that are obtained.

A comprehensive questionnaire was employed to gather the required information from the incubatees. There are many different kinds of questions in the questionnaire, such as scale questions, multiple-choice questions, dichotomous questions, and simple open-ended questions. The operational assistance, incubatee satisfaction with service quality, challenges encountered by Business Incubation Centres (BICs) and incubatees, awareness levels, the impact of motivational factors, and obstacles in utilising Business Incubator (BIC) services were evaluated using a five-point Likert scale. The surveys were carefully developed and pre-tested to ensure the absence of duplicate, irrelevant, or unanswerable questions.

1.8.5 Pilot Study

To ensure the study was feasible and the questions were relevant, a pilot study was carried out with 50 participants. This shall ensure that the construct included in the questionnaire shall capture the necessary data needed for research (Malhotra, 2005). Minor changes were done to some of the questionnaire's questions

depending on pilot study suggestions. Data collecting took place using this customised questionnaire.

1.8.6 Reliability and Validity Tests

For the scale evaluation, reliability and validity testing have been performed.

A. Reliability Test

Reliability is the capacity of the measuring instrument to produce consistent and precise results. It measures the relative absence of errors in a measuring instrument, as less the error, the more stable and more accurate the data (DeVon *et al.*, 2007). Internal consistency is one of the methods used to evaluate the reliability of a scale by evaluating the commonality of a set of items that measure a specific construct. In this case, the scholar evaluated the scale's internal consistency using Cronbach's alpha. The scale is considered reliable if the Cronbach's alpha value exceeds 0.7.

Table 1.3

Internal Consistency Analysis of the Eleven Constructs by Cronbach's Alpha for Sample Size 50 Based on Pilot Study - Assessment of Construct Reliability

Construct	Cronbach's alpha (α)
Environment Services	0.754
Mentoring Services	0.865
Infrastructure facilities	0.843
Financial Services	0.750
Marketing Services	0.866
Human Resource Services	0.700
Research and Development assistance	0.822
Entrepreneur Support Services	0.810
Promotion of Entrepreneurship	0.962
Satisfaction	0.722
Problems	0.978

It is observed from the table 1.3 that the Cronbach's alpha for all the constructs is higher than 0.7, which shows an internal consistency among the items in the scale. So, all the constructs are reliable and fit for further analysis.

B. Validity Test

Validity testing involves evaluating the instrument's capacity to measure the intended outcome. The research instrument must include a comprehensive list of items and constructs, which can be initially generated from the existing literature review. The variables used to evaluate the services provided by the business incubation centre, including environment services, mentoring services, infrastructure facilities, financial services, marketing services, human resource services, research and development assistance, and entrepreneur support services, were gathered from a comprehensive literature review.

After generating the required variables, the next step is to ensure that the statements included in the research instrument are easily understandable and commands the required content validity (Yaghmale, 2003). A detailed validation method was used for this purpose. The instrument was initially sent to two research academics, and their feedback regarding the questionnaire was collected. Subsequently, three professors, distinguished experts in statistics, management, and commerce, were solicited to evaluate the instrument, and their recommendations were documented. The ideas were thoroughly evaluated, resulting in the addition, removal, and appropriate modification of the factors in the questionnaire. Consequently, the content validity of the questionnaire was affirmed based on the recommendations and insights of subject experts.

1.8.7. Normality Tests

Normality of data (distributional assumption) Kolmogorov-Smirnov test was conducted to test whether the data are normally distributed or not (Sarstedt & Mooi, 2014).

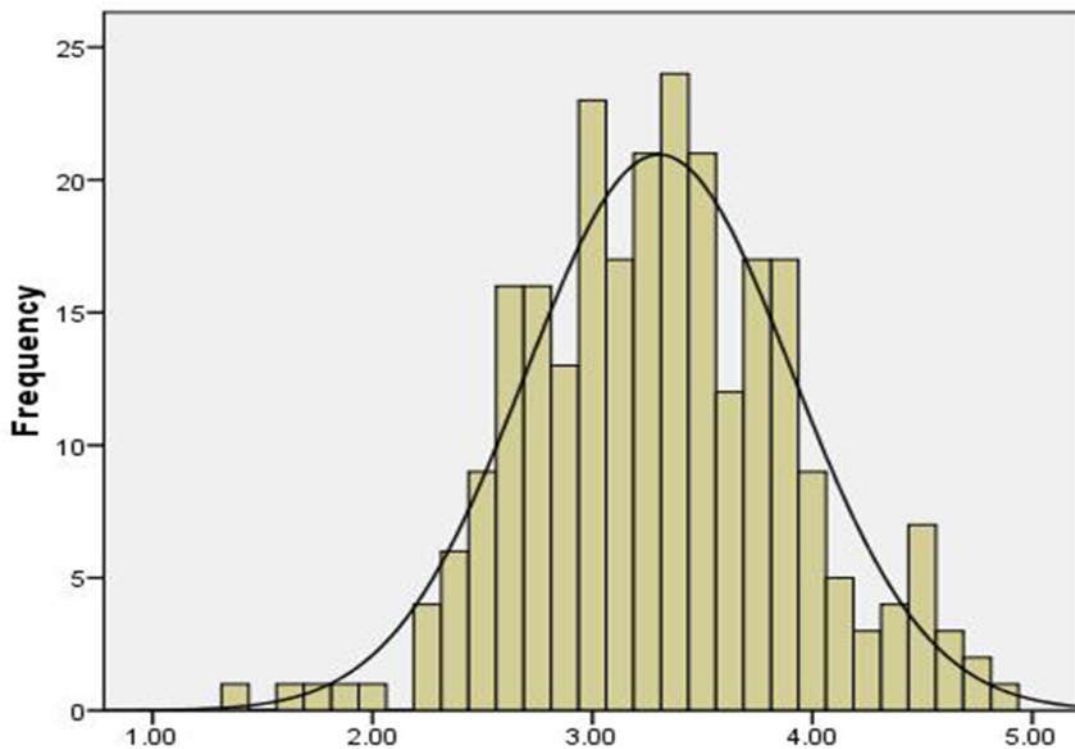
Fig1.1 Normality plot

Figure 1.1 shows the distribution of data and a histogram comparing observed data to the normal distribution. The data come under the normal distribution curve and hence, the data set is confirmed to be possessing normality (Epps & Pulley, 1983).

For probing the normal probability plot, normality of data can be evaluated using statistical tests through Kolmogorov-Smirnov test (Razali *et al.*, 2011).

Table1.4
One-Sample Kolmogorov-Smirnov Test

One-Sample Kolmogorov-Smirnov Test										
		Environment Services	Mentoring Services	Infrastructure facilities	Financial Services	Marketing Services	Human Resource Services	Research and Development assistance	Entrepreneur Support Services	Promotion of Entrepreneurship
N		498	498	498	498	498	498	498	498	498
Normal Parameters	Mean	4.37	4.02	4.32	4.25	3.93	4.34	4.26	4.41	4.20
	Std. Deviation	.458	.726	.424	.424	.676	.431	.550	.494	.817
Most Extreme Differences	Absolute	.224	.205	.183	.177	.156	.170	.209	.173	.261
	Positive	.145	.108	.147	.158	.117	.117	.147	.117	.164
	Negative	-.224	-.205	-.183	-.177	-.156	-.170	-.209	-.173	-.261
Test Statistic		.224	.205	.183	.177	.156	.170	.209	.173	.261
Asymp. Sig. (2-tailed)		0.15	0.21	0.16	0.12	0.28	0.33	0.21	0.14	0.19

Table 1.4 shows that the significant value exceeds 0.05. It signifies that the data for each construct have normal distribution features.

1.8.8 Period of Data Collection

Data for this study was collected over a six-month period from December 2023 to May 2024. During this period, various data collection methods, including questionnaires, interviews, and document analysis, were utilised to gather information from participants involved in business incubation and entrepreneurship in Kerala. Over a six-month period, a comprehensive analysis was performed on the function of business incubation centres in the region, yielding important insights into the challenges and opportunities faced by entrepreneurs and incubator managers.

1.8.9 Tools Used for Analysis of Data

Statistical tools and software packages used for data analysis

1. The socio-demographic factors of incubatees are identified using a simple percentage. The agreeability of the respondents regarding the service effectiveness of incubator centres is assessed using the mean and standard deviation.
2. The satisfaction level of incubatees with the services provided by incubation centres in Kerala was analysed and tabulated, including environment services, mentoring services, infrastructure facilities, financial services, marketing services, human resource services, research and development assistance, and entrepreneur support services.
3. The independent 't' test and ANOVA are employed to determine the disparity in opinions regarding the demographic profile, service effectiveness of incubation centres, and satisfaction levels of incubatees.
4. The concept of correlation is used to investigate the connection between the various services offered by the business incubation centre and the encouragement of entrepreneurial endeavours in the state of Kerala.
5. Multiple Regression Analysis is used to evaluate the impact of the numerous services that are offered by the business incubation centre in order to encourage entrepreneurial activity in Kerala

IBM SPSS 21 and MS Excel software packages were used for data analysis.

1.8.10 Variables Used for the Study

The following independent and dependent variables have been used for analysis and interpretation of the primary data collected from both BICs and Incubatees.

Dependent Variable: Promotion and success of entrepreneurship is the dependent variable.

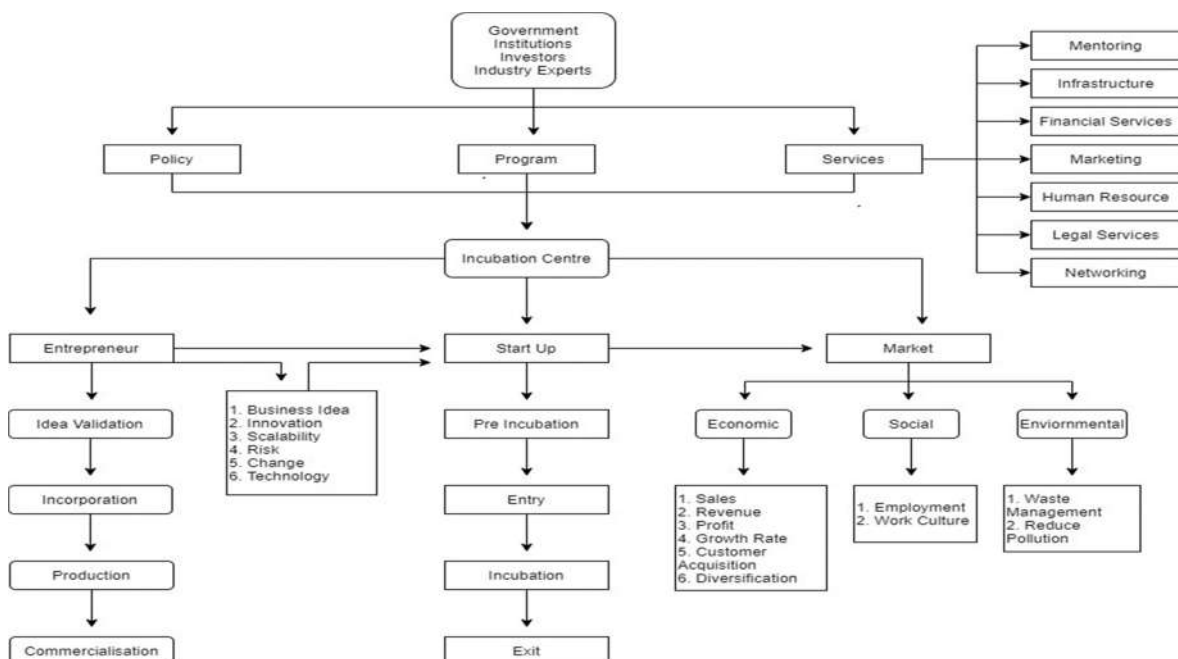
Independent variables: Business Incubation Support, Incubator Characteristics, Entrepreneurial Characteristics, Government Policies and Support, Industry Factors, Socioeconomic Factors etc.,

1.9 Conceptual Framework of the Study

The conceptual framework developed for analyzing the Role of Business Incubation Centres in promoting Entrepreneurship in Kerala is given below:

Fig.1.2

Conceptual Framework of the Study



This conceptual model explains the function of business incubation centres in promoting entrepreneurship. It emphasises the participation of governmental entities, investors, and industry specialists in formulating policies, programs, and services that support incubation centres. The model outlines two primary pathways: the entrepreneur's progress from idea validation to commercialisation) and the startup's incubation process from pre-incubation to market entry and exit.

The incubation centre offers vital services including mentorship, infrastructure, financial aid, marketing, human resources, legal support, and networking. The methodology highlights market impact by classifying results into economic (sales, profit, growth), social (employment, work culture), and environmental (waste management, pollution reduction) advantages.

1.10 Operational Definitions

Following are some short explanations of the key terms and ideas used in the study.

Entrepreneurial Ecosystem: The entrepreneurial ecosystem is made up of the people, groups, institutions, and tools that work together to support business growth in a certain area or community.

Business Incubation Center (BIC): A Business Incubation Centre (BIC) is a physical establishment or initiative intended to facilitate the successful growth of entrepreneurial ventures by providing a variety of business support services and resources, including but not limited to physical workspace, financial backing, mentoring, shared services, and networking opportunities.

Entrepreneurship: Entrepreneurship refers to the systematic undertaking of creating, initiating, and managing an innovative business venture, often a startup, with the primary objective of generating financial gains while addressing the needs of society.

Startup Ecosystem: The term "startup ecosystem" refers to the interrelated system of resources, actors, and support systems that help startups establish, expand, and succeed in a particular area or sector of the economy.

1.11 Limitations of the study

The following are the limitations of the current investigation.

1. The study's conclusions may only be useful for the specific situation in Kerala and may not be instantly applicable to other places or countries.
2. The study may be limited by a sample size that is insufficient or a sample that does not accurately represent the entire population of entrepreneurs or business incubation centres in Kerala.
3. The study does not address the minor and routine interactions between the incubator and the incubatees, which contribute value to the entrepreneurial process.
4. Limited access to relevant information, financial resources, and technological tools may have restricted the depth and scope of the investigation. The availability of data from incubators, startups, and stakeholders was sometimes inadequate due to confidentiality concerns and restricted documentation.
5. The study will specifically examine certain aspects of business incubation centres in Kerala, which may limit a full understanding of the subject.
6. External influences, such as shifts in government policy, economic situations, or technology improvements, can influence the results of the study.

1.12 Chapter Scheme of the Report

The study report is presented in six chapters, as stated below.

➤ **Chapter 1. Introduction**

As an introduction, the first chapter talks about the study's background and aims. It includes a statement of the research problem, research questions, the study's scope, objectives, hypotheses, methodology and database, the variables used, reliability and validity testing, conceptual model, the tools used for analysis, limitations, and its chapter structure.

➤ **Chapter 2. Review of Literature**

Chapter two presents the literature review on the available previous studies on the related area of research and includes 174 reviews. The literature review have presented in eight heads;

1. Rationale of Innovative entrepreneurship - 19
2. Challenges of Technology Entrepreneurship- 5
3. Role of Entrepreneurship in mitigating unemployment issues - 10
4. Evolution of Business Incubation Centres- 47
5. Rationale of BIS in promoting entrepreneurship - 26
6. Determinants of Business Incubation's performance - 10
7. Evaluation of performance of BIS – 47
8. Recent developments in the startup eco system of Kerala and Govt, policies - 10

➤ **Chapter 3. Theoretical Framework of Business Incubation Centres**

This chapter deals with a Theoretical Framework of the study. It includes history of Business Incubation, Business Incubation across the Globe - Few Models, Business Incubation in India

Technology Incubation and Development of Entrepreneurs (TIDE), Entrepreneur and Entrepreneurship, Entrepreneurship as a solution to the problem of unemployment, Incubation centres – Characteristics – benefits – downsides, the role

of Business Incubation Centres (Business Incubators) in promoting entrepreneurship through small business development, development of SMEs through Incubators , Biotech Parks and Incubators' under the Scheme of Department of Bio Technology, Models of STEPs and TBIs , Indian STEP and Business Incubator Association Industrial Background of Kerala in Brief, and Business Incubation Centers in Kerala

➤ **Chapter 4. Analysis and Interpretation**

This chapter covers the analysis of the services provided by Business Incubation Centres with various statistical tools in relation with the hypothesis.

➤ **Chapter 5. Summary of Findings and Conclusion**

Chapter 5 contains the summary of the findings on the basis of objectives of the study and conclusions.

➤ **Chapter 6. Recommendations and Scope for Further Research.**

This chapter contains recommendations and suggests a few topics for further research in the field. It also includes the implications of the study.

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CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter examines the prevailing collection of literature regarding business incubation and its influence on entrepreneurship, with a particular emphasis on the Kerala ecosystem. It commences with an examination of the fundamental concepts of business incubation, which encompass its evolution, models, and most effective practices on a global scale. The review subsequently analyses empirical studies that investigate the effectiveness of incubation centres in encouraging businesses, with a focus on critical components such as financial support, skill development, and policy interventions.

The primary objective of this chapter is to find out if business incubation can give new businesses the network tools and innovation spaces they need to succeed. To explore the outcomes of various previous studies, the current study followed few questions like what are the roles of business incubation centers in promoting entrepreneurship. How business incubation centers promote innovation. How such innovation significant to the growth development of enterprises. The review also focused on how business incubators are performing, what are the factors determine their survival. To get a deep insight and understanding on the review theme, researcher reviewed different journals, reports and theses on the context of national and international, special reports of various agencies like OECD, EU, World bank etc. To get the idea of how economic changes influence the said factors, the studies from developed and developing nations were also included. To depict more recent trend on BIs in the current study, the researcher focused the studies in the post 1990s, however not skipped any relevant studies pertaining to core theme.

This chapter attempts to identify gaps in the literature and establish a conceptual framework for the current study by synthesising existing research. The function of business incubation centres in Kerala will be framed and their

significance in the state's entrepreneurial ecosystem will be highlighted by the insights derived from previous studies.

The reviews have been presented under seven heads.

1. Rationale of Innovative Entrepreneurship
2. Challenges of Technology Entrepreneurship
3. Role of Entrepreneurship in Mitigating Unemployment Issues
4. Evolution of Business Incubation Centres
5. Rationale of Business Incubation in Promoting Entrepreneurship
6. Determinants Business Incubation's Performance
7. Evaluation of Performance of Business Incubation Centres
8. Recent developments in the start-up eco system of Kerala and Govt. policies

2.2 Rationale of Innovative Entrepreneurship

Numerous academic publications have emphasised the critical role that innovative entrepreneurship plays in social and economic development. Scholars argue that businesses driven by innovation play a major role in increasing productivity, creating jobs, and boosting market competitiveness (Schumpeter, 1934). Schumpeter's theory of creative destruction, which highlights how entrepreneurs can use innovation to reshape industries, is consistent with the theoretical underpinnings of innovative entrepreneurship. In order to promote long-term economic and social change, existing literature emphasises the necessity of laws and support networks that encourage innovation-led entrepreneurship.

Gnyawali et.al (1994) define entrepreneur is a person, find opportunities in environment, though environment motivate him to take advantage of this opportunity and enhance ability to start and operate business. The Govt. programs influences opportunities, propensity and ability of enterprise.

According to **Taramol, K.G (2015)** entrepreneurship is the ability of individual in starting and operating a venture which cater to the need and demand of the market. A study about women entrepreneur, the Kudumbashree programme run by Govt. of Kerala provide basic vocational training and micro credit to self-help group is benefiting many women entrepreneurs. The entrepreneur ventures limited to low skill businesses such as garment making, food processing etc. This help in overall social and personal development of women and the community. Aspiring women entrepreneurs in rural areas face many problems such as lack of family support, lack of information, training etc.

Nimitha et al., (2015) suggest entrepreneurship is a process of pursuing opportunities in the market with potential product/service without considering currently available resources. Fostering entrepreneurship among university graduates will improve overall economy of the region as more enterprises came into place. Students with exposure to entrepreneurial and management functions tend to have more interest compared to others. University graduates have more potential innovative ideas, lack of awareness about entrepreneurship limit them from commercialization of their idea. Conducting entrepreneurship awareness programs will benefit the students as they were able to acquire required knowledge. The business incubators associated with universities further help the students in starting up a business and commercialize their ideas.

Suma et.al., (2016) says that entrepreneurship is the process of creating and managing enterprise. According to a study conducted among entrepreneurs in agricultural sector, majority of entrepreneurs have a medium level of managerial efficiency and sustainability in business. There is a gender disparity in adopting innovation in entrepreneurial ventures because of lack of knowledge and reluctance to take risks. This in turn affect overall performance and led to disparity in wealth creation.

Priya et.al (2017) difines entrepreneurship as the process of creating something new with value assuming demand with risk or reward. The govt. is promoting women entrepreneurship through various schemes, and financial

assistance also motivates family members towards women entrepreneurship. Though women entrepreneurs are will to take risk in starting an enterprise they find gaps in training and leadership.

Deepa et.al (2016) suggest the necessity of entrepreneurial approach towards innovative ideas as a way of sustainable high-level performance. Investing in innovative ideas create scope for expansion of portfolio and higher economic and social benefits.

Bruce (2008) points out that failure to accept entrepreneurship as means of improving economy will drain many SMEs as they were unable to obtain required information and find difficulty in dealing with regulatory organisations. The relationship between entrepreneurs and organisation led to the collapse of potential business cluster. A professional approach in dealing with business cluser will benefit many entrepreneurs as they were able to acquire necessary skills and knowledge. Business cluster will able to provide a mechanism to commercialise innovations.

Noora et.al., (2016) describes entrepreneurship as the process of starting new enterprise in response to identified opportunities. Based on a study on rural entrepreneurship, people find difficulties in starting business in rural areas. Lack of infrastructure, difficulties in procuring skilled labour and raw materials are limiting factor in rural entrepreneurship.

Midhula et.al (2016) highlights the role of financial inclusion in entrepreneurship development. The Kudumbashree initiative by Govt. of Kerala provide an opportunity for poor women in entrepreneurship development and financial inclusion by self-help group. Though the program, women were able to access formal banking system though many of them unaware of various services provided by banks and even rate of interest. They even find difficulty in filling up bank related documents and using modern services provided such as ATM, internet banking etc.

Itzel Orozco et.al (2008) says sustainable development will help entrepreneurs to meet multiple objective simultaneously. Based on a study, majority

of entrepreneurs think that their business is sustainable even if they don't have a proper business plan. They describe sustainability as various frame works, indicators and activities such as CSR, dematerialisation, substitution, which indicate that there was no common understanding among entrepreneurs. Acquiring relevant knowledge is essential for SMEs to implement sustainable development strategies

Devi Mohan (2016) suggest the importance of Kudumbashree programme by Govt. of Kerala in promoting women entrepreneurship. Through the programme, vocational training for skill development, micro credit to start enterprise through financial institutions are provided. From a study on entrepreneurship development and kudumbashree programme, the training provided through the scheme is too generic. They failed to provide training and information on more specific functional areas of management such as finance, marketing, inventory etc. The trainers also lack the skills and expertise which further erode the quality of service and eventual closure of business.

A study on **Importance of Entrepreneurship in India and Kerala (2015)** suggest that promotion of entrepreneurship is key to economic development as it promote regional development, employment generation, resource mobilisation and equitable distribution of wealth. According to the research, MSMEs generate more employment opportunity than any large enterprise. Training and basic skill development are necessary for long term benefit.

Mushthaq (2017) in their study points out that SMEs in rural areas acquire capital through microfinance institutions as access to banking system is limited. Though the concept was originated towards the welfare of people, later the institutions confined to commercial activities, which have high interest rate than nationalised banks. As an alternative interest free participatory microfinance can be used. The participatory microfinance are focussed on social mission.

Prudence Constance January (2013) conducted a study in South Africa, and highlights the seed funding program ESFP initiated by the District Municipality to boost entrepreneurship development. The entrepreneurs in SMEs will get funds to procure equipment through grant. Through the program

entrepreneurs who wish to start a business and who already has business will get training and mentorship apart from seed capital.

According to **Sayeda et.al (2017)** Multinational firms are promoting innovation through incubation, focusing on entrepreneurship and converting innovative ideas into businesses. They set up business incubators, providing capital through direct investments or finding investors. The project team focuses on converting ideas into products, with commercialization only if profitable, and handed over to the business development department.

Sai Deepika (2017) proposes the idea of sustainable entrepreneurship which combine the concepts of innovation and sustainable development to entrepreneurship. Sustainable entrepreneurship is social entrepreneurship with an objective to create enterprise for the needs of social end ecological well-being.

Geetha et.al (2017) & Abdul (2015) noted that even though women entrepreneurs are keen to start business they face difficulties in procuring capital from banks as well as other financial institutions. Women entrepreneurs find difficulties in almost every stage of enterprise development such as material procurement, marketing, etc. The current socio-cultural condition also limit participation of women in entrepreneurship as they may need to travel for business purposes.

Anusankar (2017) points out the relation between women entrepreneurship and women empowerment. According to a study empowered women start enterprises for employment if they have received any vocational training.

Desmond (2012) suggest that flexible clustering of enterprises found more effective than rigid business incubation. Business incubator usually support in creation of SMEs in short run. There are strict rules for admission to incubator and available space is limited which limit number of entrepreneurial ventures. A sector focussed clustering and improved data collection and sharing will more beneficial to entrepreneurs.

2.3 Challenges of Technology Entrepreneurship

According to **Deepa Unnithan et.al (2015)** Technical graduates with potential business ideas often struggle to acquire financial resources, often starting with their own savings. University initiatives to promote student entrepreneurship are limited, and business incubators often focus on wealth generation without intellectual property protection. Lack of knowledge in business management affects enterprise operations.

Rustam (2002) observe that the establishment of technology incubator promote nurturing entrepreneurs by providing resources and services focused towards their requirement together with smart work space and shared office facilities. Incubators provide a platform for convergence of resources from various stakeholders for growth and survival of enterprises. The technology incubators find ways to solve hurdles in conceptualisation and commercialisation. The state, university, private sector, venture capitals have distinctive role in promoting technology enterprises.

Magesh et.al (2011) opines that professionals in the area of intellectual property protection, business plan generation, formation of enterprise, legal environment are necessary to support incubation process. The technology based innovation need a complex system of expertise from raw material procurement, prototyping, testing, and commercialising. They require a bigger network of professionals in various field as they move forward to commercialisation.

Mingfeng Tang et.al (2010) suggest that technology based incubators need to focus on a complex set of issues such as knowledge creation through learning, access to financial and human capital, coordinating activities of transfer of technology and commercialisation. Technology based incubators need extensive network for collaboration, communication and resource and knowledge transfer.

Rustum (2006) designed toolkit to create awareness and information about technology incubators. According to author technology based entrepreneurs face many challenges from conceptualising idea, creating prototype to commercialising.

Since technology based enterprises are knowledge intensive they need special attention regarding to additional knowledge related to management, intellectual property protection, skilled workforce, professional network etc. Investment in technology firms are higher compared to others.

2.4 Role of entrepreneurship in Mitigating unemployment Issues

One of the major concern every country around the globe is struggling to cope up with is unemployment and underemployment. Unemployment is an adverse economic condition and is a severe apprehension that looms the socio-economic solidity. Unemployed individuals are defined by the International Labour Organisation as those who are capable of assuming employment but are unable to secure one, despite their industrious job search.

International Labour Organisation (2020), In this report it states that Unemployment is the best-known form of labour underutilization. In 2019, the global working population amounted to 5.7 billion, with 2.3 billion individuals not participating in the labour force and 3.3 billion individuals employed. 188 million people were unemployed and is estimated to increase by around 2.5 million per year in line with the growth of the labour force. The world economy is currently not generating adequate employments to engage new labour market entrants According to Centre for Monitoring Indian Economy (CMIE), in February 2020, the unemployment rate in India increased to 7.8%. The rate in rural areas rose to 7.4%, while it decreased to 8.7% in urban areas, it fell to 8.7 %.

Jain 2019 quoted that Global Entrepreneurship Monitor (GEM) Report, India is one of the leading Asian country creating tremendous job opportunities with its entrepreneurial rise. The entrepreneurship rate in India has increased from 9% in 2015–2016 to 14.9%.

Shukla et al. 2018, opines that since entrepreneurship leads to job creation and innovation proliferation, it is widely accepted as an important driver of economic growth

Dilanchiev 2014 states that the correlation between unemployment and entrepreneurship was analysed by two factors. The pull effect (Schumpeter's effect) and the push effect (Refugee effect). Entrepreneurship is anticipated to generate employment opportunities and indirectly influence the establishment of employment in other existing organisations, as evidenced by the pull effect. The push effect posits that the likelihood of achieving a satisfactory level of income and the availability of gainful employment decreases as the rate of unemployment increases. This encourages individuals to initiate commercial operations.

Asad, et. al., (2014) finds higher unemployment rate is associated with low level of entrepreneurial activities in any economy.

Jain (2019) opines that the self-employed concept that make persons work and aboard people for mounting the business is called entrepreneurship. It catalyse the economic growth and good social set up. By creating a favourable and mutually benefitted environment for the business and employee, good entrepreneurship decreasing the factors that contribute to unemployment.

Manjunatha (2017) observed that establishment of new businesses stimulate the employment resources and reduces unemployment significantly. Entrepreneurship encourage persons to use their skills and drives to create wealth through the creation of goods and services. In order to decrease the level of unemployment significantly, the entrepreneurial activities needed to be encouraged Entrepreneurship plays a pivotal role to offer employment not only to the entrepreneur but also to others through their business organizations in the form of labours

Jeraj (2010) observed that entrepreneurship as one of the way to at least decrease the unemployment rate and the social problems that come from it.

Carree (2007) finds that high rate of unemployment may lead to entrepreneurial activities of individuals and high rate of self-employment may indicate increased entrepreneurial activities thus reducing the unemployment.

Bokhari (2016) observed that appropriate policies for developing entrepreneurial ecosystem may able to decrease the unemployment among younger generation. The public policies made to reduce unemployment should be focussing more on high growth and innovative entrepreneurship.

2.5 Evolution of Business Incubation Centers

By encouraging employment creation and profit producing, effective business incubators (BIs) significantly help local, regional, and national economies to grow. There are no concepts that only analyse the complexity of company incubation, as evidenced by its development and evolution. While tracing the concept of business incubation definition, it has been noted there is no unanimity among scholars in defining the concept.

However, from the views of scholars, the concept can be defined as “*A controlled environment that fosters the care, growth, and protection of a new venture at an early stage before it is ready for traditional means of self-sustaining operation*”. In the modern world, in the eve of where information technology and the Internet are normal parts of the business environment, the term “controlled environment” could be either physical (real estate and office facilities) or virtual (networks).”

Another popular definition is of **Hackett & Dilts (2004)**, they state that a “business incubator is a shared office space facility that seeks to provide its incubatees with a strategic, value-adding intervention system of monitoring and business assistance” (p. 57).

Literature overemphasised the concept of incubation centres in different ways; for instance, the study of **Branstad & Saetre, (2016)** stated that BIs is for entrepreneurial development; while, more recent studies such as **Corrocher et al., (2019)**; **Zeng et al., (2021)**; and **Mendes & Tahim, (2020)**; highlighted the role BICs in innovation. Some scholars viewed as the tool for firm survival and growth (**Mas-Verdú et al., 2015**; **Ssekiziyivu & Banyenzaki, 2021**); and according to **Audretsch & Belitski, (2019)** BIs is for commercialization of new knowledge by

starting a new business. The first business incubation model was developed by Campbell et al. (1985). The model consists of four fundamental value-adding activities or services whereby incubators help the incubatees to perform. The new business concept of the incubators claims that these activities begin with a need diagnostic. These incubatee companies are kept under observation once the diagnostics are over. During the incubation process, the incubatees receive access to capital investment and expert networks (**Kanza et. al,2023**). The Campbell model was further extended by **Smilor (1987)**, who incorporated external environmental factors, namely incubator affiliation and support systems. The next level of development in BICs was proposed by **Hackett & Dilts, (2004)** in early of 2000. They analysed available literature and studies on incubation process and the theories of BICs such as network theory, the resource-based view and real options theory.

Hackett & Dilts (2004) proposed the concept “black box” and which state that business influence both inside and outside aspects, thus holistic approach should be followed. According to Hackett and Dilts (2004), the process starts with selecting incubatees from a pool of prospective candidates. Selected applicants then pass into the "black box" and engage in value-adding activities including business assistance intensity, monitoring, and resource munificence. Startups walk out of the incubator either successful or failed. Other elements include incubator size, incubator development degree, population density, and current situation of the economy.

A brief idea about the evolution of business centers would be helpful to learn the history, give insight, to predict upcoming development, and finally to shape trend of the incubation centers which would be useful to build model mechanism. The development of business incubation centers have conjoined with the industrial development so far archived across the globe. Along with this, the development of economic and financial conditions also accelerated for a stagnated growth of incubation centers. For instance, the revaluation of venture capital (VC) in 1960s-70s triggered for the policies for entrepreneurs’ strategies, which was leads to emergence of the incubation and entrepreneurs supporting centers in the developing countries

The studies of **Bruneel, Ratinho, Clarysse, Groen, (2012) and Lalkaka (2000)** have portrayed ‘Stages of Business Incubation Development’. The studies offer a framework that helps one to grasp in-depth how business incubation developed, why and what were primary value propositions at various times.

According to **Bruneel et. al, (2012)** the first BICs were established in the USA in the 1950s and the concept became widespread in the 1980s and spread to the rest of the world in a variety of forms like business centres, innovation centres, business supporting centres etc. (EC, 2002). The study of **Barrow, (2001); and Lalkaka and Bishop, (1996)** were stated that the services of first BIs were provide affordable office space and shared resources. But on the flip side, the study of **Allen and McCluskey, (1990)** viewed that the basic function of BICs is to provide infrastructure services, which should be the core of their value proposition, consists of office. Furthermore, BIs often have small production facilities or mixed units available to tenants (OECD, 1997). Provision of space is critical to business incubation and has been identified by tenants as the most beneficial feature of BICs (**Chanand Lau, 2005**). However, the study of **McAdam &McAdam, (2008)** extended the concept in a wider sense, shared resources such as reception, clerical services, meeting rooms, conference rooms or car parking. The study of **Lewis (2001)** elucidated the role of BIs in the context of the Europe and USA, the concepts were popularised early of 1980s with accelerating unemployment in mainstream sectors such as automobiles and heavy engineering. It became extensively evident that new policies were required to revive economies and that creativity and technology were turning into the foundations of economic development. BICs started to be a popular instrument for encouraging the founding of fresh technology-oriented businesses.

The study of **Smilor & Gill (1986)** highlighted the concept of second generation BICs. They differentiated the first generation (knowledge-based services in their value proposition) from the second generation BICs (much more than just a physical arrangement for start-up companies). The BICs concept reached at the level of business experience and marketing skills. During second stage, the BICs were widely attracted as the supporting services to meet the shortcoming of lack of

business experiences and marketing problems. The new firms lack structuring, management skills and limited capacity to respond sudden environment changes. Thus, the entrepreneurs needed to learn business operation through a process of learning-by-doing, new firms change their behaviour and develop novel sets of routines. Thus, according to **Levitt & March, (1988)** BICs are highly supportive to learn routines include forms, rules, procedures, and strategies around which organizations are constructed and through which they operate. The absence of such routines in firm's early stages contributes to a higher failure propensity (**Freeman et al., 1983**).

This concept further supported by **Clarysse & Bruneel, (2007)**; **Kirwan et al.,(2006)**, they stated that entrepreneurs often failed to collect relevant experiences due to lack of perfect knowledge and training. According to **Colombo & Grilli, (2005)**; **Davidsson & Honig, (2003)** training sessions on relevant topics may contribute to increase entrepreneurs' knowledge bases and therefore positively impact on their development and performance. The core theme of the second stage development is growth of business support services (BSS). Business support services such as coaching and training are crucial elements of learning within BICs. Coaching is typically mentioned as an important service that BICs provide to their tenants (**Hansen et al., 2000**). Under coaching, the venture or entrepreneur learn entrepreneurship skills, it generally carried through a mentoring were one to one supporting initiatives either free or on charge based. The firms enjoyed the benefits or services of BICs may free from the trial and error and ascend more quickly the learning curve. Learning curve means the experiencing in doing business. (**Clarysse & Bruneel, 2007**). As a result, the BIs supported firm have some acquired advantaged in their business operation, they able to make better and faster decisions, resulting in better strategies and, eventually, higher firm performance. In addition, the training sessions on relevant topics may contribute to increase ventures' knowledge bases and therefore positively impact on their development and performance (**Kirwan et al., 2006**). The proper communication and mentor supporting services including coaching helps the entrepreneurs to capture the

behaviour of consumers and their preferences, thus they can formulate strategies for their entities (**Scillitoe & Chakrabarti, 2010**).

The impact of BSS and training services provided through BICs have positive outcomes with the tenant business. For instance, the studies of **Aerts et al., (2007)**; **Barrow, (2001)** have substantiated their positive association. It also has a positive influence on the tenant business performance (**Pena, 2004**).

The third generation of BICs emerged during the 1990s with an emphasis on access to services through external networks. According to **Hansen et al., (2000)**, access of network or exploration of network means access the potential customers, suppliers, technology partners and investors. The concept further justified by **Scillitoe & Chakrabarti, (2010)**. Individual network and institutional networks are different, the individual network developed by tenant or entrepreneurs, thus it has its own limitation such as lack of structurization and reliability. But in the flipside, institutional networks are well structured and well defined (**Hansen et al., 2000**). Access of network has critical role in the growth and development of a business (**McAdam & McAdam, 2008**). Through external services and its access, firm able to ease the acquisition of resources and specialized expertise, provides learning opportunities, and allows new firms to build up legitimacy faster (**Bruneel et. al, 2012**). Extending external services to the new firm help to resolve many operational issues such as resource scarcity, financial shortage, lack management skills, and growth constraints.

There is ample studies are available to substantiate the relevance of external services. For instance, firms can overcome their resource constraints through networking, and thereby accelerate firm growth (**Zhao & Aram, 1995**). New entrepreneurs, particularly venture capitalists often have the ability to control and safeguard their investment in initial stages. Further, they develop additional skills and capacities through their networking. They meet their professional, financial, marketing and managerial needs through networking (**Hellmann & Puri, 2002**). Similarly, new firms can seldom access established networks for hiring specialized advice on highly specific topics such as technology development via linkages with

academic institutions (**Schwartz & Hornych, 2010**). The network advantage helps the venture capitalist or entrepreneurs to access right knowledge from right source. For instance, a venture seeking professional advice on a specific field of IP expertise might lack the financial means to pay high consultancy fees (**Bruneel et. al, 2012**).

Collaboration with other partners of firms helps to get the opportunity to acquire new knowledge (**Yli-Renko et al., 2001**) and to develop new capabilities (**Lane& Lubatkin, 1998**). Building knowledge and capabilities through inter-organizational relationships is faster than where the firm to internally develop the knowledge and capabilities (**Bruneel et al., 2010**). Knowledge acquisition and real time information transformation is vital in the flexible market environment. Networking with other firms helps to get an advantage of legitimacy in the market place which in turn help for survival of the business. several studies highlighted the importance of networking in the business. nascent firm has little advantage, thereby limiting their opportunities for resource acquisition and reducing their survival propensity as compared to established firms. The studies showed the advantages of networking. For instance, the acquisition of legitimacy through exchange relationships with other organizations increases firms' survival chances (**Bruneel et. al, 2012**).hird generation BICs' tenants are younger, smaller and have shorter incubation periods than tenants housed in first and second generation BICs. Third generation BIs are more focused on starting up companies, shown by the higher number of companies established within the Business Incubation Centres; while the first- and second-generation entrepreneurs or tenants relocate their business according to changing their business environment. In fact, third generation are the more risk takers and high aspirants for the survival of their entity. It depicts the progress of the BICs from first and second to third level of BICs. There for it has been inferred that BICs have significant influence on the development of business entities.

In general, the business incubation development has been classified into three stages;

Table 2.1
Summary of the Evolution of Business Incubation Services

	First Generation	Second Generation	Third Generation
Period	Late 1950s to Mid 1980s	Mid 1980s to 1999s	Mid 1990s to Present
Concept of BIs	Office space and shared resources	Coaching and training	support Access to technological, professional, and financial networks
Rationale	Economies of scale	Accelerating the learning curve	Access to external resources, knowledge, and legitimacy

Source: Researcher's View

The business incubation process has proven increasingly important for startups, and there are now over 10,000 incubators globally, as well as a significant body of literature on the incubation process with an array of discussions on its interventions and outcomes (**Kanza et.al, 2023**).

The idea of Business incubation started in the early 1950s but the first academic studies started only after 1980. According to **Anna Alexandersson (2015)** Business incubator is an economic development tool which will help the entrepreneurs in early stages of enterprise development by establishing a supportive system. **Joshua Mutambi (2013)** define Business Incubators as a unique and flexible combination of business development process, infrastructure and people, designed to support enterprises in their early stage which will accelerate the growth and survival. According to **Lina Natterlund et.al (2014)** a business incubator is an organisation which provide necessary facilities such as infrastructure, information, networking to entrepreneurs. There are different types of incubators based on the service they provide, market they cater, and ownership structure. **Steffen Roth et.al (2006)** suggest that business incubators are essential tools for developing enterprises by providing necessary resources and facilities. Two models focus on internal strength: self-organised incubators, which accept orders based on capacity, and

generative incubators, which focus on resource availability and service optimal use. These models help businesses adapt to market requirements and develop core competencies.

Das et.al proposes an idea of converting university library into a business incubator. The business incubator enhances core competencies of student and provide an environment for commercialising their business ideas. The services offered by the incubator should be market research, assistance and access to networking, funding and information, centre for research and development, entrepreneurship and innovating education forum etc. **Vedovello et.al** (2003) observe that business incubators are stimulator of change. By stimulating entrepreneurship in sectors of high technology through business incubator economies can move into sophisticated and demanding path of development

2.6 Rationale of Business Incubation in Promoting Entrepreneurship

Developing economies are investing more on small and medium enterprises to boost economic activity. The start-ups and SME are promoted through business incubators and business parks during their initial stage of development.

Lina Natterlund et.al (2014) says that the objectives of incubators varies based on type of business incubator. Non-profit incubators which are typically small incubators have objective of regional economic development. University business incubators sponsored by universities and research institutions promote commercialisation of research results and innovative ideas by universities. For-profit business incubators add value to the enterprise. The important value adding component are business support, access to capital, business network, information gained etc.

Emilia Carlsson et.al (2015) knowledge offered by incubators play key role in survival of enterprises. A study on technology enterprises, incubators providing business knowledge complement their technological knowledge. Two processes, knowledge acquisition and knowledge integration constitute the process of managerial capability development. Incubators provide assistance as training,

mentoring in acquisition of knowledge. Knowledge acquisition is higher in the initial phase of start-ups as the entrepreneurs need extensive knowledge in various field. As the firm enter into growth phase, the focus shifts to knowledge integration.

Tabetando (2010) look into the benefits of shared facility. Internal networking among tenant firms benefit them as it provide an opportunity for collaboration in the form of formal or informal partnership, joint ventures and information sharing. With shared working space and informal relationship incubator can promote the objective of promoting entrepreneurship and leading edge research.

Mohd Ghazali & Mohd Yunos (2010) says business incubators address the problems of economy by proving opportunity for innovation and entrepreneurship thus improving unemployment and wealth creation. By providing resources and shared facility among entrepreneurs, business incubators assists in reducing overhead cost. Govt. agencies and schemes plays an important role in transfer of technology for commercialisation efforts. They provide frameworks in commercialisation in SMEs. The financial aid and other resources are available as long as they stay in the incubators. Collaboration of govt. agencies, universities and private sector are essential for culturing new enterprises in business incubators.

Joshua Mutambi (2013) proposes Open Innovation Business Incubation is a Ugandan business environment that integrates business incubation and open innovation. It emphasises combative attitude, resource-based capability, and entrepreneurship. In order to facilitate commercialisation, business incubators can collaborate with a variety of stakeholders, leverage knowledge and resources, and enhance industrialisation.

Maria Kiseleva (2017) suggest that business incubators help start-ups with initial issues. They help startups expand through numerous services. Sharing facilities, practical managerial help, business atmosphere, education, finance, commercial and technical support are key features of business incubators. A study in two business and economic environments indicated that business incubator goals vary by context. In Russia, business incubators teach entrepreneurial skills and nurture budding entrepreneurs, while in Sweden they help startups become

multinational enterprises. Due to the bad business environment in Russia, entrepreneurs face lack of assistance, bureaucratic issues, and unlawful activity. Only foreign entrepreneurs struggle in Sweden. Swedish incubators offer better networking than Russian ones.

Ol'ga kasjakova (2004) says business incubator provide opportunities for entrepreneurs as well as investors. They provide necessary infrastructure, technical management service for potential innovative ideas of young aspiring entrepreneurs, thereby reducing unemployment rate. The incubators play a key role in transfer of knowledge into practice. Incubators will be beneficial in less developed regions with high educational potential.

Mayra et.al (2010) suggest business incubators provide an opportunity to develop network for tenants as networks are valuable in business development. The size of the network depends on the size of business incubator. Sharing facilities and resources encourage the development of formal or informal relation which in turn help in knowledge and experience sharing.

Shukla et al. 2018 opines that an entrepreneurship ecosystem plays a significant role in nurturing entrepreneurial activities in a country

Aruna et.al (2007) opines that the ownership of business incubators have an effect on entrepreneurs. Non-government incubators have minimum government support and they are more market based business incubators with profit motivation. They help in attaining speedy profitability. The business incubators act as a bridge between the entrepreneur and financial service providers and create a resource network.

Basu &Chirantan says that business incubators support the growth of entrepreneurship through administrative support and advisory services. Business incubators are programmes designed to step up the successful growth of entrepreneurial firms. Their prime objective is to promote innovative business within a society.

Shannon (2003) suggest that business incubators provide opportunity for employment generation and wealth creation where development is minimal. When deciding to start a business incubator, the requirement and culture of the community should be considered. The service provided by the business incubator also take into account of community. If the goal is to uplift the community economically by providing them an opportunity to start a business, the model should be based on public funding at infancy. Once business incubator's operation and expenses are normalised dependency on govt. funding can be reduced and incubators can find its own capital.

Rita Diedericks (2015) highlights the importance of university business incubators in enabling students to start enterprises, commercialize academic innovations, and provide support during pre-start-up, stat-up, and growth phases. These incubators offer mentoring, networks, and business training, with management services and networking services being most essential.

Muthukumaran & Ramar (2017) has the opinion that both in the developed and developing countries, business incubation centres are getting attention as a tool to stimulate entrepreneurship

Ramar et al. (2020) argues that business landscape in India is characterised by two incubation drives namely business incubators and technology centres. The main purpose of these are to inspire financially feasible business development and sustainability. . By supporting an entrepreneur to start a business in an area, the community get benefited by the new jobs created by the business.

Jeraj (2010) says that Entrepreneurship is not only depends on the combination of ideas, desire for accomplishment and a trend away from employment, integration with the right business partners but also on the infrastructure and laws a country offers for the entrepreneurial development. There is a high rate of entrepreneurial activities and competitiveness in countries with good entrepreneurial infrastructures such as technology parks, incubators etc.

Gamede & Uleanya 2018 sited poor entrepreneurial infrastructure in the institution of learning and community results in entrepreneurship growth.

Li et al. (2020), has the opinion that Training programmes, capital support and network services through business incubators along with Government regulations plays a major role in developing entrepreneurship. In order to promote entrepreneurship, governments in developed and developing countries should be given more focus on business incubation centres and government regulations for entrepreneurship.

According to **Muthukumaran & Ramar (2017)**, business incubators now offer a wide range of professional services in addition to basic equipment. These services' quality, range, dependability, and accessibility draw people to the incubator, helping them grow their businesses.

Dutta, et.al.,(2016) argues that development of business incubation centres boosts the development of start-ups. Business incubators helps to achieve their objectives and function more efficiently. sited that business incubation centres helps the start-ups in their survival and growth mainly during the vulnerable and early days by providing necessary support, financial and technical services including physical space, capital, networking connections and common services.

Li et al. 2020 observed that most of the small businesses do not survive more than a few years due to the problems faced by the entrepreneurs including lack of educational and technical skills, inadequate infrastructure, support system and facilities. Business incubators plays a crucial role in solving these problems and ensuring the development of small businesses.

Basu Chirantan (2013) says that the firms that are part of an incubator shares the same facilities and overhead expenses. The entrepreneurs get management guidance and operational assistance from the experienced entrepreneurs and retired executives through business incubation centres.

Igor Nosov et.al (2009) suggest business incubators contribute to financial awareness of entrepreneurs. Most enterprises find initial capital through

bootstrapping. Entrepreneurs convert social capital to financial capital in early stage. As the firm enters to growth phase further invest is required. This is raised through external sources. Network facility provided by incubators play major role in acquiring investment.

Gamze Koseoglu (2007) highlights the importance of business incubators in networking tenants, fostering external and internal relations, collaboration, solidarity, and familiarization with the business environment. A study found that social capital development in firms and universities is influenced by previous ties, with university managers being more motivated.

Carlos et.al (2011) has the opinion that Business incubators aid in feasibility analysis, achieving maturity, and obtaining venture capital for expansion projects, primarily in high technology industries like IT and biomedical.

Anders Hansson et.al (2007) says incubators provide opportunity for internationalisation. Incubators act as bridge between entrepreneurs and investors. Enterprises are looking for FDI as they view foreign investment as an opportunity to access new markets. Foreign investment also boost the network of enterprises.

2.7 Determinants of Business Incubation's Performance

Patience et.al., (2006) says that the objectives and variables in success of Business incubator varies according to business environment of the region. In a study about the success factor in South Africa, many of accepted success factors found no significance. Stringent selection process, feasibility analysis and quality of entrepreneurs are not important in success of business incubator. According to the study, proximity to University, availability of funding, networking service, competent and properly incentivised management are important factors which affect success. The policies of incubator should be aligned with government policies at provincial and local level. The incubator should not rely entirely on public funding and find own sustainability plan. Every stake holders should have clearly defined roles.

Lina Natterlund et.al (2014) has the opinion that the success of incubator perceived by tenant are the incubator's contribution towards regional and local economic development, the success of tenant firms, capacity of incubators etc. Author point out fifteen factors which affect the success of incubators. Of these five factors found most important such as public policy towards incubators, collaborations with university and research institutes, community involvement, networking and investment in private sector in order to access high quality mentoring and market.

Jonas Lagneryd et.al (2007) emphasize the importance of sustainability in early business planning for firm success and social welfare. By understanding the relationship between business and environment, entrepreneurs can incorporate sustainable development concepts, leading to more environmentally responsible business models.

Todd L. Wendorff (2014) proposes an idea of design thinking focussed incubator model for success of incubator. Integrating design thinking will enable a balance in exploration and exploitation. Moving too quickly to exploitation limit in determining valuable outcome. While remaining too long in exploration will drain the resources. A design focussed incubator allow entrepreneurs to utilise lean start-up method end paired with designers to work and explore different ideas and develop a user focussed product.

Bollingtoft et.al (2005) says about network incubators, which focus on intangible resources. The intangible resources include social capital, psychological support, peer network, legitimacy etc. according to them resource and opportunities are of two types, tangible and intangible.

According to **Aruna Chandra et.al (2007)** for government incubators, financial self-sustainability become a key issue as the incubator depends on government grants and resources which will limit their capability toward market oriented incubation. This over dependence on government resources limit the capability of business incubator in providing a range of financial service to tenant.

Whereas the non-government business incubators, because of their various financial service and self-sustainability become more competitive and financially viable.

Eunica M A Ayodo (2017) has the opinion that leadership, network opportunities and services provided affect the success and growth of business incubator. Factors such as the quality of infrastructure, innovation-enabling facilities, and fitness for use, facility enhancement, and adequacy of service are all factors that contribute to the growth of incubators. Establishing clear management framework and policies, strategically selecting the product they offer, monitoring and evaluating the use of resource by incubate, providing networking service through collaborations, coverage, exposure to completion, publicity are also important aspects in growth and success.

Shannon et.al. (2003) suggest that if the business incubator is to enable development of under developed communities, the success of such incubator depends on the community also. Each region have different community requirement. When business incubators are established their service also take into consideration of communities requirements.

Veronica Villarroel et.al (2010) says that business incubator model changes over time as the resource available changes from indoor incubator to outdoor incubator and then business accelerator. The growth depends on availability of resource, external environment, size of network, knowledge transfer.

Pena (2003), argues that the capital invested in training and management by incubators and networking play a vital role in survival. The most influential determinant of survival and growth of SME are factors relating to human capital. Start-up with more qualified personal in terms of education and experience expected to perform better than others. The firm related variable also play a positive role in survival as firms look into other market and organisations for resources they lack. By exploring and experimenting they will be able to adapt to the business environment.

2.8 Evaluation of Performance of Business Incubation Centres

Many people agree that business incubators play a big part in promoting people to start their own businesses. This is because they help with things like innovation, economic growth, and job creation. Incubation centres give start-ups essential resources like mentoring, access to funding, infrastructure, and chances to meet other entrepreneurs as well. These tools help them solve initial problems and grow in a way that lasts. In Kerala, where starting a business is becoming more popular, business development centres have become very important for starting new businesses and keeping them going.

Alison M Verba (2008) has the opinion that the success of a business incubator depends on the configuration of incubator. Tenant selection, management, service, and stakeholder network depends on incubator configuration and success. The performance can't be evaluated as objective of incubators depends the performance. One metric in analysing the performance is the tenant graduation and survival. According to a study in Hamilton County Business Centre majority of enterprise remains in operation even after graduating from incubator though they reminded as small business.

Lina Natterlund et.al (2014) argues that there are different approaches in analysing the performance of Business Incubator. The performance depends on the strategy and goals of Business incubator as different type of incubators have different goals. In assessing performance benchmarking is an important tool. Performance is measured in four dimension: cooperation with universities and research institutes, networking capability, availability of financing, and competence development. Based on a study in regard to biotechnology incubators the performance indicators are found to be job creation, economic enhancement, access to funds, incubators offer and internal environment.

Sherman et.al (1998) suggest that entrepreneurs are admitted to incubators are based on various criteria, so comparing the survival between incubated and non-incubated enterprises may not be meaningful.

In the opinion of **Lofsten et.al (2002)**, value added to society varies in incubated technology firms. Enterprises in incubator have better experience in innovation and marketing, university collaboration compared to firms outside incubator. Performance are evaluated based on employment, sales growth and profitability. Incubated enterprises show better performance in employment generation than firms outside the incubators.

Bhabra-Remedios et.al (2003), proposes idea of incorporating organisational theory in evaluating the performance of incubators.

Abetti (2004) suggest variable for performance evaluation are number of enterprises created, job creation, growth and regional development, and cost effectiveness.

Balachandran A (2015) opinions that acceptance from customer is considered as important success factor for incubated enterprise. Access to market and network also determine the success of firm. Employment generation is not considered as success qualifier as employment generation comes after financial success. Author proposes open innovation activities may promote success of incubated firms.

Sureshkumar K (2012) suggest a combination of parameters affect the performance of incubator such as facility, selection process, service provided etc. Incubator network service and graduation criteria doesn't have effect of performance. Incubator management have negative effect on success of enterprises.

Phillip H. Phan et.al (2005) propose comparing survival rate of different incubators than considering survival rate of a particular incubator provide better understanding of performance.

Hackett et.al (2004) explains how incubators improve chances of survival of entrepreneurs in early stage of development.

Lita, et.al., (2011) have studied the impact of the entrepreneurial orientation and culture on innovation and organizational performance among small

and medium enterprises (SMEs) in the tourism industry supporting Indonesia. They found that entrepreneurial and cultural assumptions of the organization have a significant impact on innovation, which in turn has an impact on performance. Surprisingly, innovation has no significant impact on performance and does not include the influence between entrepreneurial orientation and organizational performance

Breivik-Meyer et al. (2012) looked at how incubator support, also known as buffering and bridging methods, can help new businesses get skills and resources from outside sources. When it comes to business inclusion, they showed two different types of important approaches: sheltering and building. This research looked at how companies use different input services and how that affects sharing resources and skills. It also shows how important it is for source incubators to have access to a variety of help sources so that new companies can build up their skills.

Tang et al.,(2014)have studied about Technology Business Incubators (TBI) and their selected Business Incubation models. By taking the appropriate approach, a five-generation TBI is being analysed in Beijing's Zhongguancun region, 'China Silicon Valley'.

Baskaran et.al., (2014) have studied about various developments related to the role of business incubators, academia and social enterprises towards inclusive entrepreneurship, innovation and sustainable growth. Business incubators have increasingly been seen as facilitators of social inclusion and inclusive growth. Due to the positive contributions of the social enterprise sector in terms of gross domestic product (GDP), employment and positive social and environmental impacts, social entrepreneurship is recognized worldwide as a mainstream activity.

Meister, AD & Mauer, R (2018) have identified the key themes of a specific incubation process that addresses the lack of embeddedness and barriers for refugee entrepreneurs in the host country. From the results, they described a specific business incubation process framework of refugee entrepreneurs. In light of statistics indicating the collective incorporation of refugee entrepreneurs, this study emphasises the function of the incubator.

The short- and long-term impacts of business incubators on the performance of creative companies in terms of sales revenues and employment creation have been studied by **Lukes et al. (2016)**. Further analysis of the impact of incubator attributes, such as ownership, validation, and size, on the growth of tenant start-ups has revealed that these benefits are minimal.

Blackburne, & Buckley, PJ (2014) did a case study research, which is conducted by an international business incubator in China, the British Export Promotion Company, showing how firms can facilitate foreign market entry.

Bose et. al., (2019) have evaluated the critical success factors (CSFs) for agro-business incubation in relation to business performance. The seven CSFs considered for agri-business incubation are: MI: Clear and Unclear Mission; EE: Entry and Exit Policy; NW: Networking Strategy; AS: Tenant's Assessment Process in BI; FC: Facilities for rental companies; SC: Services provided to rental companies; And MS: Manager's skill, experience and expertise. This study highlights the need to improve entry and exit policy, while services, networking, and facilities may be improved to improve performance in agri-business.

Yin et.al. (2017) have conducted an analysis of a distinctive dataset that includes the actual profiles of start-ups that are relevant to the first seed accelerator in Southeast Asia. The analysis also includes the decisions made by the accelerator, which reveal the selection process and cryptographic criteria. They disclosed that the implicit decision criteria of Accelerator managers underwent a transformation from eight true or winning criteria in the initial screening of numerous startups to an additional four winning or meritorious criteria in the final selection of a limited number of start-ups..

Dvoulety et al. (2003) utilised firm-level data from 205 incubated Czech enterprises established post-2003 and compared them with firms that did not receive incubator support. Results Embedded firms exhibited higher mean values for the aforementioned indicators in comparison to the control group, indicating that Czech incubators have not effectively facilitated the growth of incubated companies..

Di Fatta et.al., (2016) tried to study the relationships among startup companies within the incubator. This paper highlights the role of relational situations for innovative projects in partnership with incubation agencies.

David-West et. al., (2018), analysed the start-up models utilised by entrepreneurs in establishing Purpose - Platform Enterprises and the influence of business incubators throughout Sub-Saharan Africa (SSA). Their findings showed that private ownership in the startup ecosystem is still low and public-private partnerships are lacking.

Iqbal et al. (2019) SMQA has examined the current status of Technology Transfer Offices (TTO) at a research-oriented university in the UAE, utilising the Etisalat BT Innovation Centre at Khalifa University and conducting a case study on the Masdar Institute to assess university policy implications. Their findings indicated that TTOs provide various forms of assistance to university researchers.

The relationship between entrepreneurial effectiveness and idea exchange between enterprises and the perceived value of inter-tenant network resources has been investigated by **Hovig et al. (2018)**. In a multi-case study of incubator-based startups, they discovered that powerful entrepreneurs are more likely to collaborate and place a high value on network resources.

Mrkajic, B (2018) showed evidence that at different stages of the entrepreneurial life cycle, both models supply and facilitates the different needs of entrepreneurs. He has argued that the incubator model option is contingent on incubator sponsors, i.e. the incubator's affiliation, primarily through available resources and imposed targets.

Kohler, T (1989) conducted interviews with managers and participants of corporate accelerators, providing managers with a framework and strategies for the design of corporate accelerators. To effectively shape the innovation landscape of startups and include corporate accelerators within the broader innovation strategy of the organisation, it is essential for managers to engage in a systematic and deliberate

examination of the proposal's design, its various dimensions, the processes involved, the individuals engaged, and the physical environment.

Allen & Rahman (1985) asserted that management problems, under capitalization and lack of business skills hamper survival rates among new ventures and this is where the incubator facility plays a key role by providing the assistance that fills the knowledge gaps, reduces early-stage operational costs such as rent and service fees, and establishes entrepreneurs in a local enterprise support network.

Campbell et al (1985) emphasized that the incubators deliver added value through the provision of more intangible factors—the diagnosis of business needs, support with business planning, introduction to peer group networks, the deployment of professional networks, mentors and funding agents than through the physical infrastructure

Brooks (1986) described an incubator as a multi-tenant facility which provides entrepreneurs with flexible leases on small amounts of inexpensive space; a pool of shared support services to reduce overhead costs; some form of professional and managerial assistance; and access to or assistance in acquiring seed capital

Campbell (1989) considered business incubators to be change agents in transforming economy and identifies low costs of developing and operating incubators as well as quality management of facilities as features contributing to the effectiveness of incubators.

Bruton (1998) reported that while generally one third of new firms do not survive the third year and about 60 per cent do not survive the seventh year, this number considerably falls to 15–20 per cent among incubator tenants.

Lewis (2001) was of the view that new venture failure in a vast majority of cases is due to lack of financing, weak management skills and poor understanding of market needs and that business incubators can ensure the survival of graduate firms at a significantly higher rate than general population of new ventures

Lalkaka (2003) concurred with the view that business incubator is one instrument to help tackle the obstacles faced by entrepreneurs and counter the high start-up failure rate. Wilber and Dixon (2003)⁹⁶ found that business incubators, when adequately utilized, have attributed to managers and owners of small businesses acquiring managerial skills that are necessary for survival in a competitive environment.

Aernoudt (2004) proposed that business incubators nurture young firms, helping them to survive and grow during the start-up period when they are most vulnerable. By providing a single point of contact for help and support, business incubators improve the growth prospects of new ventures

Hanadi et al (2010) recognized that business incubators impact a wide range of economic activities such as building confidence among the finance community, supporting start up's, promoting a cultural change and help in fostering a culture of entrepreneurship

Kerala Technology Startup Policy 2014 – As per this, to employ all its youth, India will have to create one million new jobs every month for the next 20 years and this is going to be created by new startups through entrepreneurship. The renowned Kerala model of development, which has successfully attained a high Human Development Index (HDI) in an equitable fashion, must now transition into a new paradigm focused on fostering knowledge, generating employment, and creating wealth through innovation and entrepreneurship, thereby serving as a benchmark for the entire nation.

Sujith et.al. (2018) found that Business incubators helps entrepreneurs in the process of starting a new business. It provides support and guidance to help entrepreneurs in identifying market needs, new idea generation, and bring incubator's products to market quickly. This involves staying up-to-date with current trends, always looking for unexpected opportunities, flexible and adapting to changes to provide value to customers.

Kakabadse & McGowan (2014) says that the success of a business incubator depends up on the intangible things like relationships. So it's important for researchers to study the specific environment of each incubator.

Mian et.al., (2016) studied that Technology Business Incubators (TBIs) are the places where entrepreneurs can access technology, resources, and financial assistance to help them grow their businesses. TBIs may be called by different names, but they all serve the same purpose. The first TBIs started in the 1950s and aimed to create jobs and help businesses succeed. Now there are many different types of TBIs all around the world.

Blanck M et.al.,(2019) studied the relationship between smart urban development indicators and indicators associated with incubation in different urban contexts. For them incubation is the process of supporting entrepreneurs in developing their business ideas from conception to launching. The study says that there are no statistical differences between medium and large cities in terms of their smart urban development indicators.

Bulsara, et.al., (2008) found in their study as Technology Business Incubation is a way to turn science and technology ideas into a successful business. It involves working together with different types of groups such as government, businesses, and schools, to help grow the economy. By working together, people can create new businesses and ideas that will help everyone.

Lala, K., & Sinha, K. (2018) studied how technology business incubation has developed in India. India's innovation potential has increased significantly over time. The study found that the technology incubation is new in India and needs better policies to promote its growth.

Maital et.al., (2008) studied about incubators in Indian educational institutions and found that most of them don't give money to start-ups, but they help them meet investors. They found that start-ups can't pay for expert services, and service providers don't want shares in the start-ups because they often fail. In order to improve incubation in India, we need to find ways to reduce risk and uncertainty

and encourage more entrepreneurship. We need to study successful incubators and create theories on effective incubation processes.

Jyotsna et,al (2020) in her study found that start-up founders are happy with the facilities provided by their incubation center. The support they received from incubation centers helped them in various ways such as mentoring, marketing, and networking. Incubators help in product development, finding capital, and other services. To create a good start-up environment, it's important to improve existing incubator facilities and establish new ones to accommodate more start-ups. Since incubators mostly rely on government funds, the government should provide more technical education funding and support to promote innovation.

Mazhar,et.al., (2021) found that Business Incubation Centers (BICs) offer important services and resources for new businesses. They can help to create new technologies and reduce unemployment. It encourages self-employment, commercializes university research, creates links between industry and academia, and contributes to economic growth.

Li et al. (2019) examined the role of business incubation centres in promoting entrepreneurship alongside entrepreneurship education. The study reveals that both entrepreneurship education and business incubation exert a direct positive influence on the entrepreneurial intentions of students. The findings indicate that entrepreneurial self-efficacy serves as a mediator in the relationship between entrepreneurship education, business incubation, and entrepreneurial intention.

Kishinchand et.al., (2022) studied different types of incubators that offer different types of resources to technology-based enterprises (TBEs), and entrepreneurs use these resources to save costs and reduce risks. The analysis shows that they often move to different incubators to access the resources they need. Incubators need to provide specialized resources from both academics and industry to maintain relevant and effective for TBEs.

2.9 Recent developments in the start-up eco system of Kerala and Govt. policies

In recent years, Kerala's startup ecosystem has experienced substantial development and transformation, which has been facilitated by strategic government policies and initiatives. The following are ten literature reviews that emphasise these developments:

The Hindu (2023) reports a Public Procurement Expansion for Startups. The procurement ceiling for products and services from startups enrolled with the Kerala Startup Mission (KSUM) was raised from ₹1 crore to ₹3 crore by the Kerala government in May 2023. This policy allows government departments, public sector undertakings, and local entities to engage more extensively with startups, thereby fostering innovation and providing a substantial market for emerging businesses.

India Times (2023) highlights that in the 2021-22 World Benchmark Study on Startup Ecosystems, the KSUM has been acknowledged as one of the world's top five public or private business incubators. This recognition emphasises the robust support mechanisms and effective incubation programs of KSUM, which have been instrumental in the development of businesses in the state.

The Hindu (2023) pointed that Kerala initiated the construction of India's inaugural Digital Science Park in Thiruvananthapuram in April 2023. The objective of this initiative is to strengthen the state's infrastructure for digital innovation by providing support to commercial and technological businesses that specialise in fields such as robotics, artificial intelligence, and smart hardware.

Livemint (2023) reported that *in* June 2023, the K-FON project was launched as a public-funded initiative with the objective of establishing high-speed internet connectivity throughout Kerala. K-FON addresses the digital divide and establishes an enabling environment for startups to flourish, particularly in underserved regions, by guaranteeing universal internet access.

New Indian Express (2025) reported that The Invest Kerala Global Summit, which was conducted in February 2025, was designed to attract investments from both domestic and international sources in a variety of sectors. The summit

demonstrated Kerala's potential as a business hub and offered startups the chance to establish connections with investors, policymakers, and industry leaders, thereby fostering economic development and collaboration.

Kerala Responsible Industry Incentive Scheme (K-RIIS) (2023) declared K-RIIS, which was established to encourage responsible investments, provides a variety of incentives to businesses in 22 priority sectors, such as tax exemptions, subsidies, and financial support. The government's dedication to cultivating a sustainable and inclusive startup ecosystem is evident in this initiative.

The Hindu (2024) highlights Kerala's startup ecosystem, which experienced a compound annual growth rate of 254% between July 2021 and December 2023, was valued at \$1.7 billion, according to the 2024 Global Startup Ecosystem Report. This extraordinary growth rate is five times the global average, underscoring the efficacy of the state's policies and support structures for startups.

The Economic Times (2022) reported that Kerala implemented the "Technology Transfer Scheme" in November 2022, which provides entrepreneurs with technology licenses from government research institutions with reimbursements of up to ₹10 lakh. This initiative fosters innovation by allowing entrepreneurs to access and commercialise cutting-edge technologies, thereby improving their competitive advantage.

Financial Express (2024) reported that The Emerging Technology Hub, a ₹350-crore public-private partnership with Technocity as its location, was announced in November 2024. The hub's objective is to equip entrepreneurs with cutting-edge infrastructure and resources to foster innovation in these critical sectors, including food and agriculture, space technology, renewable energy, digital media, and healthcare. To support entrepreneurship, the state has also established a network of 15 LEAP centres located near educational institutions.

Inc42 (2022) reported that in late 2022, Kerala's draft industrial policy was unveiled, with a focus on the promotion of investments in emerging sectors such as semiconductors, artificial intelligence, and renewable energy. Kerala's policy is

designed to establish a favourable environment for entrepreneurs and establish the state as a leader in sustainable and technology-driven industries by offering incentives such as tax reimbursements and subsidies on investments.

2.10 Research Gap

The analysis of the existing literature on the topic indicates that previous research conducted in various regions globally has demonstrated the advantages of effective incubation programs. However, there is a scarcity of studies focused on the function of business incubation centres in India overall, and a thorough investigation into the role and efficacy of these centres in fostering entrepreneurship specifically within the context of Kerala remains absent among scholars. Throughout three decades, a variety of studies has been undertaken to thoroughly examine the incubation process. This includes an exploration of the services and value it provides, alongside an analysis of the mechanisms that facilitate startup support and growth. Although previous studies have examined the effects of business incubation centres (BICs) on entrepreneurship both nationally and internationally, there is still much more to learn about their function in Kerala's unique setting. Kerala has emerged as one of the most entrepreneurially active state in India with an increased number of initiatives to set up new ventures. In order to create a support system that promotes and sustains entrepreneurial development and give the desired impetus to the growth of new enterprises, the Government launched business incubation centres in Kerala during the early 2000. Since inception, they are being established on a fast track across the state with substantial commitment of resources. The Kerala government has launched a number of programs to assist new businesses, but little is known about how well these policies match the real requirements of business owners and how BICs might help close this gap.

By filling in these gaps with empirical research, we may gain important knowledge on how to make Kerala's business incubation centres more effective and increase their role in promoting entrepreneurship in the state. Hence the present study is envisaged to fill the gaps in the availability of information for the promotion of entrepreneurship related aspects of business incubation centres in Kerala. As a

result, the purpose of the current study is to identify and comprehend the many kinds of interventions that are implemented as a component of the incubation process, including the results that constitute the target of beneficiaries. This study is an attempt to unveil in detail the effectiveness of the services provided by the Business Incubation Centres in promoting entrepreneurship in Kerala.

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CHAPTER 3

BUSINESS INCUBATION CENTRES – AN OVERVIEW

3.1 Introduction

Entrepreneurship serves as a fundamental catalyst for economic expansion, innovation, and employment generation. Over the past few decades, the importance of entrepreneurship has been increasingly recognized by governments, policy-makers, and academics worldwide. Entrepreneurs, by introducing new products, services, and business models, contribute significantly to the dynamism and competitiveness of economies. In this context, business incubation centres have emerged as crucial institutions that support early-stage startups by providing necessary resources such as mentorship, infrastructure, and access to capital. These centres play a pivotal role in reducing the failure rate of startups, thereby enhancing the overall success rate of entrepreneurial ventures.

The rise of startups, particularly in technology and digital sectors, has transformed the entrepreneurial landscape globally. Startups are often characterized by their innovative approach, scalability, and ability to disrupt traditional industries. Nowadays, technology helps startups develop, scale, and disrupt industries. Startups leverage technology to develop, scale, and disrupt industries, utilizing cloud computing, AI, data analytics, digital marketing, block chain, IoT, and remote collaboration for enhanced security and productivity.

In India, the startup ecosystem has witnessed exponential growth, fueled by government initiatives like Startup India and increasing investor interest. Kerala, known for its high literacy rate and skilled workforce, has also become a fertile ground for startups, supported by state initiatives such as the Kerala Startup Mission.

PART A

3.2 Economic Reforms and Entrepreneurship

Digitalisation, globalisation, and changing consumer needs are driving the rapid changes in entrepreneurship in the modern period. Emerging technologies like blockchain, artificial intelligence, and the gig economy are now having an impact on the classic stages of entrepreneurship: ideation, startup, growth, and maturity. Access to global expertise and data-driven insights speeds up the ideation stage, allowing business owners to spot opportunities more quickly. Lean business models, virtual employment, and crowd funding are reshaping the startup process and lowering barriers to entry. Agility is increasingly necessary during the growth phase since companies need to continuously innovate to remain competitive in the rapidly evolving digital market. In contrast to earlier times, the maturity phase is now about constant change rather than just stability, with companies using automation, sustainability, and customer-focused tactics to prosper. Entrepreneurial success is also being redefined by new exit strategies like switching to decentralised business models or being acquired by internet giants. To successfully manage the constantly changing business landscape in this fast-paced era, entrepreneurs must possess adaptability, digital fluency, and inventiveness.

The process through which an economy shifts from being based mostly on agriculture to one centred on the manufacturing of goods is known as industrialisation. During industrialisation, assembly lines frequently take the place of craftsmen and mechanised mass manufacturing frequently replaces individual manual labour. Technological innovation, higher production capacity, urbanisation, and alterations in societal structure are all linked to industrialisation, which brings about changes in the labour force, the economy, and social dynamics.

The process typically entails the rise of industries in fields like mining, manufacturing, and transportation. It also frequently results in the formation of new cities, the production of jobs, and a considerable shift in the norms and values of society. Modern economies have evolved largely as a result of industrialisation, especially in the 18th and 19th centuries during the Industrial Revolution.

3.2.1 Pace of Industrial Development

The rate at which industries grow and become successful within an economy is often referred to as the pace of industrial development. This might change greatly based on things like global economic situations, political policy, resource availability, and technological breakthroughs. Historically, the late 18th and early 19th centuries saw a dramatic acceleration in industrial development, especially in Western Europe and North America, during the Industrial Revolution. Fast technical advancement, the emergence of factory systems, and the transition from rural to industrialized economies characterized this age.

Globalisation has impacted the rate of industrial development in more recent times by facilitating the global diffusion of technology and industrial practices. Because of the availability of contemporary technology and investment, emerging economies, especially those in Asia and Latin America, have seen rapid industrialization—often at a far faster pace than early industrialised nations. But this rate varies throughout different sectors and regions, with some falling behind owing to other obstacles, political unrest, or a lack of infrastructure.

3.2.2 Industrial Development Pattern

The order and framework in which industrial expansion takes place in a nation or area is referred to as the industrial development pattern. Industrial development usually happens in stages:

Primary Stage: Small-scale enterprises specialising in the processing of agricultural goods predominate in this stage's economy, which are largely agrarian. There is little technological innovation and little industrial activity.

Take-off Stage: Manufacturing activity significantly increases when economies start to industrialise. Important sectors including steel, manufacturing, and textiles start to grow. This phase may be aided by government initiatives promoting industrial development and frequently entails large investments in infrastructure, including electricity and transportation.

Maturity Stage: Industries grow and diversify at this point. Cutting-edge sectors including electronics, autos, and chemicals gain prominence. Labour-intensive industries give way to capital-intensive ones as the economy shifts, emphasising innovation and increased productivity. When more individuals move to cities in search of industrial jobs, urbanisation increases.

High Mass Consumption: At this point, the economy is moving towards service-oriented industries and the industrial sector is quite developed. This stage is characterised by high income and consumption levels, with an emphasis on consumer goods, cutting-edge technology, and ongoing urbanisation.

De-industrialization: A move from manufacturing to service sectors is occurring in certain developed economies. During this period, manufacturing is moved to areas with cheaper labour costs, and the domestic economy is concentrated on the finance, technology, and other service industries.

Regional and Sectoral Variations: There are differences in industrial development patterns according to region and sector. For instance, depending on the availability of resources, some areas may grow particular businesses (e.g., oil and gas in the Middle East, IT in Silicon Valley). Furthermore, a nation's industrial development might be uneven, with some areas developing into industrial centres and others being underdeveloped.

Technological developments, environmental factors, and the dynamics of global trade all have an impact on the pattern of industrial development. The necessity for ecologically and socially conscious industrial practices has been emphasised by the emergence of green technology and the emphasis on sustainable development, which have given industrial development patterns new dimensions.

All things considered, a complex interaction between historical, economic, technological, and political elements shapes the pattern and speed of industrial growth, producing varying results in various places and eras.

3.3 The role of entrepreneurship in addressing the issue of unemployment

Unemployment and underemployment are significant challenges faced by every country worldwide. Unemployment is a detrimental economic situation that poses a significant concern for socio-economic stability. According to the International Labour Organisation, the term "unemployed" refers to individuals who are actively seeking employment but are unable to secure a job, despite their efforts.

Unemployment is the most widely recognised manifestation of labour underutilisation. In 2019, the worldwide workforce was 5.7 billion individuals, with 2.3 billion not actively participating in the labour market and 3.3 billion being employed. The number of unemployed individuals currently stands at 188 million and is projected to rise by around 2.5 million year, in accordance with the expansion of the labour force. According to the International Labour Organisation (2020), the global economy is now failing to create sufficient job opportunities for new individuals entering the labour market. In February 2020, the unemployment rate in India rose to 7.8%, according to the Centre for Monitoring the Indian Economy (CMIE). Rates in urban areas fell to 8.7 percent, while those in rural regions grew to 7.4 percent. According to the Global Entrepreneurship Monitor (GEM) Report, India is emerging as a prominent Asian country that is generating significant employment possibilities through its growing entrepreneurial sector. India has had a significant increase in the rate of entrepreneurship, rising from 9% in 2015-2016 to 14.9% (Jain 2019; Shukla et al. 2018).

(Sources: 1. International Labour Organization (ILO), 2020: The ILO's "World Employment and Social Outlook: Trends 2020" report 2. Centre for Monitoring Indian Economy (CMIE), February 2020, 3. Global Entrepreneurship Monitor (GEM) India Reports)

Entrepreneurship refers to the concept of individuals working for themselves and taking on the responsibility of starting and managing a firm. It accelerates economic progress and promotes a positive social structure. Good entrepreneurship reduces the variables that contribute to unemployment by establishing a favourable and mutually beneficial environment for both businesses and employees (Jain,

2019). Entrepreneurship is widely recognised as a significant catalyst for economic growth due to its ability to generate employment opportunities and foster innovation (Shukla et al., 2018).

Multiple studies indicate that entrepreneurship plays a crucial impact in mitigating unemployment rates. The relationship between unemployment and entrepreneurship was examined through two parameters. The pull effect, also known as Schumpeter's effect, and the push effect, also known as the Refugee effect. The pull effect assumes that entrepreneurship will generate employment prospects and, in turn, have an indirect impact on the creation of jobs in other established organisations. The push effect argues that the rising unemployment rate diminishes the likelihood of attaining a satisfactory income level and the availability of lucrative employment possibilities. This motivates individuals to initiate entrepreneurial endeavours (Dilanchiev 2014). (Jeraj 2010) noted that entrepreneurship is a potential means to mitigate the unemployment rate and the associated social issues. The study conducted by Asad, Ali, and Islam in 2014 discovered a correlation between a higher unemployment rate and a lower degree of entrepreneurial activities in an economy.

There is an inverse correlation between unemployment and entrepreneurship, as demonstrated by studies conducted by Carree in 2007 and Manjunatha in 2017. The establishment of new firms has a positive impact on employment resources and leads to a large reduction in unemployment. Entrepreneurship motivates individuals to utilise their abilities and ambitions to generate riches by producing goods and services (Manjunatha 2017). A high unemployment rate can stimulate entrepreneurial endeavours among individuals, whereas a high rate of self-employment can suggest a rise in entrepreneurial activities, ultimately reducing unemployment. To considerably reduce unemployment, it is necessary to promote entrepreneurial activities (Carree 2007). Entrepreneurship is crucial in providing employment opportunities, not only for the entrepreneurs themselves but also for others through their company organisations, such as labourers (Manjunatha 2017). In a study conducted by Bokhari in 2016, it was shown that implementing effective policies to foster the growth of an entrepreneurial ecosystem can potentially reduce

unemployment rates among the younger population. The public policies aimed at reducing unemployment should prioritise high-growth and creative businesses (Carree 2007).

3.4 Entrepreneur

A French word meaning "to undertake," "entrepreneur" is an English term with a French origin. Frenchmen who went on military excursions in the 16th century were indeed called "Entrepreneurs." People who went on to create their own businesses were later referred to by this phrase in the 18th century. The first economist to use the term "entrepreneur" to describe the risk-taking role of starting a new business was Richard Cantillon, a Frenchman of Irish descent.

In the words of **Collins Cobuild English Language Dictionary, 1987**, "An entrepreneur is a person who sets up business deals in order to make a profit."

J.B. Say defines, "An entrepreneur is the economic agent who unites all means of production"

According to **Richard Cantillon**, "All persons engaged in economic activity are entrepreneurs."

J.A. Schumpeter viewed that, "A person who introduces innovative changes is an entrepreneur and he is an integral part of economic growth."

As per **Webster**, "Entrepreneur is one who assumes risk and management of business."

According to **Walker**, "True entrepreneur is one who is endowed with more than average capacities in the risk of organising and co-ordinating various factors of production."

According to **Peter Drucker**, "Entrepreneur is one who always searches for change, responds to it and exploits it as an opportunity. Innovation is a specific tool of entrepreneurs, the means by which they exploit change as an opportunity for different business or service."

According to what **Dewing** has correctly stated: “The function of entrepreneur is one that promotes ideas into business.”

The word "entrepreneur" has been in use for around 500 years. Its meaning and meanings have evolved throughout the years, and they are summarised below:

Table 3.1
Changing connotations and meaning of Entrepreneurship

Period	Implications and Interpretations
Early 16 th Century	Designated individuals involved in military anticipations
17 th Century	Applicable to individuals involved in engineering tasks, including construction and fortification.
Beginning of 18 th Century	Refers to individuals involved in the economic dimensions of human activities.

3.4.1 Evolution of Entrepreneur

The concept of entrepreneurship has undergone a substantial transformation over time, adjusting to technological, social, and economic developments. Entrepreneurship, which comes from the French term "go-between," was initially associated with the management of large-scale undertakings during the Middle Ages. The definition of entrepreneurship was refined over the centuries by philosophers such as Richard Cantillon, Jean Baptiste Say, and Joseph Schumpeter, who distinguished it from capital providers and acknowledged their contributions to risk-taking and innovation. Entrepreneurship was emphasised as a dynamic process of opportunity maximisation, economic organisation, and value creation by experts such as Peter Drucker, Albert Shapero, and the National Knowledge Commission of India in the 20th and 21st centuries, thereby contributing to wealth generation and societal progress.

Table 3.2

Evolution of Entrepreneur

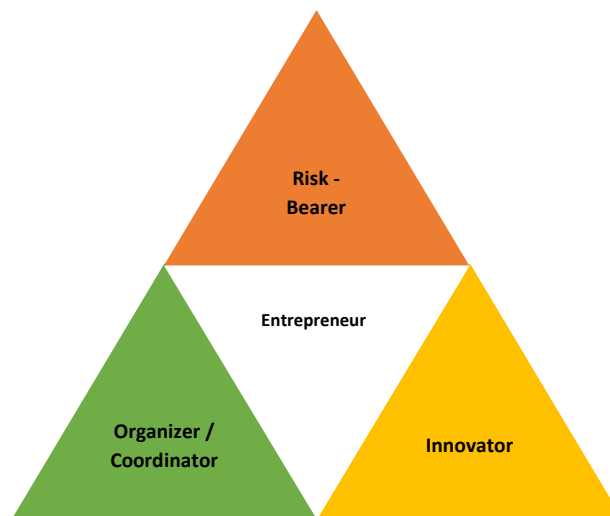
Entrepreneur stems from French word means between-taker or go-between.	
Middle Ages	Actor and person in charge of large-scale production projects.
17th century	person bearing risk of profit (loss) in a fixed-price contract with government
1725	Richard Cantillon -person bearing risks are different from one supplying capital.
1803	Jean Baptiste Say -separated profits of entrepreneurs from profits of capital.
1876	Fransis Walker -distinguished between those who supplied funds and received interest and those who received profit from managerial capabilities.
1934	Joseph Schumpeter -entrepreneur is an innovator and develops untried technology.
1961	David C. McClelland -entrepreneur is an energetic, moderate risk taker.
1964	Peter Drucker -entrepreneur maximizes opportunities.
1975	Albert Shapero -entrepreneur takes initiative, organizes some social and economic mechanisms, and accepts risks of failure.
1980	Karl Vesper -entrepreneur seen differently by economists, psychologists, businesspersons, and politicians
1983	Gifford Pinchot -intrapreneur is an entrepreneur within an already established organization.
1985	Robert D. Hisrich -entrepreneurship is the process of creating something different with value by devoting the necessary time and effort, assuming the accompanying financial, psychological, and social risks, and receiving the resulting rewards of monetary and personal satisfaction.
2008	National Knowledge Commission of India (2008) - Entrepreneurship involves the professional utilisation of knowledge, skills, and competencies to monetise a novel idea. This can be executed by an individual or a group through the establishment of a new enterprise or the diversification of an existing one, distinguishing it from self-employment in a profession or trade. The primary objectives are to foster growth, generate wealth, create employment, and contribute to social welfare.

3.4.2 Different Perspectives on the Definition of 'Entrepreneur'

The fact remains that the term 'entrepreneur' has been defined in many ways and various senses. These views are now for the convenience of understanding broadly classified into three groups, namely, risk-bearer, organizer, and innovator.

Fig.3.1

Different Perspectives on the Definition of 'Entrepreneur'



(Source: InfoDev. (2009). *Business incubation: Definitions and principles*. In *Trainee manual (Training manual)*. World Bank.)

3.4.2 (a) Entrepreneur as Risk-Bearer

Richard Cantillon, an Irishman residing in France, was the first to introduce the term 'entrepreneur' along with his distinctive risk-bearing function in economics during the early 18th century. He characterised an entrepreneur as an agent who acquires factors of production at specific prices to combine them into a product, intending to sell it at uncertain future prices (Cantillon 1971: 2). The author depicted a farmer who disburses contractual payments that are 'certain' to landlords and labourers while selling at prices that are 'uncertain'. He further asserts that merchants similarly engage in making specific payments while anticipating uncertain returns. Consequently, they are fundamentally 'risk-bearing' agents of production.

3.4.2 (b) Entrepreneur as Organizer or Coordinator

Jean-Baptiste Say (1827: 285-286), a French political economist, expanded the concept of the entrepreneur based on his challenging practical experiences, a notion that has persisted for nearly two centuries. His definition links entrepreneurship to the functions of coordination, organisation, and supervision.

3.4.2 (c) Entrepreneur as Innovator

In his seminal work, *Theory of Economic Development*, **Joseph A. Schumpeter (1934: 103)** attributed a pivotal role to 'innovation' in the function of the entrepreneur. Schumpeter viewed economic development as a distinct dynamic change initiated by entrepreneurs through the establishment of new combinations of production factors, which he termed 'innovation'. Schumpeter defines an entrepreneur as a 'creative destructor' who induces dynamic disequilibrium in the economy by transforming innovation into commercialisation within a previously non-existent context.

According to him, innovation, defined as the introduction of new combinations of factors of production, may manifest in one of the following five forms:

- Introduction of a novel product;
- Introduction of an innovative production method;
- Establishment of a new market;
- Identification of a new source for raw material supply; and
- Implementation of a novel organisational structure within any industry.

However, Schumpeter stressed the fact that these attributes unaccompanied by the ability to innovate would not be sufficient to account for entrepreneurship (Gopakumar 1995: 1-17). People start their own businesses for a variety of reasons, such as the desire for personal fulfilment, creative freedom, and financial

independence. While some people are motivated by the need to solve problems and innovate, others are looking for freedom and control over how they combine their personal and professional lives. People are also pushed towards entrepreneurship by economic issues including job insecurity, unemployment, or discontent with regular work. Additionally, entrepreneurship is a desirable option due to the possibility of creating riches and the chance to improve society by creating jobs and launching new goods or services.

3.5 Evolution and concept of entrepreneurship

Entrepreneurship has undergone significant evolution over centuries, shaped by economic, social, and technological changes. Below is a detailed note on the evolution of entrepreneurship, highlighting key phases and the development of its concept.

1. Ancient to Medieval Period (Pre historic to AD1857)

- **Ancient Times:** The earliest form of entrepreneurship can be traced back to traders in ancient civilizations like Mesopotamia, Egypt, and Indus Valley. Merchants who engaged in long-distance trade were the first entrepreneurs, taking risks to exchange goods and services.
- **Middle Ages:** During the medieval period, entrepreneurs were typically merchants and craftsmen. Guilds and trade associations started forming, and entrepreneurship was often tied to the production and sale of goods in local markets.

2. Renaissance and Enlightenment (14th to 18th Century)

- **Renaissance:** The Renaissance period saw a surge in exploration and trade. Entrepreneurs like Marco Polo opened up new trade routes, and the rise of banking in cities like Venice and Florence provided the necessary financial infrastructure.
- **Enlightenment:** The Enlightenment period brought about intellectual and technological advancements. The concept of the entrepreneur started to

evolve, with Richard Cantillon (1755) being one of the first to define entrepreneurship as bearing risk and uncertainty in the pursuit of profit.

3. Industrial Revolution (18th to 19th Century)

- **Early Industrial Revolution:** The Industrial Revolution marked a significant shift. Entrepreneurs were now industrialists and inventors who built factories and mass-produced goods. Notable figures include James Watt (steam engine) and Eli Whitney (cotton gin).
- **Late Industrial Revolution:** The rise of corporations and joint-stock companies changed the landscape. Entrepreneurs like Andrew Carnegie (steel) and John D. Rockefeller (oil) built vast industrial empires.

4. 20th Century to Present

- **Early 20th Century:** The concept of entrepreneurship expanded to include innovation and new business models. Joseph Schumpeter (1934) introduced the idea of the entrepreneur as an innovator who disrupts markets and creates economic growth.
- **Post-WWII Era:** Entrepreneurship became associated with the rise of technology and small businesses. The Silicon Valley boom of the 1970s and 1980s, led by entrepreneurs like Steve Jobs (Apple) and Bill Gates (Microsoft), revolutionized the tech industry.
- **Late 20th Century:** The global economy saw a rise in entrepreneurial activity with the advent of the internet. Entrepreneurs like Jeff Bezos (Amazon) and Elon Musk (Tesla, SpaceX) became iconic figures.

5. 21st Century

- **Digital Age:** Entrepreneurship today is characterized by digital innovation, globalization, and social entrepreneurship. The rise of startups and venture capital has fostered an environment where entrepreneurs can rapidly scale

their businesses. The gig economy and platforms like Uber and Airbnb exemplify modern entrepreneurship.

- **Social and Environmental Focus:** There's a growing trend towards social entrepreneurship, where businesses aim to solve social and environmental problems while being profitable. This reflects a shift in the role of entrepreneurship from purely profit-driven to impact-driven.

Table 3.3

Time Chart of Entrepreneurship Evolution

Period	Key Features
Ancient Times	Traders, Merchants, Artisans
Middle Ages	Guilds, Local Craftsmen, Market Traders
Renaissance (14th-17th)	Explorers, Early Bankers
Enlightenment (17th-18th)	Intellectual advancements
Industrial Revolution (18th-19th)	Industrialists
Early 20th Century	Innovators, Small Businesses
Post-WWII Era	Technology Entrepreneurs
Late 20th Century	Internet Entrepreneurs
21st Century	Digital Innovation, Social Entrepreneurship

3.5.1 Entrepreneurship: Definition, Characteristics, and Theoretical Perspectives

Entrepreneurship involves the creation, development, and management of new business ventures. It is characterized by:

1. **Innovation:** Introducing new products, services, or processes.

2. **Risk-taking:** Entrepreneurs bear financial and personal risks.
3. **Proactivity:** Identifying and exploiting opportunities.
4. **Value Creation:** Creating economic, social, or environmental value.
5. **Resource Management:** Efficiently utilizing resources to achieve business goals.

Entrepreneurship plays a crucial role in economic development by driving innovation, creating jobs, and fostering competition. It is a dynamic field that continues to evolve with changes in technology, market demands, and societal needs.

Joseph Schumpeter: "Entrepreneurship is the process of creating new combinations that lead to new products, processes, markets, or organizational forms. Entrepreneurs are innovators who drive economic growth by disrupting the market." (Schumpeter, J. A., *The Theory of Economic Development*, 1934).

Peter Drucker: "Entrepreneurship is the systematic and professional application of innovation to create new opportunities for businesses, industries, and economies." (Drucker, P. F., *Innovation and Entrepreneurship: Practice and Principles*, 1985).

Richard Cantillon: "An entrepreneur is someone who engages in exchanges for profit, bearing the risk of the venture." (Cantillon, R., *Essai sur la Nature du Commerce en Général*, 1755).

Jean-Baptiste Say: "The entrepreneur shifts economic resources out of an area of lower and into an area of higher productivity and greater yield." (Say, J. B., *A Treatise on Political Economy*, 1803).

Israel Kirzner: "Entrepreneurship is the act of recognizing and acting upon opportunities overlooked by others." (Kirzner, I. M., *Competition and Entrepreneurship*, 1973).

Frank Knight: "Entrepreneurship is about dealing with uncertainty and risk. Entrepreneurs make decisions in situations where the probability of outcomes is not known." (Knight, F. H., *Risk, Uncertainty, and Profit*, 1921).

Howard Stevenson: "Entrepreneurship is the pursuit of opportunity without regard to resources currently controlled." (Stevenson, H. H., & Jarillo, J. C., "A Paradigm of Entrepreneurship: Entrepreneurial Management", *Strategic Management Journal*, 1990).

3.5.2 Entrepreneurship vs Entrepreneurship Development.

The process of launching and operating a new company, known as entrepreneurship, usually entails creativity, taking calculated risks, and trying to turn a profit. It focuses on the actions of individuals (entrepreneurs) who identify opportunities, create new products or services, and bring them to market. Entrepreneurship Development is the process of enhancing the skills, knowledge, and capabilities of individuals to become successful entrepreneurs. It involves structured programs, training, and support systems. It focuses on creating an enabling environment that supports the growth and development of entrepreneurs.

3.5.3 Entrepreneurship Development

Entrepreneurship Development refers to the process of enhancing the skills, knowledge, and abilities of individuals to identify opportunities, take risks, and establish and grow new businesses. It involves various initiatives aimed at fostering an entrepreneurial mindset.

According to **UNIDO (United Nations Industrial Development Organization)**, Entrepreneurship Development involves the process of improving the skills and knowledge of entrepreneurs through various methods, such as training programs and classroom sessions, and the support of existing business support organizations.

The **World Bank** defines Entrepreneurship Development as the process of stimulating entrepreneurial activity, creating a conducive environment for

entrepreneurship, and supporting the creation and growth of new enterprises through access to finance, training, and advisory services.

Peter Drucker describes entrepreneurship as "the systematic and professional application of innovation to create new opportunities for businesses, industries, and economies.

Schumpeter defines entrepreneurship as the process of identifying and exploiting new opportunities in the market, which leads to the creation of new products, services, or processes. Entrepreneurship Development, therefore, involves fostering the skills and mindset needed to undertake such innovative activities.

The process of enhancing entrepreneurs' abilities and expertise through organised training and institution-building initiatives is referred to as entrepreneurship development, according to the **Ministry of Skill Development and Entrepreneurship**. The objective is to help the establishment and expansion of businesses, encourage innovation, and cultivate an entrepreneurial culture.

NIESBUD (National Institute for Entrepreneurship and Small Business Development) defines entrepreneurship development as a means to equip individuals with the skills, knowledge, and attitude required to identify opportunities, take calculated risks, and develop successful business ventures. The focus is on creating a supportive ecosystem that enables the growth and sustainability of small businesses.

SIDBI (Small Industries Development Bank of India) defines entrepreneurship development as a comprehensive approach to nurturing the entrepreneurial spirit among individuals, particularly in the MSME (Micro, Small, and Medium Enterprises) sector. This involves providing access to finance, training, mentoring, and support services to foster the growth and development of enterprises.

Startup India, defines entrepreneurship development as a series of initiatives aimed at promoting and supporting the establishment of new startups and businesses. This includes providing regulatory support, easing compliance, offering tax benefits, and facilitating access to funding and networking opportunities.

The NSDC (National Skill Development Corporation) describes entrepreneurship development as the process of enhancing entrepreneurial skills and knowledge through structured training programs, workshops, and hands-on learning experiences. The objective is to encourage self-employment and the creation of job opportunities through the establishment of new businesses.

An inventor is someone who comes upon fresh ideas and materials. And an innovator makes fresh combinations using ideas and discoveries. Schumpeter maintained that the entrepreneur might or might not be the innovator and similarly might or might not be the source of capital. The main distinction between the inventor and the innovator is that the former generates ideas, the latter gets those ideas realised. This contrast resembles the one between "discovery" and "exploitation". Discovery is the realisation of the possible worth of found idea or insight; it is the application of knowledge and insight. Mostly based on the Schumpeterian idea of entrepreneurship, current entrepreneurial endeavours

The post- Schumpeterian thinking on entrepreneurship has proceeded along two major but different themes: the Harvard Tradition and the neo-Australian School. The former is an extension of the Schumpeterian view, while the latter is represented as an alternative approach (Kanungo 1998: 21-22). According to the Harvard School approach, entrepreneurship comprises any purposeful activity that initiates, maintains or develops a profit-oriented business or with the economic, political and social circumstances surrounding the business (Cole 1949: 85-107) Another expression of the Harvard tradition stresses on actions like searching and analysing economic possibilities, mobilising resources needed for production, linking markets and extending the business (Leibenstein 1968:75). Conversely, the neo-Australian School underlined on instability as the essential condition for the emergence and evolution of entrepreneur.

According to Kirzner (1979), an entrepreneur is the arbitrageur who discovers opportunity at low prices and sells the same items at high prices because of inter-temporal and inter-spatial demands.

The National Knowledge Commission (NKC 2008: 1) of India offers the most latest and real definition of entrepreneurship specifically with relation to India. The NKC has defined entrepreneurship as "the professional application of knowledge, skills and competencies and/or of monetizing a new idea, by an individual or a set of people by launching an enterprise de novo or diversifying from an existing one (distinct from seeking self-employment as in a profession or trade), thus, to pursue growth while generating wealth, employment and social good."

3.5.4 Why do people become Entrepreneurs?

People create their own businesses mostly for three reasons: they want to be their own boss, follow their own ideas, and seek financial benefits.

Be their boss personally:

Many business owners aspire to be their own boss either they have always wanted to run their own company or they have become annoyed working in conventional employment. The founder of Very Wendy, a business creating personalised party invitations, Wendy DeFeudis said

- "I always wanted to be my own boss. I felt confined by the corporate structure. I found it frustrating and a complete waste of time—a waste to have to sell my ideas to multiple people and attend all kinds of internal meetings before moving forward with a concept".

Follow their own ideals:

The second reason people launch their own companies is to follow their own ideals. People invest a lot of time and money to turn a concept into a part-time or full-time company if it is sufficiently feasible to finance a company. When their entrepreneurial idea takes off and they observe the good effects it generates, many business owners feel great satisfaction. Seek financial benefits.

Pursue Financial Rewards:

Some people are alert by nature; when they identify concepts for fresh goods or services, they want to see those ideas come to pass. People launch businesses to

seek financial gains. But usually secondary to the previous two, this drive falls short of the expectations. The typical entrepreneur earns less than someone working a conventional job with a comparable degree of responsibility. The upside possibility of entrepreneurship is its financial attraction. Building their companies, individuals including Jeff Bezos of Amazon.com, Mark Zuckerberg of Facebook, Larry Page and Sergey Brin of Google made billions of dollars. One unifier as well is money.

The GEM Adult Population Survey (APS) examines social attitudes regarding entrepreneurship as well as the traits, motives, and aspirations of people launching firms. The GEM APS lists four reasons one should launch a business.

The four mentioned reasons are:

1. To change the world;
2. To create enormous wealth or extremely high income;
3. To carry on a family legacy;
4. To make a livelihood since employment are few.

3.5.5 Entrepreneurship in India

Over the course of centuries, cultural, economic, and policy shifts have shaped the evolution of entrepreneurship in India. Merchant guilds and family-run businesses, including those engaged in trade, handicrafts, and agriculture, have historically dominated Indian business activity. Because of colonial regulations that favoured British industry, entrepreneurship was restricted during British administration.

The history of entrepreneurship in India can be traced back to the pre-independence era, where traditional trades and cottage industries were prevalent. Indian entrepreneurs have long been involved in sectors like textiles, handicrafts, and small-scale industries, which played a crucial role in the economy. Post-independence, the Indian government pursued a state-led industrialization strategy, focusing on the establishment of public sector enterprises. This period saw limited

private entrepreneurship, with the state playing a dominant role in economic activities. However, the scenario began to change in the 1980s, with the liberalization policies initiated by the Indian government, which culminated in the economic reforms of 1991.

India's economy was mostly under state control after gaining independence in 1947, but in 1991, liberalisation expanded markets and attracted foreign investment and private enterprise. The economic liberalization of 1991 marked a significant turning point in the history of entrepreneurship in India. The opening up of the economy to global markets, reduction in trade barriers, and deregulation created a conducive environment for private enterprises to flourish. The Micro, Small, and Medium Enterprises (MSME) sector, in particular, saw significant growth, contributing to employment and economic output. But the rise of industrialists like Birla and Tata laid the groundwork for contemporary Indian business. Indian business houses, such as Tata, Birla, and Reliance, played a pivotal role in this transformation, expanding their operations domestically and globally.

Startups and innovation-driven companies, especially in the fields of IT, biotechnology, and e-commerce, flourished as a result. With the help of government programs like Startup India, a burgeoning venture capital ecosystem, and digital revolution, India is now a global centre for entrepreneurship. India's economic destiny is being shaped by the thriving entrepreneurial scene.

3.5.6 Entrepreneurship in Kerala

Kerala has a rich history of entrepreneurship, dating back to its traditional industries such as coir, cashew, and spices, which have been integral to its economy for centuries. The state's strategic location along the Malabar Coast made it a hub for trade and commerce, attracting merchants from across the world. This early exposure to global trade laid the foundation for a strong entrepreneurial culture in Kerala. However, the industrialization of Kerala post-independence was largely driven by state enterprises and cooperative movements, which focused on social equity and employment generation rather than pure profit motives.

In the contemporary period, Kerala's economy has diversified, with the service sector, particularly tourism, information technology, and healthcare, becoming significant contributors to entrepreneurship. The state government has played an active role in promoting entrepreneurship through various initiatives, including the establishment of Kerala Startup Mission, Technopark, and Infopark. These initiatives have provided the necessary infrastructure, funding, and mentorship to budding entrepreneurs, enabling them to launch and scale their ventures.

Kerala's entrepreneurial ecosystem is unique, shaped by its high literacy rate, skilled labor force, and strong remittance economy, largely driven by the Gulf diaspora. The remittances have provided the initial capital for many entrepreneurial ventures in the state. However, entrepreneurs in Kerala face challenges, including infrastructure bottlenecks, high labor costs, and regulatory complexities. Despite these challenges, Kerala continues to be a vibrant hub for social entrepreneurship, with many ventures focusing on education, health, and social services, reflecting the state's commitment to inclusive growth.

3.6 Startup

Promoting entrepreneurship in the form of startups is a policy action that is accorded great significance around the world. A startup company is a newly established business that is typically characterized by innovation, a focus on scalable business models, and a high potential for growth. These companies are often founded by entrepreneurs or a group of individuals who aim to bring a unique product, service, or technology to the market. Startups are characterized by their dynamic and fast-paced nature, as well as a willingness to take risks and disrupt existing industries.

Key features of start-ups include:

1. **Innovation:** Start-ups often bring new and innovative ideas to the market. They may introduce novel products, services, or business models that have the potential to solve problems or meet needs in a unique way.

2. **High Growth Potential:** Start-ups typically aim for rapid growth and scalability. They seek to expand their operations, customer base, and market presence quickly to capture a significant share of their target market.
3. **Risk-Taking:** Startups are willing to take risks, as they often operate in uncertain environments. This risk-taking mentality is essential for experimenting with new ideas and adapting to market feedback.
4. **Limited Initial Funding:** Many startups begin with limited financial resources and may seek funding from venture capitalists, angel investors, or other sources to fuel their growth and development.
5. **Focus on Technology:** While not all startups are technology-driven, many leverage technology to create innovative solutions or disrupt traditional industries. Tech startups, in particular, often develop software, apps, or other tech-based products.
6. **Entrepreneurial Culture:** Startups typically foster an entrepreneurial culture that encourages creativity, flexibility, and a willingness to learn from failures. The work environment in startups is often characterized by collaboration, agility, and a hands-on approach.

Government order G.O.(Rt)No.43/2019/ITD dt 26.02.2019, which relates to the updated startup definition by the Government of India, was issued by the Government of Kerala, which has been following the Startup Definition as defined by the Government of India.

1. For up to ten years following the date of incorporation or registration in India, if it is a private limited company as defined by the Companies Act, 2013; if it is registered as a partnership firm under section 59 of the Partnership Act, 1932; or if it is registered as a limited liability partnership under the Limited Liability Partnership Act, 2018.
2. Since incorporation or registration, the entity's turnover for any given fiscal year has not surpassed one hundred crore rupees.

3. The organisation is pursuing innovation, development, or enhancement of goods, procedures, or services; also, it is determining whether the business model is scalable and has a high potential for creating jobs or income.

3.6.1 Growth of Startups in India

In recent years, India has witnessed a remarkable growth in its startup ecosystem, with cities like Bengaluru, Hyderabad, Mumbai, and Delhi NCR emerging as major entrepreneurial hubs. Government initiatives like *Startup India*, *Digital India*, and *Make in India* have further bolstered the entrepreneurial spirit, providing support through policies, funding, and infrastructure. However, entrepreneurs in India continue to face challenges, including access to finance, regulatory hurdles, and market access. The venture capital and angel investment landscape, though growing, is still nascent compared to global standards. The COVID-19 pandemic has also posed significant challenges, disrupting supply chains and market dynamics, but it has also led to the emergence of new opportunities, particularly in the digital and technology sectors.

Table 3.4
Growth of Startups in India (2010-2024)

Year	Number of Startups	Total Funding (in USD Billion)	Major Startup Hubs (Cities)	Notable Startups Launched
2010	5000	0.5	Bengaluru, Delhi, Mumbai	Flipkart, Zomato
2013	8000	1.2	Bengaluru, Hyderabad, Pune	Ola, Paytm
2016	12500	3.5	Bengaluru, Delhi, Hyderabad	Byju's, OYO
2019	23000	7.8	Bengaluru, Mumbai, Delhi NCR	Swiggy, Udaan
2022	50000	11.3	Bengaluru, Hyderabad, Mumbai	Razorpay, CRED
2024	159000	14.4	Bengaluru, Mumbai, Delhi NCR, Hyderabad, Pune, Chennai	Zepto, Jivi, Jio Brain

Source: Startup India Report (2023); Nasscom Startup Ecosystem Report (2022) Department for Promotion of Industry and Internal Trade (DPIIT) report 2025

3.6.2 Growth of Startups in Kerala

Over the past decade, Kerala's startup ecosystem has experienced remarkable development, which has been fuelled by a thriving entrepreneurial culture, government support, and innovation. The number of businesses has increased from 200 in 2015 to over 5,000 by 2024, with a total funding increase from \$5 million to \$101 million. Kochi and Thiruvananthapuram have become significant startup centres, promoting innovative ventures in a variety of industries. Kerala's increasing prominence in the Indian startup landscape is evidenced by the national and global recognition of notable startups such as Genrobotics, SurveySparrow, ZappyHire, and CareStack.

Table 3.5
Growth of Startups in Kerala (2015-2024)

Year	Number of Startups	Total Funding (in USD Million)	Major Startup Hubs (Cities)	Notable Startups Launched
2015	200	5	Kochi, Thiruvananthapuram	Genrobotics, Agrima
2017	500	15	Kochi, Kozhikode	IppoPay, SurveySparrow
2019	800	35	Kochi, Thiruvananthapuram	Inntot, FlockForge
2021	1200	50	Kochi, Thiruvananthapuram	ZappyHire, Faya Innovations
2022	2800	75	Kochi, Thiruvananthapuram	CareStack, Toonz Media Group
2024	5015	101	Kochi, Thiruvananthapuram	Fuselage Innovations Pvt Ltd, Qudrat, Wizr AI, Zettfly Aviation (Air Kerala)

Source: Kerala Startup Mission (2024); Kerala State Planning Board (2023), Startup Energy Transition – SET 100 List 2025

According to the results of the fourth annual Startup rankings, Kerala emerged as the top performing state in 2024. The state's startup sector has accomplished its greatest feat with this. Startup India, which is part of the Ministry of Commerce and Industry, is responsible for the rating. The government of Kerala

is much ahead of the curve when it comes to assisting companies beyond incubation with programs like innovation grants, rent subsidies, and business-to-government (B2G) connections. But the startup founders we spoke to for this article are staunch believers that KSUM should be the catalyst for greater public-private partnerships with local and foreign businesses. Quite a few Kerala-based startups made waves in 2024 notably:

Engagespot: A Thiruvananthapuram-based startup, Engagespot became the first from Kerala to join the prestigious Techstars New York City Accelerator Program.

Interval Learning: An online learning platform headquartered in Areekode, Kerala, Interval Learning expanded its services to over 40,000 students across more than 150 cities worldwide. In 2023, it was acknowledged by India's Finance Minister, Nirmala Sitharaman.

Air Kerala: In July 2024, Zettfly Aviation, a private entity, obtained a No Objection Certificate (NOC) from the Ministry of Civil Aviation to conduct scheduled commuter air transport services under the brand Air Kerala. This initiative aims to be the first regional airline based in Kerala, with plans to commence operations in 2025.

These developments highlight Kerala's growing startup ecosystem and its contributions to various sectors in 2024.

3.7 Process of Innovation

Innovation is referred to as the introduction of a new quality of a thing or a new product, market, method of production, source of supply, or industry organisation. The most promising aspect of the innovation process is the ability to transform an idea into a successful concept. Entrepreneurship and startups are distinguished by their emphasis on innovation.

3.8 Business Incubation Centres

A Business Incubation Centre (BIC) is an entity that assists startups and nascent enterprises by offering vital resources, guidance, and services to facilitate

their development and success. These centres seek to mitigate the risks of initiating a new enterprise by providing a systematic environment that includes access to capital, office facilities, networking prospects, and business development assistance.

Business incubation centres are critical institutions that support the growth of early-stage startups by providing essential resources such as infrastructure, mentorship, access to finance, and networking opportunities. The concept of business incubation has its roots in the United States, where the first incubators were established in the 1950s to support small businesses. Over the decades, the incubation model has evolved and spread globally, with various countries adopting different approaches to suit their local entrepreneurial ecosystems.

In India, the growth of business incubation centres has been driven by both government initiatives and private sector involvement. The formation of the National Science & Technology Entrepreneurship Development Board (NSTEDB) and the Indian Institute of Technology (IIT) incubators in the 1980s signified the initiation of structured incubation initiatives in the nation.

Today, India is home to over 500 incubation centres, supported by both government schemes such as *Startup India* and private sector initiatives. These centres have played a pivotal role in the success of several Indian startups, providing them with the necessary support to navigate the challenges of the early stages of their ventures.

Kerala has been at the forefront of the incubation movement in India, with the Kerala Startup Mission (KSUM) leading the way. KSUM operates several incubation centres across the state, offering a range of services to startups, including seed funding, mentorship, and market access. The success of these centres can be seen in the number of startups that have emerged from Kerala and gone on to achieve national and international recognition. However, challenges remain, including the need for better infrastructure, more significant funding opportunities, and a more robust network of mentors and industry experts.

Table: 3.6

Number of Incubation Centres in India and Kerala (2010-2024)

Year	India	Kerala
2010	50	5
2013	120	12
2016	250	25
2019	400	35
2022	632	63
2024	745	68

Source: National Science & Technology Entrepreneurship Development Board (2022); website of Kerala Startup Mission (2024), Kerala Startup Ecosystem Report (2022)

3.9 Legal Framework of Entrepreneurship and Incubation in India

The legal and regulatory framework governing entrepreneurship in India is complex, involving various laws, regulations, and government policies. The Companies Act, 2013, is the primary legislation governing the incorporation, functioning, and regulation of companies in India. It provides the legal foundation for all corporate entities, including startups. In addition to the Companies Act, the Micro, Small and Medium Enterprises Development (MSMED) Act, 2006, provides a legal framework for the MSME sector, which is a significant part of India's entrepreneurial ecosystem.

For startups, specific policies and regulations have been introduced to create a conducive environment for growth. The Startup India initiative, launched in 2016, provides several benefits to startups, including tax exemptions, simplified compliance, and access to funding. Intellectual property rights (IPR) protection is another critical area, with the government offering various incentives and support mechanisms for startups to protect their innovations.

The legal framework for incubation centres in India is still evolving. While there are no specific laws governing the establishment and operation of incubation

centres, various guidelines and policies have been issued by government bodies such as the Department for Promotion of Industry and Internal Trade (DPIIT) and the National Science & Technology Entrepreneurship Development Board (NSTEDB). These guidelines provide a framework for the establishment of incubation centres, outlining the roles and responsibilities of incubators, the services they should offer, and the compliance requirements they must adhere to.

The legal framework in India for business incubation centres is shaped by a combination of national policies, acts, and government initiatives designed to promote entrepreneurship and innovation.

1. **Companies Act, 2013 – Section 8 Companies:**

Many incubation centres are registered as Section 8 companies under the Companies Act, 2013. These are non-profit entities with the objective of promoting commerce, art, science, sports, education, research, social welfare, or other similar activities. This legal structure allows them to operate with certain tax exemptions and more relaxed regulatory requirements

2. **Startup India Initiative:**

Launched in 2016 by the Government of India, this initiative provides a comprehensive framework to support the growth of startups, including incubation centres. Key features include tax exemptions for eligible startups, relaxation in public procurement norms, and access to government funds through the Fund of Funds for Startups (FFS).

3. **National Innovation and Startup Policy 2019:**

This policy encourages higher education institutions to set up incubation centres to foster innovation and entrepreneurship among students and faculty. It outlines guidelines for establishing these centres, ensuring that they are well-integrated into the academic ecosystem.

4. Ministry of Micro, Small, and Medium Enterprises (MSME):

The MSME Ministry supports incubation activities through various schemes, including the ASPIRE scheme, which provides financial assistance for setting up incubation centres in rural and agricultural sectors.

5. Technology Incubation and Development of Entrepreneurs (TIDE) 2.0:

Administered by the Ministry of Electronics and Information Technology (MeitY), TIDE 2.0 supports technology-based startups by providing them with incubation services, financial support, and access to specialized technology infrastructure.

Sources:

- *Government of India. (2013). The Companies Act, 2013. Ministry of Corporate Affairs.*
- *Government of India. (2006). The Micro, Small and Medium Enterprises Development (MSMED) Act, 2006. Ministry of Micro, Small and Medium Enterprises.*
- *Department for Promotion of Industry and Internal Trade (DPIIT). (2016). Startup India Action Plan. Government of India.*

3.10 Legal Framework of Entrepreneurship and Incubation in Kerala

Kerala has developed a unique legal and regulatory framework to promote entrepreneurship and incubation in the state. The Kerala Industrial & Commercial Policy 2018 outlines the state government's vision for industrial development, focusing on promoting entrepreneurship, attracting investment, and creating jobs. The policy provides various incentives for startups, including tax exemptions, subsidies, and simplified regulatory procedures.

The Kerala Startup Mission (KSUM) plays a central role in implementing the state's policies on entrepreneurship and incubation. KSUM operates under the Department of Information Technology, Government of Kerala, and is responsible

for establishing and managing incubation centres, providing funding and mentorship to startups, and promoting a culture of innovation in the state. The legal framework governing KSUM and its activities is defined by various state government orders and notifications, which outline the roles, responsibilities, and powers of KSUM.

Kerala's legal framework for startups also includes provisions for protecting intellectual property rights, with the state offering support for patent filing and other IPR-related activities. In addition, the Kerala State Planning Board and other state agencies have introduced various schemes and programs to support entrepreneurs, including those focused on specific sectors

Kerala, as a state, has developed a robust legal and policy framework to support the establishment and operation of business incubation centres.

1. Kerala Startup Mission (KSUM):

KSUM serves as the primary organisation of the Government of Kerala dedicated to encouraging entrepreneurship and facilitating incubation initiatives within the state. It offers various forms of support, including seed funding, mentoring, and infrastructure, to startups. The mission also implements various state and central government policies related to startup incubation.

2. Kerala Technology Innovation Zone (KTIZ):

KTIZ is a dedicated facility developed by KSUM that provides world-class infrastructure for startups. The zone houses multiple incubators focused on different sectors such as biotechnology, electronics, and information technology. The legal framework for KTIZ allows for the streamlined registration and operation of startups within this zone.

3. Kerala State Self Entrepreneur Development Mission (KSSEDM):

This mission is designed to promote self-employment through entrepreneurship by providing financial and infrastructural support to startups. KSSEDM's legal framework includes provisions for setting up incubation centres across the state, particularly in rural areas, to encourage local entrepreneurship.

4. State Startup Policy:

Kerala's State Startup Policy provides a detailed framework for establishing and operating incubation centres within the state. It includes guidelines for funding, mentoring, and infrastructure support, aiming to create a conducive environment for startups to flourish. The policy also aligns with national initiatives like Startup India to ensure consistency and coherence in the startup ecosystem.

5. Incubation Scheme for Startups in Technology Domains:

Supported by the Kerala Startup Mission, this scheme provides financial assistance to incubators specializing in technology domains. The legal framework governing this scheme ensures that startups in cutting-edge fields such as artificial intelligence, robotics, and biotechnology receive the necessary support to develop and scale their businesses such as IT, biotechnology, and tourism.

Sources:

- *Government of Kerala. (2018). Kerala Industrial & Commercial Policy 2018. Department of Industries and Commerce.*
- *Kerala Startup Mission. (2021). Annual Report 2020-2021. Kerala Startup Mission.*
- *Kerala State Planning Board. (2020). Economic Review 2019. Government of Kerala.*

3.11 Business Incubation Centres: Role, Definition, and Process

A Business Incubation Centre (BIC) is an organization or a facility designed to support the successful development of entrepreneurial companies through an array of business support resources and services. These centres provide startups and early-stage businesses with a range of services including physical space, capital, coaching, common services, and networking connections. The goal is to help these businesses grow and succeed during their early stages when they are most

vulnerable businesses in overcoming the challenges typically faced in their early stages, such as limited resources, lack of business experience, and market access.

Business incubation represents a structured process, whether public or private, aimed at fostering entrepreneurial, economic, and social development. It is designed to support businesses from the initial stages of idea generation through to the establishment of start-up companies. This process includes a comprehensive support program that facilitates their growth and enhances their chances of success.

A **business incubator** serves as a designated physical space or facility that facilitates the process of business incubation.

National Business Incubation Association (NBIA) of the United States of America (US) defines business incubation as “Business incubators nurture the development of entrepreneurial companies, helping them survive and grow during the start-up period, when they are most vulnerable. Their programs provide client companies with business support services and resources tailored to young firms. The most common goals of incubation programs are creating jobs in a community, enhancing a community’s entrepreneurial climate, retaining businesses in a community, building or accelerating growth in a local industry and diversifying local economies”

Business incubation helps growth-oriented, early-stage companies grow. The process supports entrepreneurs during business startup. This ecosystem should lower startup costs, boost entrepreneur confidence, and connect them to the resources needed to establish and develop a competitive business. Entrepreneurs at the business incubator stay until a sales revenue or profitability milestone is met. One of the ways to promote innovative business creation and growth is business incubation. Alternative intermediaries include company development service providers and technology parks.

Fig 3. 2 compares business incubation to various supplementary vehicles.

Fig 3.2
Business Incubators, business development service providers and technology parks

	BUSINESS DEVELOPMENT SERVICE PROVIDERS	BUSINESS INCUBATORS	TECHNOLOGY PARKS
TARGET ENTERPRISES	Any SME	Early-stage enterprises with high growth potential	Emerging and established technology businesses
KEY FEATURES	<ul style="list-style-type: none"> • Ad hoc, demand-driven assistance. • Focused on a particular issue for which the entrepreneur asks for assistance. • Usually broad business support, including training and advisory services. 	<ul style="list-style-type: none"> • Emphasis on co-location and the "cluster" effect between enterprises. • Ongoing supply and demand-driven assistance until an agreed upon performance milestone has been reached. • Integrated mix of intensive strategic and operational support focused on the enterprise in its entirety. 	<ul style="list-style-type: none"> • Emphasis on co-location and the "cluster" effect between enterprises. • Demand-driven assistance. • Emphasis on provision of state-of-the-art real estate, office space, and research facilities and networking opportunities.
REVENUE SOURCES	Government / donor subsidies, fee-for-service	Government/ donor subsidies, fee-for-service, rent, royalties, equity	Government/ donor subsidies, fee-for-service, rent, royalties, equity
BUSINESS MODEL	Non-profit or profit-making		

(Source: InfoDev. (2009). *Business incubation: Definitions and principles*. In *Trainee manual (Training manual)*. World Bank.)

3.12 The History of Business Incubation

The field of business incubation is relatively new. According to Wikipedia's definition of "business incubator," the Batavia Industrial Centre in 1959 marked the beginning of the practice in New York State, USA. More precisely, if we use the modern definition of a company incubator, the Batavia Industrial Centre was the first to be established. But if we look at the "systematic" methods that business

incubators use to run their operations, these most likely originated in the 1970s or early 1980s. The practice of business incubation has expanded globally since then. Incubators started to give their incubatees more comprehensive support and a wider range of services. Based on the development of their services, the table below shows three generations of incubators. Over time, business incubators become more proactive and service-oriented, as the table illustrates. One should bear in mind when examining this table that the applicability of various incubator generations varies depending on the region and function of the particular incubator. Therefore, the table does not imply that third-generation incubators should be the only ones in operation today. Conversely, second-generation incubators are still capable of achieving success.

Fig 3.3

Generations of Incubators

GENERATION	DESCRIPTION OF SERVICES
1ST GENERATION	<ul style="list-style-type: none"> • Office rental and shared office services • Reactive business support
2ND GENERATION	<ul style="list-style-type: none"> • 1st Generation Services plus • Proactive business support • Business coaching and mentoring
3RD GENERATION	<ul style="list-style-type: none"> • 1st and 2nd Generation Services plus • In-house debt/ equity finance for clients • Channels to external financiers • Partnering with other businesses in order to achieve critical mass for procurement contracts, products, and services

(Source: InfoDev. (2009). Business incubation: Definitions and principles. In Trainee manual (Training manual). World Bank.)

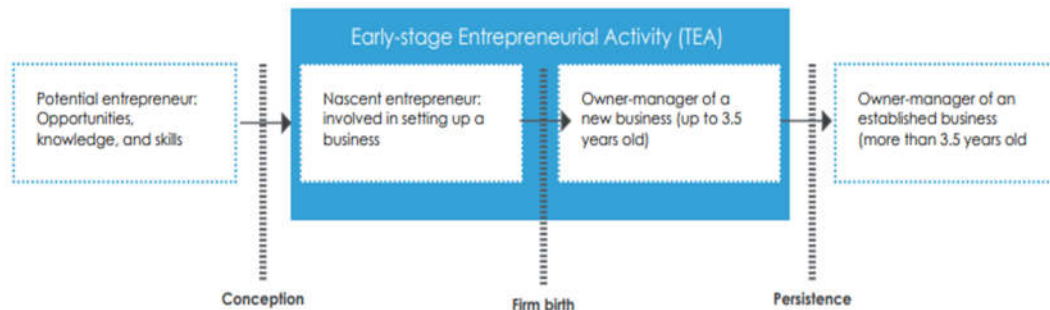
The definitions of business incubation are significantly different from country to country, and information flows are uneven. Consequently, the global incubator count is provisional and based on estimates. Nearly 7000 incubators of diverse varieties were in operation worldwide as of October 2006. Nearly 1400 of these were located in North America, with 1115 in the United States, 191 in Mexico,

and 120 in Canada. The remaining 1000 were in Europe, with 370 in Germany, 400 in China, 355 in Korea, 265 in Japan, and 220 in the United Kingdom. The remainder are located in other regions of the globe. India has approximately 120 incubators, 40 of which are Science and Technology Entrepreneurs' Parks (STEP). The first business incubator was established in 1959 in an abandoned Massey Ferguson manufacturing facility in Batavia, United States. Business incubators were originally developed in the United States. Between 1985 and 1995, a variety of initiatives were implemented to fortify the incubation movement, which subsequently developed into an ecosystem that encompassed a wide range of models, including both public and private incubators. An increasing role was played by business incubation in the economic development of Canada. In 2005, there were over 83 business incubators that were operational and generated a total of over \$45 million in revenue. Within them, 900 client enterprises generated over \$93 million in revenue and employed over 13,000 individuals in both full-time and part-time roles. In addition, China has a well-developed incubation market space, with the government playing a predominant role in order to meet its objective of high-technology-driven economic growth. While the incubation model was only introduced in the late 1980s to facilitate the establishment of small businesses, it has successfully developed approximately 400 variants in a relatively brief period. These incubators have facilitated the re-entry of scholars abroad, developed entrepreneurial attitudes, and helped bridge the gap between research and the marketplace. In the period between 2002 and 2006, the number of client enterprises grew from 20,993 to 4,143, and their real value contributed climbed from 41 billion to 133 billion Yuan (at the 2000 price).

Business incubation is applicable at the “early-stage entrepreneurial activity” stage of enterprise development, as represented by Figure 3.3 developed by the Global Entrepreneurship Monitor (GEM). At this stage, the entrepreneur has transformed their idea into a business.

Figure 3.4

Stages of enterprise development



(Source: InfoDev. (2009). *Business incubation: Definitions and principles*. In *Trainee manual (Training manual)*. World Bank.)

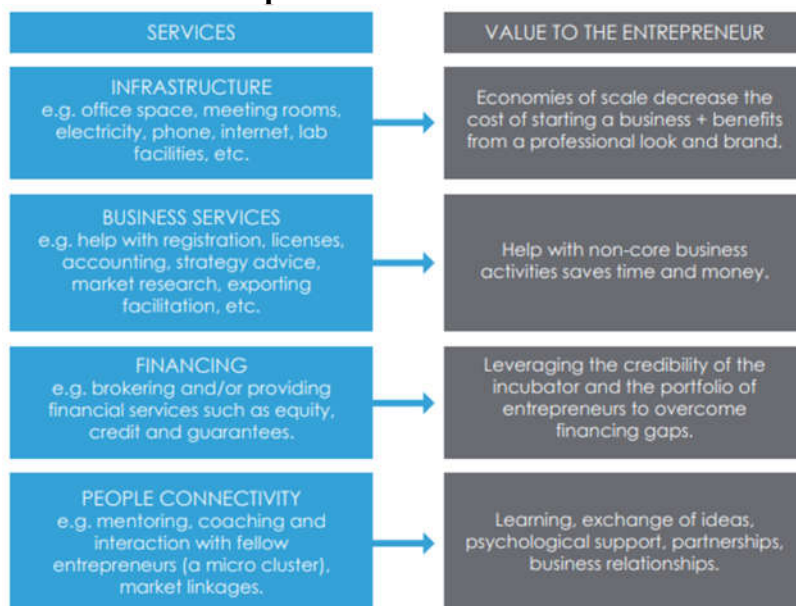
The purpose of incubation is to help early-stage entrepreneurs attain their company's full potential so that they can graduate from the program once they've reached a certain level of maturity. As a company goes through incubation, the level of support it receives from the incubator changes to meet its changing demands.

3.13 Basic components of Business incubation

Business incubation has four basic components as shown in Figure 3.4

Figure 3.5

Basic components of Business incubation



(Source: InfoDev. (2009). *Business incubation: Definitions and principles*. In *Trainee manual (Training manual)*. World Bank.)

3.14 Elements of Incubation

There are several elements of incubation that are critical to achieving a successful incubator. Some of these have already been covered in Component 1, although you will find them presented again in more detail. Trainees should keep in mind that these elements should be considered and adjusted to fit well within the incubator's operations.

1. Entry/ Selection and Exit/ Graduation

Incubation requires time, energy, and resources. So, incubators must carefully choose which startups to incubate. Incubators should choose startups that satisfy their goals and criteria. Incubatees should be chosen with the intent, understanding, and belief that their business will thrive and graduate from the incubator. Incubation guides them from idea to graduation. The incubator's selection criteria may vary, however not-for-profit incubators always aim for graduation. Defining an early road map to graduation and selecting start-ups ready and able to achieve it with incubator help is crucial. Since companies in different industries have varied development rates, the incubation process should be tailored to each client's sector and market. Successful incubatees should have post-incubation space to stay connected to the incubator community that helped them flourish. Undergraduate incubatees can also interact with successful enterprises in comparable industries in post-incubation space.

Fig 3.6

Elements of Incubation



(Source: InfoDev. (2009). Business incubation: Definitions and principles. In Trainee manual (Training manual). World Bank.)

2. Outreach and Virtual Services

Outreach and virtual services work well in entrepreneurial environments. Outreach and virtual services allow entrepreneurs to receive incubator help at little cost. Access to hot-desking, business support, and ICT benefits entrepreneurs. They can also profit from incubator outreach networking.

3: Links

Business incubators depend on its incubatees' relationships, which might lead to new revenue streams, partnerships, or profitable ideas. Incubators should make an effort to connect incubatees with individuals pertaining to the following groups:

- 1) Other public and private business service providers, such as lawyers, accountants, and marketing experts.
- 2) Universities, technical centers and research institutions
- 3) Government agencies
- 4) Financiers, including angel investors, banks and venture capitalists
- 5) Local service providers
- 6) Private sector mentors, including entrepreneurs, multinational firms, and others

2. Access to Finance

Finance usually matters for incubatees. Thus, incubators must provide financing to address this issue. Some banks are risk-averse and won't lend or fund ventures. In emerging economies with underdeveloped capital markets, this might be problematic because they have fewer capital access alternatives. Thus, incubators must connect their incubatees to financing sources.

Incubators must seek finance from larger economies, international donors, and others since incubatees struggle to find it. This proactive action is crucial for incubation and business growth, as most startups struggle without finance.

3.15 Common support provided by Business Incubation Centres

In most cases, assistance comes in the form of:

1. Physical space, like an office;
2. Services, such those in administration and information technology;
3. Financing, which involves helping the incubator's client businesses find the right funding sources; and
4. People Connectivity, which involves mentoring, coaching, and networking opportunities.

Infrastructure

Most incubators offer “easy in, easy out” conditions; monthly rental terms that allow flexibility for clients when joining or exiting. Some incubators, particularly sector specific incubators, offer technical facilities, such as laboratories and equipment that can be very helpful, especially to a technology-based start-up company.

Business services

Incubators provide access to administration and communication services often at “pay as you use rates”, including services such as Internet, telecommunications, photocopy, fax, binding, reception, mail, document receipt and dispatch, and secretarial assistance. These support services help clients to concentrate on their core business rather than on the support infrastructure. Furthermore, the startup companies do not need to make initial investments in expensive office equipment or front office personnel that can be provided by the incubator.

Financing

Businesses can get access to a variety of funding options with the help of incubators. Incubators often connect their clients with various funding sources, such as government grant schemes, banks, or venture capitalists, depending on the stage of growth of the business. Therefore, seed grants, credit, and equity are all possible forms of funding. If an incubator manages its own seed fund, it can invest in its clients' enterprises. Other incubators may also make their own sources of funding available to their customers.

“People Connectivity”

An experienced member of the incubator's management team or an outside expert in the appropriate field might serve as a mentor to the management team of a startup, facilitating advising relationships between the two parties. Each client's entrepreneurial and business abilities are cultivated in this manner by the incubators. A person's personal abilities, including sound business judgement, marketing savvy, and strong financial acumen, are essential to the success of any firm. As a result, incubators strive to help their clients develop these abilities. As the startup grows, it receives counsel and direction from the seasoned manager or mentor of the incubator. In addition, the mentor could introduce the entrepreneur to people in his or her personal network.

Support for client companies created outside of a physical incubator can also be provided through outreach initiatives and online, or electronically, through business incubation. When incubation services are provided digitally, it is said to be virtual incubation. The incubation space does not exist in physical form. Outreach Business Incubation is providing incubation services to clients who are not located in the incubator, sometimes known as "out of wall" clients. Virtual services are provided to both on-site renters and off-site clients, combining traditional incubation space and services with them. There is a substantial physical component to the virtual incubation service provided by outreach incubation. While virtual incubation tools help speed up the process, the business incubator manager still meets with customers in person on occasion. One way to put it is that this is a package deal.

This may be a fantastic way for clients and incubators to work together, and it can also be a terrific selling point for incubators that want to show how their services are making a difference.

3.16 Key Characteristics of a Business Incubation Centre:

1. Physical Infrastructure:

- **Office Space:** Incubation centres typically offer affordable office spaces equipped with basic amenities such as internet access, furniture, and utilities.
- **Shared Facilities:** Startups can access shared resources like meeting rooms, conference halls, laboratories, and specialized equipment that might otherwise be too costly.

2. Mentorship and Guidance:

- **Expert Advisors:** BICs connect startups with industry experts, seasoned entrepreneurs, and business consultants who offer mentorship and strategic advice.
- **Business Coaching:** Startups receive guidance on various aspects of business management, including financial planning, marketing strategies, and operational efficiency.

3. Networking Opportunities:

- **Investor Connections:** BICs often facilitate introductions between startups and potential investors, including venture capitalists, angel investors, and government funding agencies.
- **Industry Networks:** Startups gain access to a broader network of industry contacts, suppliers, and potential customers, which can be crucial for growth.

4. Training and Development:

- **Workshops and Seminars:** Regular training sessions are organized to enhance the skills of the startup team in areas such as product development, market research, and customer acquisition.

- **Business Plan Development:** Assistance is provided in creating and refining business plans, which are essential for securing funding and guiding the business's growth.
- 5. **Financial Assistance:**
 - **Seed Funding:** Some incubation centres offer seed funding or help startups access grants, loans, and other forms of financial support.
 - **Fundraising Support:** BICs may help startups prepare for funding rounds by connecting them with investors and assisting in pitch preparation.
- 6. **Legal and Administrative Support:**
 - **Legal Advice:** Startups can access legal services, including help with intellectual property (IP) rights, contracts, and regulatory compliance.
 - **Administrative Support:** Incubation centres often provide services like bookkeeping, human resources, and IT support, enabling startups to focus on core business activities.

3.17 Business Incubators: Functions and Objectives

3.17.1 Objectives of Business Incubation Centres:

Following are the main objectives of Business Incubation Centres:

- **Promote Entrepreneurship :** Encourage people to launch and expand their enterprises by promoting entrepreneurship.
- **Support Innovation & Technology Development:** Encourage the development of new products and services by supporting innovation and technology.
- **Reduce Startup Failure Rates:** Lower startup failure rates by offering organised assistance to help companies grow and thrive.
- **Boost Economic Growth:** Increase Economic Growth: Provide employment opportunities and support local economic growth.

- **Boost Competitiveness:** Assist new businesses in becoming competitive in both domestic and foreign markets.
- **Encourage Collaboration:** Promote cooperation by creating a startup ecosystem that links business owners with investors, industries, and academic institutions.
- **Encourage Sustainable Businesses:** Encourage company strategies that are both socially and environmentally responsible.

3.17.2 Functions of Business Incubation Centres:

Business Incubation Centres (BICs) serve startups and entrepreneurs by providing shared facilities, meeting spaces, and reasonably priced workspace.

- **Mentoring & Coaching:** They provide entrepreneurs with advice by matching them with seasoned mentors and business leaders.
- **Access to Funding & Investment:** A lot of BICs assist new businesses with obtaining funds from angel investors, venture capital, or grants.
- **company Development Support:** They offer instruction in management, marketing, finance, and company planning.
- **Networking Opportunities:** By putting startups in touch with partners, investors, and other business owners, BICs promote cooperation.
- **Legal & Regulatory Support:** New businesses are assisted with compliance, patents, intellectual property rights, and company registration.
- **Support for Technology and Innovation:** A few BICs provide access to cutting-edge technologies, R&D facilities, and prototyping.
- **Market Access & Expansion:** Through partnerships and trade shows, they help new businesses get into both domestic and international markets.
- **The business incubator is a facility that accommodates a business incubation process.**

- It can be For-Profit or Not-for-Profit organization.
- Business incubation refers to the process of focused support provided to start up enterprises during the early phase of their life span, usually for a period of 2-3 years, through the delivery of comprehensive and integrated set of services which include: work spaces, shared office services, business assistance services, management guidance and networking support. These services are made readily available to the incubator clients on flexible and affordable basis.
- The support is provided only to start ups' admitted to the incubator through a selection process for a limited period of time called the period of incubation, after which they become stable enough to operate without the special benefits of the incubator and exit the incubator making room for more startups to enter the incubator.
- The objective of the incubator is to improve the chances of survival of startup enterprises and accelerate their successful development through the precarious early phase of their life span.
- The business incubator is managed as a business entity in itself, initially with the support of Government and/or host institution (such as Universities, R & D organizations which have set up the incubator), with the perspective of becoming self-supportive at the earliest.
- The business incubator has a small management team with competencies to diagnose the needs of the incubator clients and develop and orchestrate the required resources and services for them.
- The business incubator earns its revenue from rent and service fee of incubator clients and consultation fee from assistance provided to business enterprises outside the incubator.

Thus, the business incubator is a facility which is usually created by Universities or R&D centres to provide focused support on an affordable basis to

selected newly formed companies during their startup period of 2-3 years with a view to improve their chances of survival substantially. The incubator may be a for-profit or not-for profit entity.

3.18 Role of business incubation centres in promoting entrepreneurship

Entrepreneurship is influenced by a combination of ideas, desire for accomplishment, and integration with the right business partners. Countries with good entrepreneurial infrastructure, such as technology parks and incubators, experience higher rates of entrepreneurial activities and competitiveness. However, poor entrepreneurial infrastructure in institutions of learning and community can hinder entrepreneurship growth. Business incubation centres play a crucial role in promoting entrepreneurship in both developed and developing countries.

In India, business incubators and technology centres are essential for fostering financially feasible business development and sustainability. These centres provide administrative support and advisory services to support the growth of entrepreneurial firms and promote innovative businesses within society. They help small businesses survive due to lack of educational and technical skills, inadequate infrastructure, and support systems.

Business incubation centres help start-ups survive and grow, particularly during vulnerable and early days. They provide necessary support, financial and technical services, and management guidance from experienced entrepreneurs and retired executives. Training programs, capital support, and network services, along with government regulations, play a major role in developing entrepreneurship. Individuals are drawn to the incubator due to the quality, variety, dependability, and accessibility of these services, which ultimately assist them in the successful development of their entrepreneurial endeavours. To encourage entrepreneurship, governments in both developed and developing countries should prioritise the establishment of business incubation centres and the implementation of government regulations for entrepreneurship.

3.19 The services provided by Business Incubation Centres

The services provided by Business Incubation Centres can be grouped in to 7 heads:

1. Infrastructure facilities
2. Financial Services
3. Mentoring Services
4. Marketing Assistance
5. Human Resource Assistance
6. Legal Services
7. Networking Assistance

Business Incubation Centres are specialized programs or facilities designed to support the growth and development of startup companies and small businesses. These centres provide a nurturing environment where startups can access a range of resources, including:

1. **Office Space and Infrastructure:** Startups are offered physical office space, meeting rooms, and shared facilities, reducing the overhead costs typically associated with starting a business.
2. **Mentorship and Guidance:** Incubation centers connect entrepreneurs with experienced mentors, advisors, and industry experts who provide guidance on business strategy, product development, market entry, and other critical areas.
3. **Networking Opportunities:** These centers facilitate connections with potential investors, partners, customers, and other startups, fostering collaboration and growth opportunities.

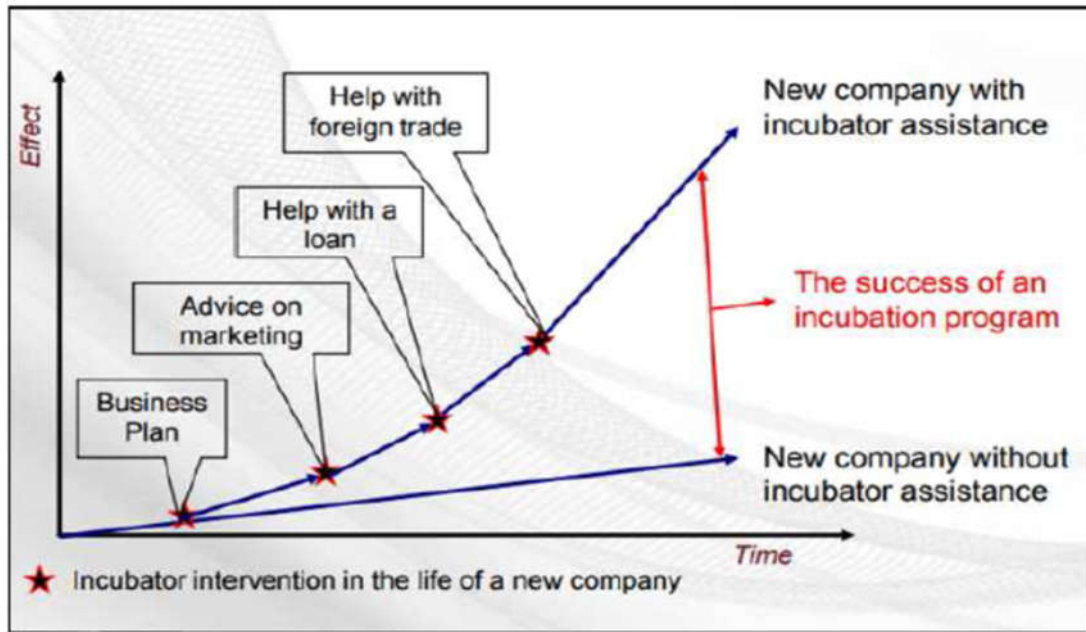
4. **Access to Funding:** Incubation centers often help startups access funding through investor networks, venture capital, government grants, and other financial resources.
5. **Training and Workshops – Human resource assistance:** Regular training sessions, workshops, and seminars are conducted to help entrepreneurs enhance their business skills and knowledge in areas such as marketing, finance, legal compliance, and technology.
6. **Business Services:** Many incubation centers offer essential business services such as legal advice, accounting, marketing, and IT support, helping startups focus on core business activities.
7. **Market Research and Support:** Startups receive assistance in understanding market trends, customer needs, and competitive landscapes, helping them position their products or services effectively.

3.20 Incubator Intervention in the life of the Company

Incubator intervention, according to the NBIA (2009), is the strategic assistance and resources that business incubators offer to help startups and early-stage enterprises grow and thrive. This intervention consists of providing office space, mentorship, company development services, networking opportunities, and funding access, as stated in the company Incubation Definitions and Principles (Trainee Manual, 2009). The objective is to increase the likelihood that new businesses will survive and succeed, which will ultimately support innovation and economic growth.

Fig 3.7

Incubator Intervention in the life of the Company (NBIA, 2009)



(Source: InfoDev. (2009). *Business incubation: Definitions and principles*. In *Trainee manual (Training manual)*. World Bank.)

3.21 The Added Value of Business Incubation: Overcoming Entrepreneurial Challenges

Business incubators aim to help entrepreneurs overcome some of their challenges in order to establish, run and grow successful businesses. This is because incubator clients face challenges which continually change with the development of their businesses.

In the early development stage, very common challenges efficiently tackled by business incubation are:

Lack of expertise and understanding of business. By giving them the knowledge, examples, resources, and pertinent contacts they need to complete these necessary tasks, the incubator helps new business owners navigate the process and phases of starting a company. Support could take the form of business registration or assistance in locating a suitable business partner.

Unrealistic assumptions about how long it will take to launch, secure, and expand a firm. In addition to the guidance given by the incubator team, the incubator facilitates networking amongst entrepreneurs both inside and outside the organisation who, despite operating in various industries, share similar concerns and challenges. The issue of irrational expectations, such as those related to the period required to break even, generate the first revenue from sales, and get further funding, can be resolved by exchanging experiences concerning these difficulties.

Insufficient management knowledge and expertise: As a business grows, management must change as well. For example, managing a small start-up team, a modest, expanding company with many people, or a lone entrepreneur can all be different. At various points in the incubatee's development, such as when it comes to luring, hiring, and keeping the personnel needed for the company's success, the incubator offers guidance and assistance.

Absence of social capital, or networks and contacts. Lack of expertise and understanding of business. By giving them the knowledge, examples, resources, and pertinent contacts they need to complete these necessary tasks, the incubator helps new business owners navigate the process and phases of starting a company. Support could take the form of business registration or assistance in locating a suitable business partner.

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luring, hiring, and keeping the personnel needed for the company's success, the incubator offers guidance and assistance.

Absence of social capital, or networks and contacts. Access to pertinent networks and contacts is provided by incubators, which is crucial for the expansion and prosperity of firms.

At some time in their early development, entrepreneurs will probably encounter some or all of the following difficulties while considering how to expand their company:

- Lack of demand;
- difficulty reaching customers;
- competition;
- insufficient goods or services;
- a shortage of skilled workers;
- a lack of funding or capital;
- a lack of space;
- a lack of time; challenges juggling work and family obligations;
- health and compliance issues related to the workplace;
- tax and compliance issues;
- and government regulations or restrictions
- lack of expertise and understanding of business.

By giving them the knowledge, examples, resources, and pertinent contacts they need to complete these necessary tasks, the incubator helps new business owners navigate the process and phases of starting a company. Support could take the form of business registration or assistance in locating a suitable business partner.

In light of these needs, the business incubator offers the following services:

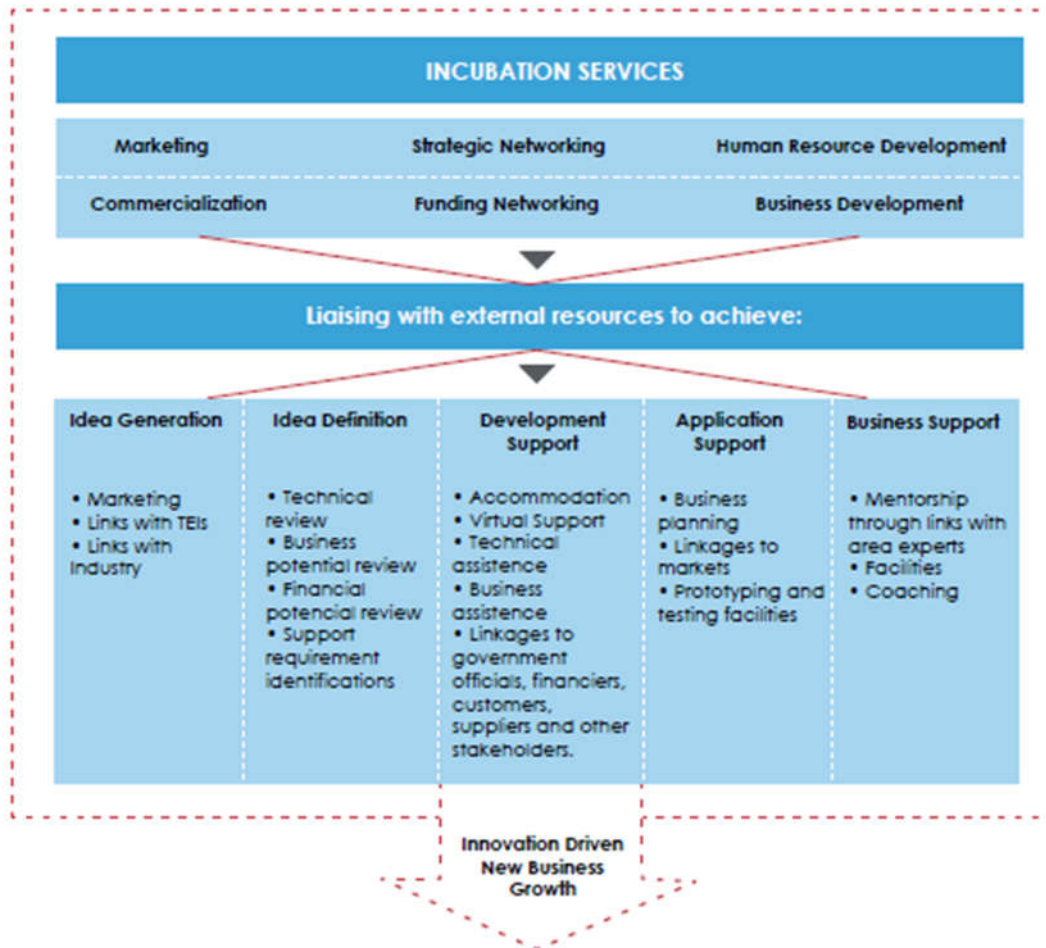
- Guidance on company management, particularly HRM;
- Mentoring, coaching, and counselling to help increase capacity;
- Workshops on business skills, such as closing deals;
- Guidance on business planning to ensure the company's success and longevity;
- Opportunities to network, including with technical advisors who can help with product development;
- Guidance on market research and marketing to determine the best target audience and sales pitch;
- Assistance in locating new markets to tap into potential opportunities;
- Sales support from experienced business advisors;
- Guidance on raising capital to ensure the company has enough funding;
- Guidance on financial management to ensure the company's smooth financial management and
- Information and communication technology, including office space, fax, photocopying machines, internet, email, meeting rooms, and car parking

Here are the key points from the MEIA Study that highlight the benefits of incubators:

The following are some of the many benefits of business incubators:

- They have a positive effect on the economy and society as a whole;
- They promote change using various models;
- They train future innovators and entrepreneurs;

Fig 3.8
Incubation Services



(Source: InfoDev. (2009). *Business incubation: Definitions and principles*. In *Trainee manual (Training manual)*. World Bank.)

3.22 Benefits provided by Business Incubation Centres to Startups in Key Business Areas

3.22.1 Economic Benefits

Business Incubation Centres (BICs) provide various economic advantages that directly impact a startup’s sales, revenue, profit, growth rate, customer acquisition, and diversification. These benefits help startups become sustainable and competitive in the market.

1. Increased Sales

- **Market Access & Networking:** Incubators connect startups with new markets, customers, and potential partners, increasing sales opportunities.
- **Sales Training & Strategies:** Startups receive mentorship on pricing, sales techniques, and customer engagement to boost conversions.
- **Brand Credibility:** Association with an incubator improves startup credibility, making it easier to gain customers and investors.

2. Higher Revenue Generation

- **Funding & Investment Support:** Startups get access to venture capital, angel investors, and grants, enabling business expansion and higher revenue.
- **Monetization Strategies:** Incubators help startups refine business models to maximize revenue streams.
- **Technology & Innovation Support:** R&D assistance enables the development of new revenue-generating products and services.

3. Improved Profitability

- **Cost Savings:** Shared office space, administrative services, and business resources lower operational expenses, increasing profit margins.
- **Operational Efficiency:** Guidance on financial management and lean business operations reduces waste and improves cost-effectiveness.
- **Scalability Support:** Incubators assist startups in scaling their operations efficiently, increasing profitability over time.

1. Accelerated Growth Rate

- **Business Mentorship & Training:** Expert advice helps startups refine strategies for rapid scaling.

- Access to New Markets: Incubators assist in domestic and international market expansion, driving business growth.
 - Government Support & Incentives: Many incubators offer tax benefits, subsidies, and other financial incentives that aid startup growth.
2. Enhanced Customer Acquisition
- Marketing & Branding Support: Incubators provide mentorship on digital marketing, advertising, and branding to attract more customers.
 - Networking & Exposure: Startups gain visibility through industry events, trade fairs, and incubator networks.
 - Customer Research & Feedback: Guidance on understanding market demand and customer preferences improves customer acquisition strategies.
3. Business Diversification
- Product & Service Expansion: R&D support allows startups to innovate and diversify their offerings.
 - Cross-Industry Collaborations: Incubators facilitate partnerships between startups from different industries, encouraging diversification.
 - Training on Market Expansion: Startups receive strategic guidance on entering new sectors and geographical markets.

By providing these economic benefits, Business Incubation Centres play a crucial role in fostering sustainable business growth, reducing startup failure rates, and enhancing overall economic development.

3.22.2 Social Benefits

Business Incubation Centres (BICs) contribute significantly to social development by fostering employment creation and work culture development in

startups. These benefits extend beyond individual businesses, positively impacting society and the economy.

1. Employment Creation

- **Job Generation in Startups:** Starting a business in a business incubator (BIC) increases the chances that the business will survive and grow, which directly creates jobs.
- **Multiplier Effect:** As startups grow, they create jobs in support services, supply lines, logistics, and marketing.
- **Empowerment of Youth and Women:** Many incubators encourage young people, women, and underprivileged groups to become entrepreneurs, which increases their involvement in the workforce.
- **Skill Development and Training:** Business innovation centres (BICs) offer internships, classes, and skill-building programs that give people industry-relevant skills and make them more employable.

2. Changing the work culture

- **Promoting Creativity and Innovation:** Incubators encourage their workers to think creatively by promoting a culture of problem-solving, new ideas, and constant learning.
- **Promoting Ethical and Accepting Workplaces:** Incubation programs stress ethical business practices, diversity, and acceptance, which creates a good work environment.
- **Collaboration and teamwork:** Startups in incubators often work in shared spaces, which makes it easier for entrepreneurs and workers to work together, share knowledge, and make connections.

- **Work-Life Balance and Employee Well-Being:** Many incubators encourage a healthy work atmosphere by mentoring on leadership, healthy habits, and ways to get employees involved.
- **Promoting an entrepreneurial mindset:** incubators promote an attitude of taking risks, being resilient, and being able to adapt, which is good for the professional growth of both founders and employees.

Business Incubation Centres are very important for creating jobs and improving work cultures, which leads to long-term social and economic growth. They not only make jobs available, but they also help make the startup community a modern, welcoming, and creative place to work.

3.22.3 Environmental Benefits

Business Incubation Centres (BICs) help new businesses start using environmentally friendly methods that will last. They support companies to use eco-friendly methods for managing waste, lowering pollution, making better use of resources, and coming up with n 1. Management of Waste

- **Encouraging the Circular Economy:** Startups that prioritise waste-to-energy, recycling, and upcycling are supported by incubators.
- **Promoting Sustainable Production:** Advice on how to use eco-friendly products and lean manufacturing to cut down on packaging and industrial waste.
- **Waste Reduction Initiatives:** Composting, effective disposal methods, and zero-waste rules are all suggested for startups.

2. Pollution Reduction

- **Eco-Friendly Technologies:** Incubators help new businesses create and apply eco-friendly technologies that lessen pollutants in the air, water, and soil.

- Sustainable Energy usage: To cut carbon emissions, a lot of BICs advocate for the usage of renewable energy sources like wind and solar.
- Optimisation of Transportation and Logistics: Startups are given advice on environmentally friendly transportation methods, such as shared mobility, electric cars, and lowering carbon emissions.

3. Sustainable Practices & Resource Efficiency

- Energy Conservation: Smart lighting, energy-efficient appliances, and optimised power use are all recommended for startups.
- Water Conservation Techniques: Rainwater collection, wastewater recycling, and low-water-use procedures are among the water-saving technologies that incubators support.
- Green Building Practices: A lot of incubators offer offices with eco-friendly workplace designs, sustainable architecture, and green certifications.

4. Sustainable Business Models & Green Innovation

- Support for Cleantech entrepreneurs: Green entrepreneurs are assisted by incubators in creating sustainable solutions in the areas of biodegradable goods, renewable energy, and environmentally friendly packaging.
- Carbon Footprint Reduction: Mentoring is provided to startups on how to implement climate-friendly and carbon-neutral business practices.
- Government Incentives and Compliance: BICs advise new businesses on environmental regulations, eco-certifications, and incentives for sustainable operations.

Business Incubation Centres assist companies in incorporating sustainability into their business models, resulting in long-term economic and environmental advantages, by encouraging waste management, pollution reduction, resource efficiency, and green innovation and green ideas.

3.23 Impact of Business Incubation Centres

According to estimates from the National Business Incubation Association (NBIA), in 2005 alone, North American incubators helped over 27,000 start-up businesses that employed over 100,000 people full-time and brought in \$17 million annually. About 87% of all businesses that had graduated from NBIA member incubation programs were still operating, and 84% of them stayed in the incubator's community, according to a different research conducted in the mid-1990s. According to a 2008 study by the US Department of Commerce Economic Development Administration and consulting firm Grant Thornton, business incubators created new jobs at little expense to the government. The United Kingdom Business Incubation (UKBI) has been measuring the effect of incubators on the local labour and economy for the past 12 years. According to the study, an incubator's client companies housed about 30 entrepreneurial businesses at any given time and offered an average of 167 full-time equivalent employment per incubator. About 60% of them were also able to support 150 other ventures by operating "outreach" services. Most significantly, companies that were housed in the incubator had an average success rate of 98%, compared to a national average of less than 30%, and about 87% of them made it past five years.

Entrepreneurship, new job creation, and global economic development have all benefited from the proliferation of business incubation centres, which have expanded both in terms of physical location and the number of centres themselves.

3.24 Indian Business Incubation Centres

Regarding the Indian context, the Science and Technology Entrepreneurs Parks (STEP) and Technology Business Incubators (TBI) were introduced by the National Science and Technology Entrepreneurship Development Board (NSTEDB) in the early 1980s and early 2000, respectively. Up till 2008, more than 1150 entrepreneurs were fostered by our nation's almost 120 technology parks and incubators. With an investment of Rs. 100 crores, NSTEDB has so far established 53 TBIs in partnership with prestigious academic and research institutions. The total revenue produced by these incubated businesses now totals Rs. 595 crores. Although

a thorough analysis of the combined effects of these processes has not been conducted, it is estimated that each year, these incubators assist in the graduation of roughly 500 businesses, of which 60% are technology-based startups. The Working Group on Science and Technology for Small and Medium Scale Enterprises' Eleventh Five Year Plan (2007–2012) recommends 170 Technology Business Incubators and 50 Technology Innovation Centres with an investment of Rs. 1100 Crore.

Despite their recent inception in India, incubation centres have been crucial in fostering entrepreneurship, as seen by the distinctive contributions of a small number of business incubators. The Indian Institute of Technology, Kanpur established the SIDBI Innovation & Incubation Centre (SIIC) in 2000. Since then, it has supported 15 businesses, five of which have graduated. Technology, engineering, and all other interdisciplinary initiatives are incubated by SIIC. The incubatee companies have produced over Rs 67 million in revenue and employed 94 people. Established in 2001, the Centre for Innovation, Incubation and Entrepreneurship (CIIE) in Ahmedabad helps turn high-tech and mass-impact ideas into businesses. Two of the sixteen businesses that were nurtured have already made a successful transition. More than 150 people are currently employed by CIIE's incubator in western India.

Since its founding in 2003, the National Institute of Technology, Calicut's Technology Business Incubator (TBINITC) has successfully incubated four of the seventeen companies that have been admitted thus far. The Vellore Institute of Technology-Technology Business Incubator (VIT-TBI) was founded in 2003 and specialises on consumer durables, biotechnology, and auto components. Five of the 18 businesses it has enrolled have already reached the predetermined benchmarks. The businesses have boosted the economy by Rupees 16 million and produced over 65 new employment.

Since its founding in 2003, Kongu Engineering College's Technology Business Incubator (TBI KEC) has supported 22 entrepreneurs, 12 of which have grown into successful enterprises. The TBI KEC incubatee, which is situated in an

area renowned for its entrepreneurial spirit, has created more than 200 employment so far.

TBI Composites was established in 2003 with the intention of fostering technological, material, and product and process development endeavours. Out of the 56 companies it has incubated, 53 have graduated. In addition to adding Rupees one billion in revenue, the companies have created 1500 employment. With an emphasis on using business incubation to help impoverished farmers in the semi-arid tropics, Agri Business Incubator-ICRISAT has incubated 17 enterprises, five of which have departed after completing the incubation's objectives. To date, 543 people have been employed by these companies.

An integrative business incubator that aims to foster an entrepreneurial spirit at IIT Mumbai, the Society for Innovation and Entrepreneurship (SINE) was established in 2004. So far, 10 of the 32 companies that have been admitted have created jobs for almost 200 individuals. In 2004, the National Design Business Incubator (NDBI) was established with the goal of producing a new generation of entrepreneurs known as Designpreneurs. Thirteen new employment and sixty million Rupees in revenue have been produced by fourteen companies that have already completed the incubation process.

The MITCON Biotechnology Centre (MPBC) was established in 2004 with a focus on the agriculture, biotechnology, and pharmaceutical industries. Out of the 35 firms that were incubated, 15 were able to graduate. Its incubatees have generated 40 million Rupees in income and employed over 150 people.

The Life Science Incubator - ICICI Knowledge Park, Hyderabad is an autonomous centre inside the larger ICICI Knowledge Park (IKP). It was established in 2005. In 2007, the incubator shared first place in the DST's Best TBI competition. Out of the nine businesses it has supported, three have been able to successfully exit the incubator after reaching their target growth rate.

Of the 72 companies that have been incubated at the Technopark Technology Business Incubator in Trivandrum, 40 have established themselves and are now

profitable. Startups that are developing technologies or products are the main focus of the incubator. Periyar Technology Business Incubator has supported seven startups since its inception in 2006, all of which are focused on herbal medicine.

March 2006 saw the founding of Amity Innovation Incubator (AII). Businesses in the fields of information and communication technology and bioinformatics are AII's primary emphasis. Only three of the twenty-five companies that AII has supported have gone on to become successful on their own. The mission of the Rural Technology and Business Incubator at IITM, which has been in operation since 2006, is to support the development of new businesses by identifying unmet needs in rural areas and then working with those communities to create technologically advanced solutions. Two of the twelve firms that RTBI has incubated have successfully completed their incubation goals.

In 2007, the Krishna Path Incubation Society (TBIKIET) was founded with the intention of supporting startups in the fields of information and communication technology (ICT), electronics (EE), and mechanical engineering. Eleven startups have been nurtured there. In its five years of operation, TBI-BITS has nurtured nine startups, two of which have successfully exited the market. The incubator's focus has been on very large scale integrated circuit (VLSI) design and embedded systems. Virtual incubation has helped all of the current incubatees develop their ideas, which has resulted in the creation of 127 jobs and about Rupees 10 million in revenue.

Just over a year after its launch, the Amrita Technology Business Incubator is now nurturing four startup enterprises. Its primary goal is to foster new businesses in the fields of electronics and information technology (IT).

Thus, entrepreneurship, innovation, and economic growth are significantly promoted by Indian business incubation centres. Mentorship, financial support, networking opportunities, and essential infrastructure are provided by these centres to early-stage startups, enabling them to effectively scale and surmount initial challenges. The incubation ecosystem has expanded considerably, supporting a variety of industries, including Fintech, Healthcare, Agritech, and Technology, as a result of powerful government initiatives like Startup India.

In India's thriving startup landscape, the impact of incubation centres is evident in the growth of successful enterprises that have emerged from incubation centres, thereby contributing to economic development and employment creation. Nevertheless, obstacles persist, including the necessity for enhanced incubation quality, regulatory obstacles, and access to funding. The effectiveness of incubation centres can be further improved by fostering collaboration among government, academia, and private stakeholders, thereby ensuring that Indian businesses are globally competitive and experience sustainable growth.

Business incubation centres will continue to play a critical role in the development of the future of entrepreneurship, the advancement of technology, and the cultivation of a dynamic startup ecosystem as India continues to establish itself as a global innovation engine.

3.25 Business incubation centres in Kerala

Business incubation centres in Kerala are facilities designed to support the growth and development of startup companies by providing them with various resources and services. These centres offer a conducive environment for startups to grow, innovate, and scale their operations. The key types of business incubation centres in Kerala include:

1. Government-Backed Incubation Centres

Government-backed incubation centres in Kerala are primarily driven by state initiatives aimed at supporting the startup ecosystem. These centres often receive funding and strategic support from various governmental departments, ensuring that startups have access to the resources they need to innovate and scale.

a. Kerala Startup Mission (KSUM)

- **Overview:** To foster an entrepreneurial spirit and facilitate business incubation in the state of Kerala, the principal government organisation is the Kerala Startup Mission (KSUM). It manages multiple incubation centres

across the state, focusing on fostering innovation in various sectors, including information technology, biotechnology, electronics, and more.

- **Key Incubation Centres under KSUM:**
- **KSUM Central Incubation Facility, Thiruvananthapuram:** This facility serves as a central hub for tech startups in the state, offering extensive resources, mentorship, and funding opportunities. It is strategically located in the capital city to leverage the connectivity and access to governmental and academic institutions.
- **KSUM Integrated Startup Complex, Kochi:** Situated in Kochi, this is one of the largest incubation complexes in India. It houses multiple sector-specific incubation centres, including Maker Village, and serves as a significant node in Kerala's startup ecosystem, providing world-class infrastructure and facilities for startups.
- **KSUM Kozhikode Incubation Center:** Located in the northern part of Kerala, this center provides local support and networking opportunities for startups in the region, focusing on IT and allied sectors.

b. Technology Business Incubators (TBIs)

- **Overview:** Technology Business Incubators (TBIs) in Kerala are typically associated with academic institutions and funded by the Department of Science and Technology (DST). These incubators focus on nurturing technology-driven startups, leveraging the research capabilities of their host institutions.
- **Key Incubation Centres:**
- **TBI at National Institute of Technology Calicut (NITC):** This incubator focuses on technology-driven startups, particularly in engineering and IT sectors. It provides access to advanced research facilities, industry linkages, and mentoring from faculty and industry experts.

- **TBI at Indian Institute of Information Technology and Management-Kerala (IIITM-K), Trivandrum:** Specializes in digital technologies and IT startups, this incubator supports innovations in software development, AI, and other emerging technologies, benefiting from the academic environment of IIITM-K.

2. University-Based Incubation Centres

University-based incubation centres in Kerala are affiliated with educational institutions and are designed to leverage academic research and innovation. These centres not only provide incubation support but also create a bridge between academic research and market needs, facilitating the commercialization of research outputs.

a. Amrita Technology Business Incubator (Amrita TBI)

- **Overview:** Amrita TBI is a multi-disciplinary incubator established by Amrita Vishwa Vidyapeetham. It supports startups across various sectors, including technology, healthcare, and social impact, with a strong focus on leveraging academic research for market applications.
- **Location:** Amrita Vishwa Vidyapeetham, Amritapuri Campus, Kollam.
- **Key Features:**
 - **Seed Funding:** Provides seed funding to startups to kickstart their operations, ensuring they have the necessary capital to develop their products and enter the market.s
 - **Mentorship and Networking:** Offers access to a network of industry experts, mentors, and investors, enabling startups to gain insights, build connections, and scale their businesses.
 - **Global Outreach:** Collaborates with international partners to provide startups with opportunities for global market access and expansion.

b. Kerala Agricultural University (KAU) Incubation Center

- **Overview:** This incubation center, located at Kerala Agricultural University, focuses on agribusiness and food technology startups. It plays a crucial role in supporting innovations in agriculture, which is a significant sector in Kerala's economy.
- **Location:** Kerala Agricultural University, Thrissur.
- **Key Features:**
 - **Agri-Innovation:** Specializes in supporting startups that develop new technologies for agriculture, food processing, and sustainable farming practices.
 - **Research Support:** Provides startups with access to research facilities and expertise from the university's faculty, ensuring that they can develop scientifically validated products.
 - **Market Linkages:** Helps startups connect with markets and distribution channels within the agribusiness sector, facilitating the commercialization of their innovations.

3. Private Incubation Centres

Private incubation centres in Kerala are driven by non-governmental entities, often in collaboration with corporate partners. These centres are agile and focus on specific industry verticals, providing startups with tailored support that aligns with market needs.

a. Maker Village

- **Overview:** Located in Kochi, Maker Village is one of India's largest electronics hardware incubators. It is a collaborative initiative by KSUM, the Ministry of Electronics and Information Technology (MeitY), and the Indian Institute of Information Technology.

- **Location:** Kinfra Hi-Tech Park, Kalamassery, Kochi.
- **Key Features:**
 - **Hardware Focus:** Specializes in electronics, IoT, robotics, and other hardware-based startups, providing state-of-the-art facilities for prototyping and product development.
 - **Prototyping Facilities:** Offers advanced prototyping labs and tools, enabling startups to create and test their hardware products in a supportive environment.
 - **Industry Collaboration:** Maintains strong ties with industry leaders, providing startups with opportunities for product validation, commercialization, and market entry.

b. Startup Village

- **Overview:** Also based in Kochi, Startup Village was one of India's first incubators focused on mobile internet technology startups. It operated as a public-private partnership, offering a unique blend of resources from both sectors.
- **Location:** Kinfra Hi-Tech Park, Kalamassery, Kochi.
- **Key Features:**
 - **Mobile Internet Focus:** Targeted startups in the mobile internet technology space, helping them develop and scale their innovations.
 - **Mentorship:** Provided access to successful entrepreneurs and industry veterans as mentors, ensuring startups received valuable guidance and insights.
 - **Funding Access:** Facilitated connections between startups and angel investors, venture capitalists, and other funding sources, enabling them to secure the necessary capital for growth.

4. Sector-Specific Incubation Centres

Sector-specific incubation centres in Kerala focus on particular industries, providing specialized support to startups within those sectors. These centres are essential for fostering innovation in areas critical to the state's economy, such as healthcare, agriculture, and technology.

a. MedTech Incubator

- **Overview:** The MedTech Incubator focuses on healthcare and medical technology startups, providing specialized support for innovations in the medical field.
- **Location:** Integrated Startup Complex, Kochi.
- **Key Features:**
 - **Healthcare Expertise:** Provides startups with access to healthcare professionals and clinical validation opportunities, ensuring that their products meet industry standards and patient needs.
 - **Regulatory Guidance:** Offers assistance with navigating regulatory requirements in the medical field, helping startups bring their products to market in compliance with health regulations.
 - **Industry Collaboration:** Partners with hospitals, medical institutions, and healthcare companies, offering startups opportunities for product development, testing, and commercialization.

b. Agri-Business Incubation Centres

- **Overview:** These centres, such as the one at Kerala Agricultural University, are dedicated to supporting startups in the agribusiness sector, including food processing, sustainable farming, and agri-tech innovations.
- **Location:** Kerala Agricultural University, Thrissur.

- **Key Features:**
 - **Agri-Tech Focus:** Supports startups working on innovations in agriculture, such as precision farming, organic farming, and agri-automation, helping them develop sustainable solutions for the agriculture sector.
 - **Market Access:** Facilitates connections with markets and distribution channels within the agricultural sector, enabling startups to commercialize their products and reach broader markets.
 - **Sustainability:** Encourages the development of sustainable and environmentally friendly agricultural practices, aligning with global trends towards sustainability.

5. Co-Working Space Incubation

Co-working space incubation centres in Kerala provide flexible workspaces equipped with essential tools and technologies. These spaces are ideal for startups at various stages of development, offering them a collaborative environment where they can grow and innovate.

a. Fablabs Kerala

- **Overview:** Fablabs are part of the KSUM initiative and provide co-working spaces equipped with advanced tools and equipment for digital fabrication and prototyping.
- **Key Locations:**
 - **Fablab Kochi:** Located at the Integrated Startup Complex, Kochi, this Fablab provides startups with access to cutting-edge fabrication tools and a collaborative workspace.
 - **Fablab Trivandrum:** Situated at the Trivandrum Technopark, this Fablab supports startups working on digital manufacturing technologies, offering them the resources needed to bring their ideas to life.

- **Key Features:**
 - **Digital Manufacturing:** Offers facilities for digital fabrication, 3D printing, and other manufacturing technologies, enabling startups to create prototypes and refine their products.
 - **Collaborative Environment:** Encourages collaboration among entrepreneurs, engineers, and designers, fostering a culture of innovation and creativity.
 - **Training Programs:** Provides training and workshops on digital manufacturing technologies and product development, helping startups build the skills they need to succeed.

6. Rural Incubation Centres

Rural incubation centres in Kerala are designed to support entrepreneurship in rural and semi-urban areas. These centres aim to promote inclusive growth by providing startups in these regions with the resources and support they need to thrive.

a. KSUM Rural Incubators

- **Overview:** As part of its expansion, KSUM has established rural incubation centres across Kerala to support entrepreneurship in rural areas.
- **Key Locations:**
 - **KSUM Palakkad Incubation Center:** Supports agritech and rural startups in the Palakkad district, focusing on innovations that benefit the local economy.
 - **KSUM Wayanad Incubation Center:** Focuses on sustainable agriculture and eco-tourism startups, leveraging Wayanad's natural resources and cultural heritage.
- **Key Features:**
 - **Rural Focus:** Targets startups and small businesses in rural and semi-urban areas, promoting inclusive growth and local economic development.

- **Local Market Support:** Helps rural entrepreneurs develop products and services tailored to local markets, ensuring their innovations meet regional needs.
- **Capacity Building:** Provides training and capacity-building programs to enhance the skills of rural entrepreneurs, empowering them to succeed in their ventures.

3.26 Incubator Support System in Kerala

Setting up sector-specific and agnostic incubators and accelerators in the state is part of a plan by the government of Kerala to help the state's startup environment. These are seen as the engines of the State's startup ecosystem. They will bring about new technologies, talent pools, jobs, investments from outside the country, and an industry ecosystem that will help the country's GDP grow through profitable economies. In order to do this, the Government of Kerala helps these organisations by covering their start-up costs and giving them operational and mentoring support, as stated in Clause 10.3 of the IT Sub Policy 2017.

The help will be given to three groups:

Group 1: Government Departments, Government Agencies, International Universities, Commodity Boards, Industry Associations, and well-known international incubators or accelerators that have been running for at least three years in different countries make up Group 1.

Group 2: Incubators that have been approved by the Department of Science and Technology or another Indian government body (such as BIRAC, ICAR, Niti Ayog, etc.) and have been open for at least two years must be in this group. They must also have experience running incubators and accelerators in other parts of India.

Group 3: Tech hubs, private co-working spaces, country incubation spaces, and other places run by a non-profit or a non-governmental organisation.

Table 3.7**Demographic Analysis of Startups in Kerala**

Kasaracode	1%
Cannanore	2%
Wayanad	0.5%
Kozhikode	10%
Malappuram	3%
Palghat	2%
Thrichur	5%
Eranakulam	36%
Idukki	0.9%
Kottayam	3%
Alleppy	2%
Pathanamthitta	0.7%
Quilon	3%
Trivandrum	23%

(Source: Kerala startup ecosystem Report 2019)

Startups often choose to establish their headquarters in Ernakulam or Thiruvananthapuram, two of Kerala's most important cities for business. An investigation conducted by Data Labs by Inc42 revealed that these two cities were home to 59% of the state's startups.

Startups have begun to migrate to Kozhikode and Kochi, home to esteemed educational institutions like the Indian Institute of Management (IIM) and the National Institute of Technology (NIT), in recent years. The percentage of startups based in the district has increased from 6% in 2018 to over 10% presently.

Roughly 40% of the 2,100 active entrepreneurs in the state have utilised incubation in some way, whether it is through privately owned or publicly funded incubators.

3.27 Kerala Startup Mission

Kerala Startup Mission (KSUM, formerly Techno Park TBI) is the main government body in Kerala, India, that supports and encourages business growth

and start-ups. For the government of Kerala, KSUM is the main organisation that supports entrepreneurship and business start-ups in the state.

KSUM is the main organisation for all incubators in the state, and it works with them to improve the growth of infrastructure for entrepreneurs. The main reason KSUM was created was to plan, set up, and run the Technology Business Incubator (TBI), a startup accelerator in Kerala. The goal was to encourage people to become entrepreneurs in the technology field and to make the infrastructure and environment needed to support high-tech businesses. People who want to start their own businesses in Kerala can get help from the Kerala Startup Mission (KSUM). It is also in charge of carrying out the Kerala Technology Startup Policy, which helps the state's startup environment by:

- For young people who want to start their own businesses in the technology field, KSUM is a great place to start. Over the years, it has helped create a lot of new goods and solutions.
- The KSUM environment is very creative and productive, which makes it ideal for entrepreneurs who want to grow their tech businesses and meet foreign standards. This program is only for high-tech startups that have new goods or technologies.
- It also forces entrepreneurs to finish their work quickly to improve efficiency and meet the product-market fit timing criteria.
- The things that KSUM did in Kerala have changed the way the government works and the way the young people in Kerala live their lives.

KSUM also wants to:

- Coordinate the activities of other incubators in the state; • Strengthen the state government's efforts to encourage entrepreneurship;
- Support knowledge-driven and technology-based startup businesses run by students, faculty, and local entrepreneurs;

- Plan and carry out activities that connect with industry and encourage networking;
- Set up facilities for research and development.
- Promoting the creation of Innovation and Entrepreneurship Development Cells (IEDCs) and tech parks in schools, as well as programs that help employees improve their skills.

The Kerala Startup Mission (KSUM) helps make Kerala a great place for startups to grow and come up with new ideas. The Kerala government's main body, KSUM, has pushed for tech-based business ideas, streamlined incubators, and improved the physical space for new businesses. Many businesses have been helped by KSUM, which has helped the state's economy and technology by creating a productive environment and connecting companies with mentors, funding, and industry contacts.

KSUM's strategic moves have also changed the way young people think, which supports business ownership as a career path. The project has also changed the way the government helps businesses. Through mentoring, research and development, and working together with businesses and universities, KSUM is dedicated to making Kerala a place where startups can thrive and compete on a global scale.

PART B

3.28 INTRODUCTION

Business incubators are essential in helping early-stage entrepreneurs by giving them the infrastructure, resources, and guidance they need to develop into profitable businesses. These organised programs provide a supportive setting where business owners can obtain capital, industry knowledge, office space, networking opportunities, and training in business development. Incubators greatly increase startup survival rates and promote economic growth by lowering the risks involved with new companies.

This section examines the idea, purposes, and importance of business incubators, emphasising how they support innovation, market expansion, and the growth of entrepreneurship. It looks at several incubation methods, how well they work to create long-lasting companies, and the difficulties incubators have while helping new enterprises. This section offers important insights into how business incubators function as catalysts for technological and economic growth by examining their place in the start-up ecosystem.

3.29 INCUBATORS

Incubator programs are thorough systematic initiatives designed to support and nurture entrepreneurs in their early stages. Another name for these initiatives is startup accelerators. In order to help entrepreneurs expand their firms and improve their odds of success, these programs offer a variety of resources, advice, and mentorship.

The following are some of the most crucial components of a business incubator program:

1. A competitive application procedure is used to select startups for incubator programs based on their potential for innovation and development. As a result, only the most promising and financially solid companies are accepted into the program.
2. Coworking space: The majority of incubator programs offer businesses a designated physical location to work from. Startups can now take advantage of a more polished office area, perfect for teamwork and making connections with other business owners.
3. Access to resources: Incubator programs provide entrepreneurs with a variety of resources that they would not have otherwise. Phones, computers, conference rooms, and internet access are all part of a company's infrastructure. The concentration of an incubator's industry-specific program determines whether or not specialised facilities and equipment are available..

4. **Guidance and mentoring:** An incubation program offers businesses crucial coaching and mentoring. Mentors and advisors are often investors, industry experts, and seasoned entrepreneurs who assist companies in overcoming challenges and making informed choices.
5. **Networking opportunities:** Startups can connect with a wide range of investors, entrepreneurs, and industry professionals through incubator programs. Crucial to a company's growth are the partnerships, collaborations, and financing opportunities that might arise from these connections.
6. **Seminars, workshops, and educational programs:** Incubator programs frequently host seminars, workshops, and educational programs to assist startups in enhancing their knowledge in crucial areas such as marketing, operations, company strategy, and financial management. The startup's overall competence and prospects of success can be enhanced through these endeavours.
7. **To help startups improve their understanding of important topics like marketing, operations, business strategy, and financial management,** incubator programs often organise seminars, workshops, and educational programs. These efforts can improve the startup's overall competence and success chances.
8. **Collaboration and peer support:** Participating startups in incubation programs get the opportunity to network with like-minded business owners and work together to address common challenges. If you are a company founder or co-founder looking to build a network, swap stories, and learn from each other's triumphs and tribulations, then peer support is for you.
9. **Programs having a defined length:** Some incubator programs are designed to run for a specific amount of time, usually between a few months and a few years. This time-limited framework gives startups a concentrated and

rigorous setting where they can develop rapidly and go on to a more stable stage of operation.

10. **Achievement and ongoing support:** Many startups "graduate" and are acknowledged as alumni after completing an incubation program. In order to exhibit their work and draw in investors and other stakeholders, startups typically arrange showcase events. After they graduate, many incubators stay in touch with their alumni, providing them with resources that support the development of successful enterprises.

An incubator program is a comprehensive support system that gives companies a range of resources, networking opportunities, and mentorship to increase their growth and success rates. With the help of incubator programs, which provide a regulated and rigorous environment, startups can overcome the challenges of entrepreneurship and make faster progress towards becoming profitable businesses.

3.30 Working of a business incubator program

Startups in their early stages have a better chance of success if they participate in an incubator program that offers them assistance, resources, and mentorship. . These programs often include startup funds, connections to other businesses, shared office space, mentoring, and other services. We will outline the many components and internal operations of a typical business incubation program in this response.

The Application Process: The initial stage in participating in a startup incubator program is to submit an application. Typically, this necessitates a comprehensive business plan, financial projections, and other pertinent startup information. The incubator will subsequently select a set of companies to participate in their program based on their evaluation of the proposals.

Mentoring and Guidance: Startups are typically assigned one or more industry professionals upon acceptance into the program. During the initial phases of a company, these mentors offer assistance and direction. They could provide

guidance in a variety of domains, such as fundraising, marketing, product development, and strategy.

Space: Many incubation programs provide businesses with space to set up offices. This might range from private office suites to communal office spaces, depending on the program. Sharing office space with other businesses in the program can help startups by promoting networking and teamwork.

Funding: Ventures that take part in startup incubators can be able to receive funding. Examples of these include grants, stock investments, and relationships with investor networks. A lot of businesses use the money they get from incubators to fund marketing, product development, operational costs, and other things.

Networking Opportunities: Meeting and connecting with other entrepreneurs is one of the numerous benefits of taking part in a business incubator program. Incubators frequently host conferences, workshops, and other gatherings to connect companies, investors, and subject-matter specialists. By making connections with the right individuals and collaborating, startups can use these networking opportunities to accelerate their growth.

Training and Workshops: Incubator programs frequently offer a variety of training sessions and workshops to assist entrepreneurs in expanding their knowledge and skills. These meetings may address a variety of topics, such as investor pitches, business planning, marketing strategy, and financial management. Our primary goal is to support emerging businesses by giving them the knowledge and tools they require to succeed.

Demo Days and Investor Pitches: Companies usually have the opportunity to showcase their business and development concepts to a group of investors at the end of the incubation cycle. The "demo day" event is a popular strategy where emerging companies present their products to a group of potential investors. Strategic partnerships and additional funding can help the firm grow more quickly.

In conclusion, an incubator program offers mentors and a variety of resources to support businesses. By providing seminars, training, office space,

funding, networking opportunities, and mentorship, these initiatives assist startups in surmounting the obstacles associated with establishing and expanding their businesses. Startups can enhance their likelihood of success and expedite their growth by enrolling in an incubator program.

3.31 Benefits of joining a startup incubator program

Startup incubators are very helpful for creators and businesses in their early stages. The goal of these programs is to help entrepreneurs achieve by giving them help, resources, and direction. There are several benefits to joining a business incubator:

1. **Advice and mentoring:** One of the best things about business incubator programs is that they have experienced mentors and advisors who can help you. With their knowledge and views into the business world, these experts can help startups get through tough times.
2. **Networking:** Incubator programs usually bring together businesses, investors, and experts in the field who share similar goals. In this setting, startups can meet potential partners, customers, and funders and work together with them. Start-ups can find new business opportunities and grow their professional networks through startup networking.
3. **Money:** Startup centres often have connections with venture capitalists, angel investors, and other types of investors. Startups may be able to get money from startup programs. The incubator can help entrepreneurs make their pitch and business plan better so they can get backers.
4. **Infrastructure and resources that are shared:** Businesses can get office space, technology, and tools through incubator programs. This can cut startup and overhead costs by a lot, giving owners more time to work on making products. Startups in the program work together and share what they know by using common tools.

5. Education and training: Business incubator programs offer training, workshops, and lectures on how to run a successful business. Some examples are making a business plan, marketing, managing money, and legal problems. Incubator training can help startups learn how to be successful as business owners.
6. Validation and Credibility: Startups can gain credibility with partners, customers, and funders by joining an incubator program that is known for doing good work. With a good incubator, the startup's image and the interest of its stakeholders may get better.
7. Structure and accountability: Startups are given dates and goals by incubator programs. Structure and accountability can help entrepreneurs stay focused and inspired, which is good for growth. Startups can also use the framework of the program to find and fix problems with their strategy and operations.
8. Expertise in a certain industry: Some startup incubators focus on green energy, healthcare, or technology. By joining an incubator program, startups can get access to resources, networks, and knowledge that are specific to their business. They can get ahead and improve their chances in the industry.
9. Exposure and publicity: In incubator programs, startups can show off their goods and services to the public, the media, and possible customers. Publicity and word of mouth can help businesses build their brand and get early adopters. The incubator's PR and marketing can help a company get more attention.
10. Long-term help: A lot of startup incubators offer support after the program is over. There may be tools, events, mentors, investors, and networks of alumni accessible. Long-term assistance from an incubator can help businesses grow and stay open.

Finally, startup incubators can help business owners and companies in their early stages. Through mentoring, investments, and shared resources, these programs

help businesses grow, learn, and succeed. For businesses to succeed, incubators help them network, gain experience in their field, and get more publicity.

3.32 Types of support provided by startup incubator programs

Startup centres provide various support services aimed at assisting individuals in transforming their innovative business concepts into successful enterprises. These programs assist companies by providing tools, mentorship, and networking opportunities.

The following help is given by startup development programs:

1. **Workspace:** One thing that entrepreneurs can do is work in a real area. Many business incubators give entrepreneurs their own office or a shared workspace so they can work. By offering high-speed internet, meeting rooms, and common areas, these places encourage people to start their own businesses.
2. **Funding:** A lot of business centres give money to businesses. This includes grants, seed cash, and access to investors and venture capitalists. Startups get money for promotion, R&D, and hiring people.
3. **Coaching and mentoring:** Incubators connect entrepreneurs with experienced teachers and experts in the field who can help them get started and grow. These teachers give advice on business planning, strategy, and how to be an entrepreneur.
4. **Workshops and educational sessions:** Incubator programs help companies learn important skills through workshops, seminars, and educational sessions. These can include things like marketing, sales, planning the business, law, money, and more. Entrepreneurs can learn from the best practices and ideas shared by leaders in the field.
5. **Making connections:** If you join a startup program, you can meet other entrepreneurs, business partners, and leaders in your field. Entrepreneurs can

get help from incubators by going to workshops, networking events, and pitch competitions.

6. Help with legal and administrative tasks: New businesses need help forming, writing contracts, and protecting their intellectual property (IP). Legal knowledge could help startup projects deal with these tricky issues.
7. Resources and services: Market research, industry studies, and databases are some of the things that incubators can offer to help new businesses grow. Cloud hosting, accounting software, and marketing tools are all examples of software that startups need. These programs may be cheaper or even free.
8. Demo days and investor pitches: At the end of many incubator programs, entrepreneurs show their goods or services to investors, partners, and customers during investor pitches or demo days. At these meetings, startups can meet other people, raise money, and make important connections.
9. Alumni Network: When you join an incubator program, you often also join a larger group of entrepreneurs who have passed. After development, this alumni network can help, work with, and connect you with other people.

Businesses at different steps of their journey can get a lot of help from startup incubator programs. Incubators help entrepreneurs achieve by giving them a place to work, money, advice, education, networking, legal help, resources, and chances to get investments.

3.32.1 A startup incubation program's assistance with networking

When it comes to networking, business incubator programs can be quite helpful to entrepreneurs. The following are some ways that a business incubation program can help with networking:

Access to a diverse community: A significant benefit of enrolling in a startup incubator program is the chance to connect with individuals who share similar interests. These gatherings generally assemble a varied cohort of entrepreneurs, mentors, investors, and business professionals. Joining such a club facilitates

networking with individuals from diverse backgrounds and industries, which is highly beneficial.

Mentoring and guidance: Startup incubator programs typically provide mentorship and guidance from experienced business owners and experts. These mentors can facilitate business growth and success through strategic advice, industry connections, and practical guidance. Regular interactions and one-on-one sessions enable entrepreneurs to establish connections with mentors, facilitating access to their networks for potential partnerships, collaborations, and introductions to influential individuals.

Workshops and events: Networking events, seminars, and meetings are regularly held by startup incubator programs. Business owners have numerous opportunities to network with potential partners, investors, clients, and industry experts at these events. In addition to exhibiting their products and services, organisations can have meaningful conversations and establish genuine connections by attending these events.

Investor relationships: Numerous business incubation programs maintain robust connections with venture capitalists, angel investors, and various funding sources. These programs can connect entrepreneurs with potential investors interested in supporting their projects through their networks. This significantly enhances the likelihood of securing funding and fostering growth.

Industry partnerships: Startup incubation programs frequently engage companies, trade associations, and governmental organisations as partners. Partnerships provide entrepreneurs with access to resources, pilot projects, and collaborative opportunities that may be unattainable independently. Utilising these partnerships enables startups to broaden their networks and enhance their reputations within their respective industries.

Alumni network: Participation in a startup incubation program provides access to a substantial alumni network. This network comprises entrepreneurs who have completed the program and subsequently established successful businesses.

Alumni networks provide startups with substantial support, guidance, and potential avenues for collaboration. Participation in an alumni network may provide continued networking advantages following the conclusion of the incubation program.

Visibility and exposure: Startup incubator programs typically possess significant visibility and a robust brand presence within the entrepreneurial ecosystem. Engagement in a reputable program enhances an entrepreneur's exposure and visibility. This may attract the interest of potential investors, partners, and clients. Numerous incubator programs actively promote their firms via events, media coverage, and online platforms to enhance exposure and networking opportunities.

An incubator program serves as a valuable networking tool. These programs facilitate the development of enduring connections and the expansion of professional networks for entrepreneurs by offering access to a diverse community, mentorship, events, industry alliances, investor contacts, and alumni networks..

3.32.2 Space for offices offered by startup incubator programs

Startup incubator programs do provide office space for aspiring entrepreneurs and early-stage companies. The goal of these programs is to provide entrepreneurs with a supportive, collaborative environment in which they can grow and thrive. Consider the following crucial points:

1. Infrastructure and facilities: A key service provided by a business incubation program is the provision of office space. Incubators generally offer startups a physical workspace equipped with desks, chairs, and additional furnishings. These commonly utilised spaces facilitate collaboration and networking among business owners with shared values.
2. Facilities and utilities: In addition to office space, startup incubators typically provide a variety of facilities and utilities to satisfy the demands of the entrepreneurs. Examples of what this might include include high-speed

internet, conference spaces, printing and scanning facilities, shared kitchens, and common lounge areas.

3. **Economical solution:** Startups often face financial constraints, making the acquisition of traditional office space a challenging endeavour. Incubators represent a cost-efficient option, as they offer entrepreneurs complimentary or significantly reduced office space. Startups can thus minimise operating costs and allocate their limited resources to other critical aspects of their business.
4. **Access to a supportive ecosystem:** Startup incubators offer a network comprising mentors, investors, industry experts, and fellow entrepreneurs, alongside their physical facilities. Startups can enhance their likelihood of success by acquiring valuable insights, guidance, and potential collaborations from this network.
5. **Advantages of incubation programs:** Startup incubators generally provide a structured framework that encompasses mentorship, seminars, training sessions, and networking opportunities. The programs aim to offer entrepreneurs guidance and support in various domains, including product development, marketing, financing, legal compliance, and company strategy.
6. **Application process:** Startups generally need to navigate a stringent application and selection process to be eligible for participation in an incubator program. This guarantees that the incubator can offer appropriate support and resources to entrepreneurs most likely to benefit from the program. The application process typically comprises interviews, a pitch deck, and a business proposal.
7. **Incubation period:** The incubation period varies significantly, spanning from several months to multiple years, contingent upon the program's specifics and the firm's requirements. At this stage, startups are required to achieve specific objectives and demonstrate substantial progress in their business development.

8. Post-incubation support and graduation: Upon completion of a successful incubation period, a business may qualify for post-incubation assistance. Many incubators continue to offer their graduates ongoing support via alumni networks, resource access, and connections to potential investors or clients.

Startup incubator programs offer office space among various services they provide. The provision of physical workspace, alongside other resources and support services, facilitates entrepreneurial ventures and enhances the likelihood of success.

3.32.3 Support for branding and marketing from a business incubation program

If business owners want to make a strong branding and marketing plan, a startup development program might be able to help. A business development program could help with branding and marketing in the following ways:

1. Advice and mentoring: One of the best things about joining a business incubator program is that you can get help from experienced teachers who can teach you a lot about marketing and branding. Because these teachers have usually been through the startup process themselves, they may be able to give you tips on building a strong brand, finding your ideal customers, writing catchy marketing messages, and making a complete marketing strategy.
2. Chances to meet new people: Startup programs often give entrepreneurs access to a lot of chances to meet new people. Some examples of these are conferences, events in the industry, and chances to meet other business owners, investors, and possible buyers. As well as making important connections, these events help entrepreneurs raise awareness of their brand and get their name out there.
3. Easy access to resources: Startup incubator programs can give entrepreneurs a lot of different resources that can help with their branding and marketing efforts. Some of these resources could be help with writing content,

marketing software and tools, graphic design services, and even friends in the media and public relations. These tools might help new businesses make content that people want to read, professional branding materials, and messages that reach the right people.

4. Training and workshops: A lot of startup development programs offer training and workshops on different marketing and branding topics. Experts in the field usually run these workshops and can give you a lot of useful information and tips on things like market research, customer segmentation, branding strategies, digital marketing, social media marketing, and digital marketing. Business owners can learn new skills and information that will help them sell their brands better by going to these classes.
5. Feedback and validation: People who are part of a business startup program can get feedback and validation on their marketing and branding plans at regular check-ins and pitch sessions. This information can be very helpful for improving marketing plans, finding trouble spots, and learning more about how potential buyers see the business. Startups can better reach their target audience by incorporating this feedback into their marketing plan. This will help them improve their positioning and message.
6. A place to work together: When entrepreneurs join a business development program, they can work together and learn from people who are interested in the same things they are. Startups can get new ideas about branding and marketing by talking to and sharing their experiences with other business owners. Businesses may be able to come up with unique and effective marketing plans in this joint setting that encourages new ideas and creativity.
7. Chances to get money and invest: Startup development programs often have connections with places to get money and invest. New businesses can meet possible investors through a program. These investors might give them the money they need to support their marketing and branding efforts. To reach more people, this money could be used to support advertising efforts, hire marketing experts, or create targeted marketing campaigns.

So, a business incubator program could be a big deal for companies who want to improve their marketing and branding. These programs may help businesses make a strong marketing plan that fits with their brand's vision and goals by giving them workshops, feedback, chances to network, guidance, and the chance to work together.

3.32.4 Assistance provided by a startup incubator programs with legal and regulatory issues

Legal and government problems can be helped by programs that help new businesses grow. It can be helpful in the following ways with these programs:

1. **Access to Legal Expertise:** Many startup incubator programs work with law firms or other legal professionals to offer their services to businesses who are a part of the program. These professionals may be able to help leaders get around the complicated legal system by giving them advice, writing contracts, and making sure rules are followed.
2. **Workshops and educational sessions:** Business incubator programs often offer workshops and educational sessions on law and regulatory issues that businesses need to know about. These classes cover a lot of different topics, like intellectual property, data safety, employment law, and running a business. Founders can avoid legal problems and make smart choices by going to these workshops and learning useful things.
3. **Chances to network:** Startup incubators provide a working space where entrepreneurs can connect with investors, mentors, and other workers in the same field. When it comes to legal and regulatory problems, this network is very helpful. Because of these links, founders can get tips on how to run their businesses best, be put in touch with lawyers, and hear from people who have been through similar problems.
4. **Ties with the government:** Some incubation programs have built ties with government regulators and agencies. These ties could be very helpful for startups as they learn how to deal with regulations. Incubators help

entrepreneurs get in touch with important decision-makers, make it easier for them to talk to each other, and give them the chance to change laws that help the startup environment as a whole.

5. **Help with funding:** Following the law and regulations can be expensive for new businesses that don't have a lot of money. A lot of incubator programs offer grants or money that can be used for legal fees. Startups can use this money to pay for things like legal advice and study on regulations that are needed to stay in line.
6. **Advice and mentoring:** Startups are often paired with experienced teachers through incubator programs who have already dealt with legal and regulatory issues in a good way. These mentors can share their experiences, give you useful information, and show you how to handle legal problems in a good way. Entrepreneurs can benefit a lot from having a guide who knows how the rules work.
7. **Access to Common Infrastructure and Resources:** Most of the time, incubator programs give businesses access to common infrastructure and resources, like office space, software tools, and law templates. Startups can make sure they follow the rules, save money, and speed up the legal process by using these tools.
8. **Startups that have passed a good incubation program may get more trust from investors.** Investors usually prefer to put their money into companies that have had help and advice from a reputable startup. These programs help startups with legal and regulatory issues, which may make them look more trustworthy to possible investors.

Finally, founders who are having trouble with the law and regulations might find business incubation programs very helpful. These programs offer a complete way to deal with the complicated legal system, including cash help, chances to meet other people, access to legal experts, and learning materials. By using incubator

programs, new businesses can lower their legal risks, make sure they're following the rules, and focus on growing their business with confidence.

3.32.5 Assistance provided by a startup incubator program with product development

A startup incubator program can be very helpful for startups as they work on making new products. Incubator programs for new businesses can help with product growth in the ways below:

1. **Mentoring and Guidance:** One of the best things about joining a startup incubator program is that you can get help from experienced business teachers. When it comes to testing, prototyping, product design, and market research, among other things, these mentors can give you useful help and direction. Entrepreneurs may be able to use their knowledge to make smart choices at every stage of the product development process and avoid making common mistakes.
2. **Access to Resources:** Through incubator programs, new businesses can often get a lot of different resources that can help them help their products grow. This could include both digital and physical resources, such as software tools, data analytics platforms, and market research databases. Physical resources include things like equipment, meeting rooms, and office space. They don't have to be bought independently, so startups that have access to them can save money and get their products to market faster.
3. **Networking:** Startup centres bring together business owners and experts in the field who all want to reach the same goals. So, startups have a lot of chances to meet possible customers, partners, and investors. When it comes to product creation, these connections can be very helpful because they can lead to useful market information, collaborations, and helpful criticism that can change how a company makes its products.
4. **Feedback and Validation:** Startups can often get feedback from a wide range of partners and make sure their product ideas are sound through incubator

programs. This could mean talking to teachers, other entrepreneurs, and people who work in the same field as you about your product in focus groups, customer surveys, or pitches. Businesses that use this validation and feedback process to improve their products based on real-world data and market demand have a better product launch in the long run.

5. **Workshops and Training:** Most startup centres offer a range of product development-focused workshops and training programs. Some of the things that could be covered are lean startup strategies, product management, user experience design, and rapid development methods. By taking part in these classes, entrepreneurs can learn the skills and information they need to effectively oversee the product development process. Also, people who go to seminars usually get to use tools and frameworks that can be added right away to the product development efforts of a business.
6. **Chances to Get Money:** A lot of business incubators know funders and venture capital firms. By giving businesses access to their investor networks, pitch events, and investor connections, they can help businesses get the money they need to develop new products. Product development needs money because it lets businesses grow, hire new workers, test the market, and put money into R&D. By giving companies access to money through a startup program, the time it takes to make a product can be cut down by a large amount.

In conclusion, a startup incubator program can help the growth of products in many ways. Entrepreneurs can get a lot of help from these schools as they go through the difficult process of making and selling a successful product. They can offer anything from workshops and training to ways to get money, meet new people, get feedback and validation, a mentor, and access to tools.

3.33 Funds provided by startup incubator programs

Startup incubators help early-stage startups with tools, networking, mentorship, and capital. Many incubators offer financial support to entrepreneurs,

though rules and amounts vary. Only certain incubators give money. Startup incubator programs offer capital in several ways as follows:

1. **Seed finance:** Incubators often receive seed donations. Startups may receive a specific sum from incubators to launch. The startup's seed money can be used for product development, marketing, hiring, and other early expenses.
2. **Stock Investment:** Some incubators provide stock investment as supplementary funding. In exchange for capital, the incubator receives a certain percentage of startup stock. An investment agreement between the incubator and startup splits risk and profits.
3. **Non-dilutive money and grants:** Some incubators give entrepreneurs non-dilutive funds. These benefits are available to startups without equity. Instead, they fund research and development, market validation, and product testing.
4. **Investor Networks:** Many incubators offer startups access to their investor network in addition to direct funding. Potential investors may attend meetings, pitch events, or demo days. Incubators help entrepreneurs find outside finance by connecting them with investors.
5. **Corporate Sponsorship and Partnerships:** Many incubators partner with large companies to fund fledgling ventures. Corporate sponsors may invest in or grant start-ups that meet their strategic goals or have the potential to change their industry.
6. **In-kind assistance:** Sometimes incubators give entrepreneurs office space, equipment, software licenses, and other resources in lieu of financial support. Incubators assist firms save money by delivering these services at low or no cost so they may focus on other important tasks.
7. **Company Development Support:** Incubators help startups with company development as well as financing. They provide workshops, training, mentorship, and professional advice to help entrepreneurs improve their

company models, operations, and chances of success. Helping the startup get investors or form alliances may indirectly boost its finances.

Remember that not all business incubators fund. Some incubators only offer materials, guidance, and coaching. Startups must evaluate each incubator's features to ensure they meet their aims and budget before applying.

Few business incubators provide entrepreneurs money, but many do. Incubators help early-stage businesses get grants, equity investment, seed money, investor networks, corporate collaborations, and in-kind support.

3.34 The duration of time a startup incubator program offers assistance

Startup incubator programs offer resources, mentorship, and assistance to help early-stage businesses expand and thrive in their sector. Depending on their structure, these programs often last anywhere from a few months to two years. When calculating the average length of a business incubator program, take into account the following factors:

1. **Duration of the Program:** Incubation programs for startups typically last three to six months. Startups receive a lot of support and direction during this time in their early stages. After every cycle, it makes it possible for the incubation program to allocate its resources to new entrepreneurs in an efficient manner.
2. **Cohort-based Approach:** A number of incubator programs bring in a group of entrepreneurs who work together to complete the program. This tactic fosters community, encourages teamwork, and facilitates experience sharing across entrepreneurs. The program duration is determined by the cohort requirements and incubator milestones.
3. **Accelerator Programs:** As accelerators, some startup incubators have shorter durations. For three to four months, accelerator programs offer intense support and direction with an emphasis on rapid growth and scaling. These

programs' "bootcamp" methodology encourages entrepreneurs to hit goals as soon as possible.

4. **Extended Programs:** While some programs go longer, the majority of startup incubators run between three and six months. These programs offer resources, coaching, and ongoing support to startups for a year or two. Businesses with more complex business strategies or longer development cycles tend to have longer programs.
5. **Post-Incubation Support:** Following the first program, several incubators offer assistance to startups. Examples include networking, investor relationships, mentorship, and resources. Depending on the incubator, post-incubation care may last for months or years.
6. **Tailored Programs:** In addition to their standard duration, several startup incubator programs provide customised programs to meet startup needs. Depending on the demands and success of the startup, these programs might be shortened or extended.
7. **Geographic Variations:** The length of startup incubation programs varies by region. Program length in various countries may be impacted by logistical or cultural factors. Some programs in some countries may be shorter due to a lack of funding or an industry focus.

Programs for startup incubators usually run between three and six months. However, longevity may be impacted by the sector or area, launch objectives, and program structure. Entrepreneurs may find it easier to select an incubation program that suits their needs if they are aware of these factors.

3.35 Conditions for enrolling in a business incubator program

There are several eligibility requirements for startup incubators. These are some requirements that the majority of entrepreneurs must fulfil, while each incubator program has its own:

1. Development stage: Incubators have particular needs based on the stage of development of startups. While some incubators seek early-stage entrepreneurs with an idea or prototype, others favour companies with a minimum viable product (MVP) or initial market traction.
2. Business model: Companies with scalable, creative, and rapidly expanding business models are selected by incubators. They want to see a solid revenue plan and value offer for the company.
3. Market potential: Businesses chasing large, expanding markets are similar to incubators. They want to know if the business has identified an issue or a chance that could draw in a lot of clients.
4. Team composition: Incubators are interested in startup teams. They prefer startups with diverse teams who have expertise and abilities relevant to the sector. The team should be flexible and dedicated to the project.
5. Dedication and commitment: Incubators anticipate that companies will make active use of their resources and assistance. In addition to spending a lot of time on their startup, entrepreneurs also need to attend frequent meetings and training sessions.
6. Innovation and scalability: Incubators select businesses with innovative ideas and scalable technology. They seek to determine whether the startup has a competitive edge and offers a novel solution to a problem.
7. Intellectual property: To safeguard their concepts and innovations, several incubators mandate that companies get patents or trademarks.
8. Money: Businesses with early funding or investment are preferred by certain incubators. This confirms the company's development potential and demonstrates investors' interest in it.
9. Support and mentoring: Incubators look for business owners who are receptive to ideas. Startups ought to ask for help, learn from mentors, and heed recommendations.

10. Location: Some incubators require businesses to relocate to a specific city or region for the program, or they only accept enterprises from a specific area.

It's important to remember that the specific requirements of various incubator programs can vary greatly. Startups should review the website, application guidelines, and eligibility requirements of an incubator program before submitting an application.

3.36 Application process for a startup incubator program

Different steps and standards are needed for startup incubator applications. Getting an application is done in this way:

1. Find companies that are a good fit for the type of business you have, its stage, and your goals. Look for organisations that have a good name and have helped companies in your field in the past.
2. Make sure your company meets the program's requirements. Each incubator has its own set of requirements, so make sure yours do too. Startup stage (early-stage or growth-stage), business or sector specialisation, and location are some of the things that all of them have in common.
3. Get the application materials: Once you've chosen the incubators, get all the application materials. Business plans, executive summaries, pitch decks, financial estimates, and other important papers show how successful your startup could be.
4. Fill out an application online: Most startups allow this. Provide details about your company's product or service, target market, competitive edge, team members, and revenue or traction on the application form.
5. Send in the required papers: You may need to send in supporting documents along with your online application form. Some examples are a copy of your business plan, financial statements, articles of organisation, patents, and references or suggestions.

6. First screen and evaluation: When you apply, the incubator team will decide if your business is a good fit for their program. They might look at your application, talk to the owners, or ask for more information to figure out if your startup will work.
7. Choice and acceptance: Most promising startups will join the incubator after screening. If your startup gets selected, you'll receive an acceptance letter or email with program regulations, resources, mentorship, and money.
8. Once you've been accepted, you can begin the incubation program by setting goals and targets and signing legal agreements.

How long the program lasts and what the goals are: The development program lasts between three and twelve months on average. To reach your goals, you will work with the incubator team and teachers. This could mean improving your business's plan, making an MVP, getting money, getting customers, or running more operations.

10. Help for graduates and people who have finished the program: startups that do well will leave the incubator. From some incubators, alumni may get coaching, a place to work with other people, or access to investment networks. These tools will help your startup keep growing after the program is over.

To get noticed among other business incubator applications, you need to do study, get ready, and make a compelling pitch. You can improve your chances of getting into an incubator program that can help your company grow by following these steps and giving a good presentation of your business's potential.

Startup incubator programs help grow and speed up potential businesses, which makes getting in tough. There are a lot of applicants to startup incubator programs for a number of reasons:

1. Fewer spots available: Startup incubator programs only have a certain number of spots, so there are more applications than spots. Because there

aren't many spots available, it's competitive to take on only the best and most promising companies.

2. High demand: Startup incubator programs are in high demand due to business and startup culture growth. High demand means more candidates than places, making things more competitive.
3. Competitive selection: Startup incubators select potential firms using tough criteria. These selection processes usually involve multiple interviews, pitch presentations, and due diligence evaluations. Selection committees seek organisations with innovative concepts, solid business plans, and market potential, and devoted teams.
4. Track record and traction: company incubators look at how well a company has done in the market. They look for businesses that are good at getting new customers, making money, or managing money. Startups that have been around for a while and have a history of success are more likely to be picked because they have more room to grow.
5. Unique value proposition: Startup centres like value propositions that are new and different. They want companies that can change markets or make new ones. Startups that are new, different, and innovative have a better chance of getting into development programs.
6. Team power: The strength and skill of the startup's team are also taken into account during the selection process. Incubators look for teams with a range of skills, knowledge in the field, and a history of success. Start-ups with strong, committed teams have a better chance of succeeding, which makes them more appealing to incubators.
7. Market potential: Startup incubators seek market-potential startups. They desire startups in fast-growing sectors or large markets. Startups that match market needs and have growth potential are more likely to be accepted by incubators.

8. Networking and resources: Startup incubators give entrepreneurs access to investors, teachers, and experts in the field. Incubators look for startups that can get the most out of the tools they offer. Startups that make it clear they need these tools and are ready to use them are more likely to be picked.

Startup incubator programs are very competitive because there are only a few spots available, there is a lot of interest, the selection process is tough, and the programs focus on things like track record, market potential, team strength, unique value offering, networking, and making the most of resources. If your company is unique, it has a better chance of getting into a startup incubator program.

3.37 Startup incubator programs for existing businesses

Companies that are already up and running can join a startup development program. Take a look at these important points:

Someone once said that a startup incubator program is a place where early-stage businesses can find a loving and supportive environment. It helps businesses grow and succeed by giving them a variety of services, chances to network, advice, and sometimes even money.

Most of the time, people think that startup centres are only for new businesses. But the definition has changed, and now many incubators take on existing businesses that want to grow, change direction, or get more money.

Benefits for current businesses: There are a number of reasons why it may be a good idea for current businesses to join a startup incubator program.

- A. Resources: Most incubators provide tools, office space, software licenses, and marketing assistance. These tools help companies cut costs and grow faster.
- B. Advice and support: Many incubator programs offer experienced advisors and professors who can help. Established businesses that need expert support with planning, operations, financing, and marketing may benefit.

- C. **Networking:** incubators allow businesses to work with other entrepreneurs, startups, and industry specialists. This could lead to partnerships, new clients, and internal company relationships.
- D. **Funding:** Some incubators invest directly or connect companies with investors. This may benefit established businesses that want to expand or add new offerings.

Conditions for joining: Each startup program may have its own rules about which companies that are already up and running can join. In general, they might look at things like how the business can be scaled up or down, its growth potential, its present business strategy, and how well it fits with the incubator's main areas of focus or knowledge in the industry.

How to Apply: Companies that are already in business and want to join a startup incubator program usually have to fill out an application. Usually, this means sending in financial papers, a detailed business plan, and any other paperwork that is needed. To see if the company is a good fit for the program, they may also need to give a pitch or be interviewed.

Thoughts and problems to solve: There are many good things about joining a business startup program, but it's also important to think about the bad things that could happen:

- A. **Shares or fees:** Some incubators may require shares or fees in order to join. Firms should carefully read the terms and conditions of any program they are interested in before agreeing to it.
- B. **Being able to change and adapt:** For established businesses to meet the incubator program's needs or goals, they may need to change how they do business, their strategies, or even their business models. You might need to be able to shift and be open to change in order to do this.

Examples of companies that are currently taking part in development programs: A lot of successful businesses have joined startup programs to improve

their chances of growing. For example, Uber, the huge ride-hailing service, was a member of Y Combinator, a San Francisco-based business startup, in its early years. This example shows the possible benefits that startup programs could have for businesses that are already up and running.

To sum up, companies that are already in business may definitely join startup incubator programs to get access to money, networking chances, guidance, and other resources. An established business can grow and be more successful by taking part in an incubator program, though each program may have its own wants and concerns.

3.38 Challenges Incubators face when assisting new businesses

Business incubators have a number of difficulties while supporting new businesses, despite their vital role in supporting entrepreneurs. These challenges may make it more difficult for them to offer helpful assistance and affect the overall success percentage of companies. Among the main difficulties are:

1. Financial Limitations

Due to their reliance on government funds, business sponsorships, or scant investor support, many incubators have financial difficulties. The standard of startup funding prospects, infrastructure, and mentoring are all impacted by a lack of long-term financial resources.

2. Startups Have Limited Access to Investment

Although incubators help businesses find investors, not all of them are able to obtain venture capital or seed money. It can be challenging for early-stage entrepreneurs to raise money since investors frequently favour companies with demonstrated commercial potential.

3. Varying Quality of Mentoring

Not every incubator has access to seasoned business executives or excellent mentors. Startups could get general guidance that doesn't address their unique business issues.

4. High Rates of Startup Failure

Despite incubation help, many firms fail due to market uncertainties, financial mismanagement, or problems with product-market fit. It may be difficult for incubators to hold onto and assist firms that are not developing as planned.

5. Insufficient Industry-Specific Materials

Some incubators are less useful for businesses in deep tech, manufacturing, or healthcare since they don't provide sector-specific support, specialised infrastructure, or technology. Advanced R&D facilities are sometimes needed by industry-focused businesses, which ordinary incubators might not offer.

6. Startups' Scaling Challenges

Although they might not have formal initiatives for scaling and expanding, incubators concentrate on early-stage creation. Due to a lack of post-incubation support, startups may face difficulties after exiting the incubator.

7. Administrative and Bureaucratic Obstacles

Startup success may be delayed at government-backed incubators due to administrative inefficiencies, regulatory obstacles, and slow decision-making. Entrepreneurs may be prevented from participating in incubator programs by excessively complicated application and reporting procedures.

8. Saturation and Competition in the Market

Due to the expansion of incubators and accelerators, entrepreneurs now have many options, which makes it more difficult for certain incubators to draw in high-potential businesses. Competitive incubator ecosystems can result in problems with resource allocation and dispersed support.

9. Limited Partnerships and International Exposure

Startups are unable to reach foreign markets, investors, and collaboration prospects due to the absence of global connections of certain incubators. Startups'

chances of growing outside of their native markets are diminished by a lack of cross-border partnerships.

10. Talent and Resource Retention

It might be difficult for incubators to draw in and keep qualified experts, such as industry experts, business coaches, and mentors. Additionally, startups may experience a lack of talent, which could hinder their capacity to grow.

Although business incubators offer companies invaluable assistance, resolving these issues is crucial to optimising their efficacy. Incubators can increase startup success rates and better support new businesses by strengthening their financial stability, improving mentorship programs, offering specialised resources, and cultivating stronger investor networks.

3.39 Difference between an accelerator program and an incubation program for startups

1. Meaning and Objective:

An incubator program for new businesses is meant to help them in the early stages of their growth by helping them improve their business ideas and plans. To help businesses grow and be successful, the focus is on providing a supportive environment, chances to network, tools, and guidance.

Acceleration programs are one kind of program. It is intended for companies that already have a ready-to-sell good or service. An accelerator's primary objective is to accelerate these businesses' growth by providing them with funding, in-depth coaching, and connections to potential customers and industry experts.

2. The start-up phase:

Incubator Program: Incubators help new businesses from the very beginning, when they are just coming up with ideas. All kinds of startups are accepted, even ones that only have an idea or a prototype. The most important things

are a minimum viable product (MVP), market study, and improving the business model.

Accelerator Program: On the other hand, accelerator programs are for new businesses that already have a product or service and a clear plan for how they will reach customers. They focus on helping the startup grow and quickly reach its goals for rapid growth. Startups that get into accelerators are usually further along in their growth and have already tested their idea a bit.

3. Intensity and Length:

Incubator Program: These programs last longer, between six months and two years on average. During the development phase, startups can work on their ideas and lay the groundwork for their business. Incubators usually give entrepreneurs less detailed help, letting them move at their own pace.

Program Accelerator: Program accelerators, on the other hand, are stricter and have stricter time limits. Most accelerator programs last between three and six months. Startups go through a structured program at this time that helps them grow faster. It includes workshops, mentoring talks, and events where people can meet each other and network. Startups have to meet certain program goals, and things move quickly.

4. Investing and getting money:

For Incubators: Businesses may or may not get cash from incubators. Instead, they focus on giving people access to tools, possible investors, and mentorship. Incubators often keep relationships going by putting entrepreneurs in touch with angel investors, venture capitalists, and other sources of funding.

Accelerator Program: Most of the time, accelerators give entrepreneurs both investment and funding choices. They offer seed cash, which can come in the form of grants or equity investments, to help businesses cover their start-up costs. Also, accelerators often have a network of donors who are actively looking for ways to put money into the businesses they help.

5. For Advice and Help:

Incubator Program: Help and mentoring are very important to incubators. As a result, they connect new businesses with teachers, experts in the field, and experienced business owners who can help them get started. Mentors help startups get past problems by giving advice and talking about what they've done.

Accelerator Program: These programs sometimes offer advice and help, but they tend to focus more on specific areas and business growth. Accelerator mentors, who are usually experts in the field, give tips on how to make products, plan for the market, and grow businesses. The guidance is usually more in-depth, and it is tailored to meet the specific needs of each company.

Both startup incubator and accelerator programs aim to assist businesses; however, they differ significantly in their focus areas, duration, intensity, financial support, and the level of guidance provided. Incubators frequently assist startups during their formative phases by providing a nurturing and supportive environment for the development of their business concepts. Accelerators collaborate with companies that possess an existing product or service, aiming to enhance their growth through targeted mentoring, financial support, and valuable industry connections.

3.40 Startup incubator program for international startups

Startups from all over the world can join business incubator programs. They give the new businesses

Around the world: Many startup centres let companies from all over the world join because they see things from a global point of view. They know how important diversity is and how different points of view and ethnic backgrounds can lead to new ideas.

Networking chances: If international business owners join a development program, they may be able to take advantage of valuable networking chances. They can meet investors, mentors, and other business owners who can help them, give

them tips, and even work with them. This can be very helpful for business owners who want to enter new areas.

Access to services: Many incubators provide young entrepreneurs a variety of services to help them succeed. This group may provide office space, hardware, software, legal and financial assistance, marketing and PR assistance, and more. These documents can help international startups who struggle to launch and grow in a new country.

Mentorship & Guidance: Many incubators offer mentoring from seasoned businesspeople and industry experts. Foreign startups unfamiliar with local company laws and conditions may benefit from this. Mentors can offer advice and help you solve new market issues.

Opportunities to Get Funds: Many startup centres collaborate with venture capitalists and investors to help startups secure funding. Foreign enterprises that have problems obtaining local investors or can't get some investment because they're from another country may benefit from this.

Getting smarter and better at things: Global startups that need to adjust their business model or learn about regional buying habits and market trends can benefit from this.

Market validation and growth: An international business can test their idea and establish notoriety by entering an incubation program. The incubator's tools and help allow companies to improve their product or service, test it in the market, and make modifications based on customer feedback. Foreign startups' prospects of success and development can improve considerably.

Cross-Cultural Collaboration: Development programs allow startups from different countries and cultures to collaborate. This offers many learning opportunities and can lead to unique partnerships and ideas that assist business owners gain clients and enter new industries.

Because of this, companies from other countries can apply for a startup incubator program. By doing this, they can get access to tools, funding, mentorship and guidance, networking opportunities, the chance to improve their skills, the chance to prove their worth in the market, and the chance to work together across cultures. No matter where they are located, incubators provide a safe place for businesses to grow.

3.41 Some well-known startup incubators around the world

Startup incubator programs are well-known all over the world. They have helped new businesses grow and are still going strong. These programs help new businesses grow by giving them money, chances to meet other business owners, mentoring, and useful information. Here are some of the most well-known startup incubators in the world:

1. **Y Combinator (United States):** Y Combinator is known as one of the best places in the world to start a business. It is in Silicon Valley and has helped start up well-known companies like Reddit, Dropbox, and Airbnb. People who join Y Combinator's three-month program get access to a large network of investors and business owners, as well as coaching and starting money.
2. **500 Startups (United States):** This global organisation has helped more than 2,500 companies get off the ground and has invested in them as venture capitalists. It gives advice, start-up money, and connections to a big group of experts and donors. Some well-known companies that have taken part in the program are Canva, Udemy, and Credit Karma.
3. **Based in the United States Techstars:** Techstars is a training program that takes place all over the world. This helps new companies get money, advice, and a network of investors and managers with a lot of experience. Sphero, SendGrid, and ClassPass are just a few of the companies that Techstars has helped launch.
4. **Seedcamp (United Kingdom):** Seedcamp, a top European startup accelerator, offers a program that lasts a year and is open to selected startups. It gives

money, advice, and links to businesspeople and investors with a lot of experience. Businesses like Revolut, UiPath, and TransferWise are well-known ones that got their start at Seedcamp.

5. Station F (France): Station F in Paris is the world's biggest school for startups. It offers many services, including events, chances to get money, help from teachers, and a place to work with other people. Entrepreneurs from a wide range of fields have come to Station F to work with big companies and venture capital groups.
6. Start-Up Chile (Chile): This program, which is backed by the government, aims to bring foreign startups to Chile. Its six-month accelerator program gives startups access to a thriving startup environment, coaching, and cash that doesn't require them to give up any equity. Start-ups like SimpleCitizen, Zently, and Instacart have all been a part of the program.
7. Chinaccelerator: This is the first startup accelerator in the country. Its major goal is to help foreign companies that want to sell their goods in China. The program gives people money, advice, and connections with funders and business people in the same field. Chinaccelerator has helped companies like Bitmex, Pinduoduo, and InsurTech become successful.

JFDI.Asia (Singapore): JFDI.Asia is a program that helps startups get off the ground. It is based in Singapore. It gives you access to a network of investors and business owners, as well as mentoring and seed money, for three months. Some startups that have done well thanks to the JFDI.Asia scheme are Perx, Shopmatic, and TradeGecko.

9. Startupbootcamp (Netherlands): Startupbootcamp is a global network of industrial-focused startup mentors. It works in a number of places around the world and gives businesses access to a network of investors and business partners, as well as funds and advice. Startupbootcamp focusses on certain areas, such as FinTech, HealthTech, and Smart Cities.

10. Founders Factory (UK): Founders Factory is a London-based business incubator and accelerator. To assist entrepreneurs in scaling, it combines a six-month accelerator program with continuous funding and support. Founders Factory also works with other businesses to help them find new customers and learn more about their field.

These are just a few of the well-known startup development programs around the world. Each school helps entrepreneurs succeed in different ways by giving them different tools and chances. Entrepreneurs who want to establish their own businesses can think about applying to these well-known incubators in order to take advantage of their knowledge, capital, and industry professional network.

3.42 The types of businesses that startup development programs focus on

Some startup incubators focus on certain types of businesses to make sure they can help and equip growing ones. Of these fields, different startup programs pay attention to different things. However, most of them do pay attention to some of the same things.

The following areas are often the focus of startup incubator programs:

1. Technology: Well-known startup programs that focus on technology cover a wide range of topics, such as software development, block chain technology, artificial intelligence, cyber security, and virtual reality. Most of the time, these programs offer networking chances that are only available in the IT field, access to technical experts, and mentoring.
2. Biotechnology and healthcare: Both biotechnology and healthcare have grown, and so have programs that help new companies in these fields. Start-ups making cutting-edge telemedicine, biotech, pharmaceutical, medical device, and digital health apps can often get help and resources from these programs.
3. Sustainability and clean energy: Because of the growing focus on eco-friendly solutions, many incubator programs focus on companies that work

- with sustainable agriculture, waste management, green technology, and clean energy. These programs help entrepreneurs get in touch with investors and workers in the field and help them understand how the business works.
4. **Fintech:** The financial technology industry has grown a lot in the past few years, and as a result, many programs have sprung up to help new fintech companies. These classes can help you learn about peer-to-peer lending, digital banking, cryptocurrencies, online payments, and managing your own money, among other things.
 5. **E-commerce and retail:** E-commerce and retail companies are getting more attention from incubator programs because of the rise of online markets and changes in the retail scene. These courses teach students how to handle the supply chain, use marketing strategies to get new customers, and start successful online businesses.
 6. **Media and Entertainment:** People who work in media and entertainment can get help from programs that help them with digital marketing, video creation, virtual reality, augmented reality, and influencer marketing. Often, these shows give people who want to invest a look at the business, talk to people who work in the media, and get help from people who have experience.
 7. **Food and Beverage:** It can be hard for startups in the food and beverage industry. Specialised incubator programs can help by giving them tools in areas like food safety laws, marketing, distribution, supply chain management, and developing new food products. These programs can also help new businesses find investors or business partners in the field.
 8. **Social Impact:** Some incubator programs give priority to startups that want to do good things for society. These programs help fund projects that work to reduce poverty, improve education, make health care more accessible, protect the environment, and encourage social business. A lot of the time, they offer mentorship, connections to businesses and people in the social impact field, and ways to get money.

While most startup incubators focus on certain types of businesses, it's important to keep in mind that some programs are more open to businesses from all over the world. There may also be regional or local factors that affect the industries and themes that startup programs focus on. These could include the needs and strengths of the local business environment.

In conclusion, startup incubator programs are very important for helping new businesses grow. Because they focus on a specific industry, they can provide entrepreneurs in those sectors with specific help and tools.

3.43 Startup incubator program for solo entrepreneurs

Startup incubator programs are open to businesses who are working on their own. A solo entrepreneur is an individual who establishes and manages a business independently, without the assistance of associates or co-founders. They are in charge of the whole business, from coming up with ideas to putting them into action and beyond.

1. The pros of joining a development program for startups: Entrepreneurs can get a lot of help and tools from incubators, like chances to meet other business owners, office space, funds, mentorship, and advice from experts in the field. These benefits can be very helpful for a sole owner who might not have access to these tools otherwise.
2. Picking the best incubator: There are a lot of different incubator programs, and each one has different standards for entry and focus areas. Solo business owners should do their research and find a startup that meets their needs and helps them reach their business goals. Some important things to think about are the incubator's focus on certain industries, its location, the duration of the program, and any specific requirements or qualifications.
3. The application process: A startup who is working alone must go through the application process after finding a good incubator. Usually, this means sending in an application, a business plan, and rough cost estimations, as well as maybe going to a pitch or interview. These materials must be

carefully put together so that they show the company in the best light possible.

4. **Selection criteria:** The selection process is usually tough at incubators because they get a lot of applications from entrepreneurs who want to join their program. The selection factors can change, but they usually include things like how viable the business idea is as a whole, how well the team works together, how easily the business can grow, and how unique the business idea is. Solo businesses who want to improve their chances of being accepted can focus on highlighting these traits.
5. **Chances to work together:** One-person businesses may not have partners or co-founders, but joining a startup program could give them chances to work together with other businesses. This can lead to partnerships, sharing of resources and knowledge, and a group of people with similar interests.
6. **Advice and support:** Many incubators give entrepreneurs access to experienced advisors and teachers who can help them by giving them support and direction. These mentors can help the business grow faster by giving it useful information, contacts in the industry, and strategic advice.
7. **Ways to get money:** Many incubators give money through partner groups or their network of investors. This can help people who run their own businesses with just one person pitch their idea to investors and get the money they need to grow.
8. **Awareness and connections:** Business proprietors who operate independently can establish beneficial connections within the incubator program and through the incubator's broader network by participating in an incubator program. This exposure has the potential to result in new customers or clients, joint initiatives, and partnerships.
9. **Structure and accountability:** Working independently can occasionally be lonely and disorganised for a business. Enrolling in an incubator program that includes milestones, objectives, and consistent check-ins can provide a

sense of accountability and organisation. This has the potential to assist individuals who are self-employed in maintaining their motivation and focus.

In summary, it is feasible for one-person enterprises to participate in a venture development program. Solo businesses can enhance their likelihood of success and accelerate their expansion by leveraging the resources, assistance, and networking opportunities that these programs provide.

3.44 Parallel startup enrolling in multiple incubators

Startups can join multiple incubators. Several factors make this beneficial.

Startups can expand their investor, adviser, and mentor network by joining multiple incubation programs. Each program can boost a startup's reach and growth with its resources and contacts.

Different skill sets and knowledge: Startups can often find mentors and advisers with different skills and expertise through incubator programs. Participating in numerous programs gives organisations a greater perspective and information, increasing their chances of success.

Exposure to different markets and industries: Incubator programs can be tailored to specific markets. Participating in programs that expose startups to different industries may help them uncover new markets and development opportunities.

More financing options: Incubator programs sometimes provide grants, startup money, and venture capital to emerging enterprises. By participating in many programs, firms can increase their funding prospects by expanding their investor pool.

Credibility and validation: Multiple incubation programs can boost firm credibility and validation among partners, investors, and consumers. Being accepted into many programs shows that the firm has been evaluated by several organisations, which can boost confidence in its success.

Startups should consider the risks of enrolling in several incubator programs. Some things to consider:

1. Time commitment: Each program requires lectures, mentorship, and networking events, which can be time-consuming for entrepreneurs. Determine if the company has the bandwidth to fully engage in multiple programs without getting overburdened.
2. Program requirements: Incubator participation often has different rules. Startups should check each program's terms and conditions to ensure they can participate in several programs.
3. Stock dilution: In exchange for resources and expertise, certain incubator programs may mandate that enterprises surrender a specific percentage of their stock. It is imperative that organisations evaluate the potential implications of their participation in numerous programs on their ownership position.
4. Alignment with company goals: Startups should evaluate each incubator program's goals, objectives, and priorities against their own. Make sure enrolling in several programs will assist the startup's growth plan and avoid conflicting aims.

Overall, organisations seeking to expand and get more resources and assistance may benefit from many incubator programs. However, time commitment, program requirements, equity implications, and startup goals should be considered to ensure a successful engagement with each program.

Entrepreneurs may maximise startup incubation programs. These will help startups maximise their incubator program:

Find the finest incubator: Discover the many incubator programs in your region or industry. Find incubators with successful track records or industry expertise. Select the incubator that best meets your needs by considering its network, mentorship, and resources.

Before enrolling in the incubator program, set goals and outcomes. Create an MVP, get funding, or become well-known in the industry. Having clear goals helps you stay focused and utilise incubation resources.

A key benefit of an incubation program is access to experienced mentors and advisers. Ask these industry-savvy mentors for advice. They can provide useful knowledge, avoid common mistakes, and connect you with industry contacts.

Network with other business owners: Incubation programs enable you to connect with entrepreneurs who share your interests and work together. In order to optimise this network, participate in seminars, networking events, and peer-to-peer learning. Networking with other business entrepreneurs can lead to the formation of alliances, collaboration, and intelligent criticism.

Incubator programs often include workshops, seminars, and educational sessions on marketing, finance, and law. Take advantage of these opportunities to learn about startup-critical topics.

Incubators often have investor links, which might help you find finance. Utilise incubator funding opportunities to the fullest. Give investors a compelling argument for your firm.

Take advantage of incubators' equipment, labs, and offices. Use these resources efficiently to maximise their value. This can save money and provide you access to infrastructure a firm couldn't afford.

Monitor your success and make adjustments: Review your methods and goals throughout the incubator program. Get advice from consultants, mentors, and other business owners to better your company strategies. Be flexible to maximise the program and increase your chances of success.

Build a strong team: Gather talented and dedicated people that share your vision and abilities. Incubators offer employment listings and networking to help you discover team members. A good team increases your chances of success and maximises incubator resources and assistance.

The benefits of an incubation program continue after you leave. Stay in touch with incubator alumni. Attend alumni events, use your program connections, and seek mentorship. The incubator may support and guide your company as it grows.

These strategies can help entrepreneurs maximise their time in a startup incubator program and build a successful, lucrative firm.

3.45 Assistance from startup incubators with investor links

A business incubator can help you discover investors. Some reasons:

1. **Network Access:** Business incubator programs allow you to meet many investors. Incubators often know angel investors, VCs, and other funders. This network may help startups acquire funding.
2. **Mentoring and guidance:** Incubator programs typically offer mentorship and guidance from seasoned business owners and industry experts. Mentors can assist startups in refining their pitches to investors, enhancing their concepts, and establishing connections. Investor interest may be enhanced by knowledge and expertise.
3. **Many business incubators organise investor demo days** when startups can pitch investors. These meetings are often quite targeted, ensuring that entrepreneurs pitch their ideas to investors interested in their field or company plan. This increases the startup's chances of finding complementary investors.
4. **Credibility and validity:** A good business incubator program can boost a startup's credibility. Investors are more willing to consider startups that passed a rigorous selection procedure and were accepted into a reputed incubator. This can help you secure funding and investor meetings.
5. **Workshops, seminars, and networking:** Startup incubators often organise educational workshops and seminars. These events allow startups to network with investors and learn from entrepreneurial experts. Startups can improve

their company plans and funding possibilities by learning from these experiences.

6. **Consultants and guest speakers:** Successful businesses and industry experts often counsel or speak at incubator programs. Startups can benefit from the program's connections, skills, and insights. These professionals may help nascent enterprises obtain financing and link them with potential investors.
7. **Boosting Deal Flow:** Investors want promising companies. Startup incubator programs can boost investor interest and profile. Investors aggressively seek startup incubator investment opportunities. Incubators assist enterprises get investors by standing out.

In conclusion, business incubator programs may assist entrepreneurs find investors. These programmes give you access to investors, mentorship, pitching help, credibility, networking and educational events, industry experts, and more deals. Startups may boost their funding chances and growth using these tools.

3.46 Business scaling support from startup incubators

Startup incubator programs can help organisations expand. These programs give startups the resources, guidance, and support they need to grow faster and succeed. Startup incubators can help scale businesses:

Access to supportive Network: A startup incubator program gives you access to a supportive network of like-minded people. Business owners, mentors, investors, and industry specialists in incubators form a network that may provide invaluable advice, connections, and direction. This network may help entrepreneurs sell their products, find the best employees, and get investment.

Mentorship and Professional Advice: Incubator programs typically provide emerging enterprises with access to seasoned mentors and business leaders. These mentors, due to their startup expertise, can provide guidance on product development, marketing, team building, and finance. Their expertise aids emerging

businesses in circumventing typical pitfalls and facilitating informed decision-making for accelerated growth.

Incubator programs often offer personalised workshops and training to match entrepreneurs' needs. These courses address numerous topics, including business planning, financial management, sales and marketing, and legal difficulties. These programs equip firms with the knowledge and skills to grow.

Funding Opportunities: Growing a company requires hiring, marketing, product development, and infrastructure. Startup incubators connect startups to angel investors, venture capitalists, and government grants. Incubators' connections to investors can help startups get funding by arranging introductions and pitches.

Growing a company requires infrastructure and resources. Startup incubator programs provide coworking spaces, genuine office space, equipment, conference rooms, and high-speed internet to fledgling enterprises. This reduces startup costs and promotes collaboration and creativity.

Validation and reputation: A good business incubator program can boost a startup's reputation with investors, clients, and customers. Startups can earn credibility and boost their chances of getting clients and funding by going through a rigorous screening process and working with a respected incubator.

Marketing and Exposure: Startup incubators provide demo days, pitch contests, and events to introduce new businesses to investors, partners, and clients. These events can help startups promote their products and services and network. Marketing advice from incubators can help emerging enterprises create successful advertising campaigns and market-connecting strategies.

After the first program, several startup incubators offer continuous support. Help includes resources, networking, and mentorship. New enterprises facing growth challenges benefit from ongoing support.

To conclude, startup incubator programs promote growing enterprises. These programs provide entrepreneurs with support, coaching, specialist training, financial

possibilities, resources, validation, exposure, and long-term assistance to help them succeed.

3.47 Startup Eco System of Kerala

The startup ecosystem in India is expanding more quickly than it has in the past. There were 553 investment deals in the Indian startup ecosystem in 2019. It's also noteworthy that Kerala has become one of the nation's most popular startup locations. The Integrated Startup Complex in Kochi, which spans 1.80 lakh square feet and has amenities specifically designed for startups in various industries, was introduced by KSUM in January 2019. In addition to building this infrastructure foundation, the Kerala government promised to invest over INR 1,000 Cr in state businesses over the following four years. Kerala is currently seeing a plethora of entrepreneurial and innovative developments that have prepared the startup ecosystem for the next big step. Kerala is concentrating on development from the ground up by encouraging a do-it-yourself (DoIt-Yourself) culture in schools and providing mentorship from mini FAB Labs and IEDCs (Innovation & Entrepreneurship Development Centres) in colleges, in addition to having a unique model that links academicians, industries, R&D institutes, and startups in a way that no other state can match. These programs are designed to help young people cultivate an entrepreneurial attitude and prepare them to face the difficulties of starting a new business.

Kerala was appropriately called "The God's Own Country" because of its stunning beaches, backwaters, mountain ranges, and wildlife sanctuaries. Yet, Kerala wants to develop newer aspects of itself in the twenty-first century in order to become India's premier startup environment. Kerala Chief Minister Pinarayi Vijayan opened a 1.8-lakh-square-foot facility in January 2019 that houses incubation setups for a number of contemporary technology segments. Kerala would boast the largest startup and incubator area in the nation, spanning five lakh square feet, once three additional buildings are finished. Kerala's infrastructure is said to be suitable for the growth of a vibrant business environment because it has a dominant service sector and great road connectivity (4.62 KM per thousand inhabitants compared to the

national average of 2.59 KM). Furthermore, the state has been effective in creating a framework that recognises, develops, and encourages talent and creativity within itself.

Another way that Kerala's startup environment is different from other states is that, in contrast to Bengaluru, Delhi, and Mumbai, the state government has been at the forefront of Kerala's development as a startup hotspot. With 2,200 startups already operating (a 35% increase from 2018), more and more businesspeople are coming to Kerala to launch their projects. Additional factors that have been shown to be very helpful for launching a new company in the state include the comparatively cheap operating costs, the availability of trained labour, current technology, and the state government's programs and resources. In April 2006, the Department of Science & Technology (DST) approved the Technology Business Incubator, which is presently run by Kerala Start up Mission- KSUM, marking the first step in promoting the startup ecosystem. In addition to being the state's nodal government organisation for technology companies, KSUM is an incubation institution that uses a PPP (Private Public Partnership) approach to encourage young people to have an entrepreneurial mindset. 10,000 aspiring entrepreneurs are fostered by KSUM's numerous Innovation and Entrepreneurship Development Centres (IEDCs), which are spread throughout 230 technical colleges. Together with a number of other initiatives, this one has assisted the state in increasing the number of entrepreneurs developing scalable and marketable products, problem-specific solutions, and initiatives aimed at addressing societal issues.

3.47.1 Kerala Startup Economy- Key Highlights

- In order to expand Indian startups internationally, KSUM has partnered with international institutes, accelerators, and tech conferences.
- Under various Keralan government initiatives, up to 130 Keralan startups have expanded internationally.
- Over the next four years, the Kerala government has allocated more than INR 1,000 Cr in investments in state startups.

- KSUM opened the Integrated Startup building in Kochi in January 2019. It is a large building that spans 1.80 lakh square feet and has amenities specifically designed for different innovation sectors. Additionally, it is home to:
- The FOSS Incubator was created to make it easier for people to get Free and Open Source Software and to make sure that society benefits from FOSS innovations by supporting their social and economic growth and commercialisation.
- The STADE (Space Technology Application Development Ecosystem) was set up in Trivandrum, and startups from all over the world are joining this effort. Its goal is to support Free Software Businesses (FSB) that are socially and morally sound, make it easier for them to get into new markets, and promote innovation and business. There are more than 3800 registered startups.
- 60+ Private and State-sponsored incubators
- More than 100 Registered Mentors
- Twenty or more women-led startups and
- ten or more grassroots startups
- Students in higher education institutions can experiment on platforms provided by Innovation and Entrepreneurship Development Centres (IEDC). Students have access to top-notch facilities, technology, funds, and mentorship.
- The Keralan government has helped KSUM launch two MIT USA programs.
- Labs that fabricate electronics- Fab labs are platforms for technological prototyping in innovation and invention that are designed to encourage local entrepreneurship.

- September 2021 saw the introduction of KSUM Digital Hub. The Digital Hub serves as a single location for all software and hardware component product design and development processes.
- One of the biggest startup conferences in Asia, Huddle Global, is organised by KSUM
- Each year, investors, industry leaders, company founders, and government representatives gather at KSUM to talk about the startup environment.
- KSUM offers entrepreneurs all forms of assistance, including investment, incubation, acceleration, mentorship, and training.
- Collaborating with global institutions like the United Nations Development Program to implement accelerator programs. The Green Innovation Fund is an accelerator program that is intended to assist social impact startups in the development and expansion of businesses that have the potential to generate environmentally favourable and sustainable solutions.
- **Kerala's startup ecosystem was ranked as the best in India by the 2024 Global Startup ecosystem Report (GSER).** Kerala's ecosystem is five times larger than the world average, according to the report.
- According to the 2024 Global Startup Ecosystem Report (GSER), Kerala created a startup ecosystem worth \$1.7 billion in just 18 months until the end of 2023, five times the global average for that period.
- Kerala's startup environment is considered to be among the best in the country for a number of reasons:

3.47.2 State support

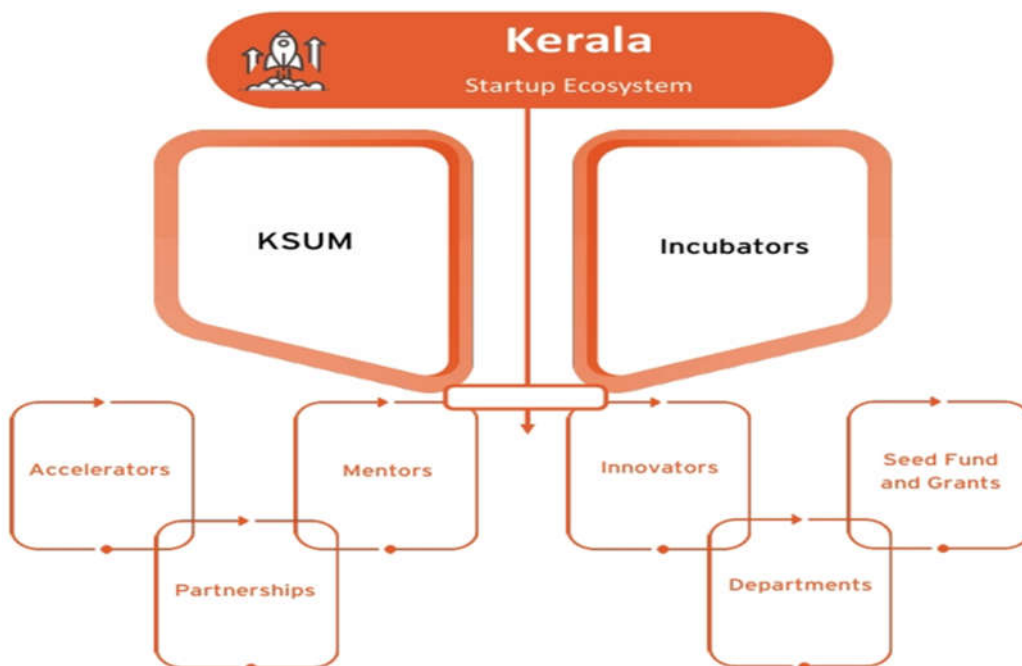
- More than \$12.1 million has been invested in equity by the Kerala Startup Mission (KSUM), and \$10.9 million has been set aside in the 2024–25 budget to improve the ecosystem.

- Technological proficiency
- Kerala has a large percentage of young people who know how to code, and women make up 45% of the tech park workforce.
- Digital assimilation
- Kerala was the first Indian state to declare internet access a fundamental right.
- Women-led businesses can receive pre-incubation, marketing, and incubation help from KSUM.

Supported by a strong network of incubators and a number of other ecosystem facilitators, KSUM acts as the State's principal hub for the startup ecosystem.

Fig 3.9

The flowchart of the Kerala Start up Ecosystem



(Source: Kerala Startup Ecosystem Report 2022)

3.48 Kerala Startup Mission

In 2014, Kerala became the first Indian state to adopt the Kerala Technology Startup Policy. To carry out the policy's requirements, the Kerala Startup Mission (KSUM) was established. Initiatives supporting startups were included by the Keralan government in the State IT Policy 2017. to adjust to the changing needs of startups (the core elements of the policy are shown in Figure B). In order to foster innovation-driven entrepreneurship, KSUM looks to academic institutions, research and development facilities, the general public, and rural innovators as potential sources of innovation. One percent of Kerala's budget has been set aside by the government to promote innovation and entrepreneurship inside the state.

An active startup environment was orchestrated by the Kerala Startup Mission, which played a crucial role in development. Keralan startups are pushing the envelope as they look to the future for answers to old challenges and develop innovative solutions. Entrepreneurs from Kerala have also been a shining example of global success stories. The software and IT industries aren't the only ones that have success stories. The new State IT policy of 2017 takes more proactive steps as a result of the 2014 technology startup policy of Kerala. Kerala Startup Mission introduced forward-thinking policies to create a dynamic start-up environment in the state to promote innovation-led technology entrepreneurship.

Kerala has supported uniform growth from its founding. Kerala's incubator and technical infrastructure development span multiple cities. Kerala Startup Mission and its sector-specific partners have 2200+ firms, 3 Lakh+ square feet of incubation space, 60+ incubators, 250+ innovation cells, etc. in cities and districts. Many of these facilities have contemporary hardware, biology, electronics, and computing labs. Kerala Startup Mission provides Grants and Seed Loans for early stage financing, although external investments are needed for faster growth. Kerala Startup Mission invented the Fund of Fund concept to invest in nonlinear growth firms' Alternative Investment Funds. This plan gives startups over 1000 Crore INR in investment money by committing less than 10% to various AIFs. Over twice as much was invested in Kerala companies last year. This early stage fund has helped

some organisations grow dramatically in the past year, which is encouraging. Kerala Startup Mission introduced forward-thinking policies to create a dynamic start-up environment in the state to promote innovation-led technology entrepreneurship.

Kerala Startup Mission encourages entrepreneurs to prioritise income over external financing. Startup Procurement Policy, which simplifies procurement for government departments to buy technology from startups, has been widely adopted. These policies help government departments improve services and create an internal market for State startup solutions. These creative policies are attracting seasoned entrepreneurs who went to other places to return to Kerala and start new businesses. This validates the government's efforts to lead the fourth industrial revolution. We believe Kerala Startup Mission may help Kerala exploit this technology-led tsunami of change to prosper economically and socially

3.49 Schemes and Programmes/ Events of KSUM for the promotion of Startups and Startup Eco system of Kerala

3.49.1 Schemes of Kerala Start up Mission

Fellowship from IEDC

A study was done by the Kerala Startup Mission and the ICT Academy of Kerala on how important IEDCs are for supporting the startup ecosystem at the college level. Top performers get handouts of INR 1 Lakh each, and the government gives fellowships that last a year to help people who are good at new technologies grow. To encourage talent, creativity, and entrepreneurship, these fellows work closely with a range of groups, such as the Kerala Startup Mission, IEDCs, and other groups.

MIT's Fab Labs

MIT researchers created Fab Labs, which are places with professional-grade electronics and manufacturing tools that let people design and build their own technology. With \$50,000 worth of tools and supplies, Fab Labs join 30 countries and 24 time zones of students, teachers, researchers, and innovators from around the

world. Fab Labs create a networked research and development lab by letting everyone use the same tools and methods.

Fab Lab Fab School Kerala is home to the Fab Academy, a six-month intensive course on Digital Fabrication. It is part of the world network of Fab Labs. The people who take part learn how to build machines, make electronics, program embedded devices, and use computers to cut things. At the end of the course, each member makes a final project that is graded on their technical skills and the documentation that they keep in the Fab Academy archive.

Great fab lab

A group from KSUM and the Massachusetts Institute of Technology in Boston, USA, opened the SuperFab Lab. When testing, designing, and making things at the Super Fab Lab, tools and materials are used that range in length from microns to meters. Setting up a Super Fab Lab in Kerala will help the state become a leader in advanced manufacturing. It will also help new technology-based small businesses grow and improve the current engineering education system.

Lab for Future Technologies

It gives businesses and students a place to learn about new technologies, like Google Cloud, AWS, and Digital Ocean credits, Zoho One access, and so on.

Days of work

The goal of the one-day classes, which happen every weekend, is to teach people the basics of the process and technology so they can move forward on their own.

Program for K-Accelerators

This three-month virtual accelerator program, which includes a one-week training program in Mumbai, is designed to give companies that are starting to make waves across the country a chance to get more attention. This program is being put together by KSUM and Zone entrepreneurs India to help entrepreneurs meet with

key customers and industry leaders, make sure their goods are viable on the market, and make connections with possible investors.

Partner Development Program for Startup Communities

In Kerala, the SCPDP wants to create an environment for startups that works for everyone. To do this, KSUM has set up a network of entrepreneurs, innovators, maker groups, investors, students, professionals in the field, government officials, and academics who work together and share their experiences. This creates an environment across the state that supports and encourages innovation. Building people's skills can be pushed at the local level by working with community partners to hold classes, seminars, leadership camps, conversations, and mentoring sessions for students. KSUM helps community partners put on these events by giving them money and technology support.

Industrial Connections

Startups in the growth stage frequently struggle to stay up to date with the demands and conditions of the industry. At the same time, big businesses require startups that can assist them in creating and implementing innovative technology. By helping startups locate corporates with whom they might collaborate to create innovative solutions, industrial connects help close this gap. These connections are facilitated by KSUM through a variety of events and programs.

The Handicrafts Artists Assistance Scheme (ASHA)

The "Entrepreneur Assistance Scheme in Handicrafts" was superseded by the Assistance Scheme for Handicrafts Artisans (ASHA), which seeks to unify the handicrafts industry's artisans under a single program for obtaining grant assistance for starting handicrafts businesses. Once the business has been put into operation and EM Part II/Udyog Adhar has been filed, support is also given to qualified candidates in the form of grants.

Kerala Blockchain Academy

A government program called the Kerala Blockchain Academy (KBA) offers blockchain training across multiple industries. In response to the increasing demand for these abilities, KBA offers a technological training program called Accelerated Blockchain Competency Development (ABCD).

Kerala Development and Innovation Strategic Council (K-DISC)

The development of cutting-edge technology and the future readiness of Kerala's economy are the focus of the think tank and consulting group K-DISC. K-DISC is committed to offering State Government departments effective, future-ready solutions. The following are important areas of concern:

1. Artificial Intelligence
2. The Internet of Things
3. Virtual reality
4. Augmented and Virtual Reality
5. Learning by machine

3.49.2 Events conducted by Kerala Start up Mission

Data Innovation Challenge

Thirty people participated in the 54-hour TechStars Startup Weekend Women program at ISC, Kochi. Seven mentors assisted the participants in developing strategies to make Kochi more welcoming to women-startups. The participants were assessed by a distinguished panel.

International Entrepreneurial Exchange Programme

This set of programs, which are geared at established startups, aims to introduce them to the largest tech hubs in the world, including Silicon Valley, London, Tokyo, Tel Aviv, and others, as well as to facilitate connections with global

industry leaders and entrepreneurs. Up to INR 1 lakh is refunded to startups for each program.

Startup boot camp

A half-day business bootcamp and marketing mentorship sessions were arranged by Kerala business Mission in collaboration with TiE Kerala. Vedanarayanan Vedantham, vice president of marketing at HealthifyMe, gave the very educational training. The more than forty attendees gave the event a very positive review.

Marketing Boot camp

At the world's largest mobile event, the Mobile World Congress, eleven Kerala teams took part. During the four-day exhibition in Barcelona, the teams showcased their inventive products. Seven of the eleven teams were sponsored by KSUM.

Meet up Cafe

Meet Up Cafe is a platform designed to connect government officials, academics, investors, industry leaders, and innovators. More than 100 people attended the Meet Up Cafe, which was held in Kochi's Integrated Startup Complex.

The Malabar Business Summit

Maker Village in Kochi hosted the second National Deep Tech Startup Conclave, Hard Tech 2019. Speakers from multinational tech companies, business executives, entrepreneurs, and academics from IIM Bengaluru, the University of Texas, and ISB Hyderabad attended the two-day event. Technology, entrepreneurship, and innovation were the main topics of debate.

Idea Fest

Idea Fest and other events put on by the Kerala Startup Mission encourage young people to come up with new ideas. The Idea Fest only encourages creativity and business at colleges and other schools in the same state. The first Idea Fest took

place in April 2019 and had representatives from EY, the National Institute of Speech and Hearing, Fenestra, Resnova, and Reap Benefit. Students were asked to solve problems in software, computer security, and clean energy. Resnova gave cash prizes, while EY offered internships to the best pupils. Every student had a mentor and got comments on their ideas. A group of experts judged the finalists' prototypes, and ideas that got innovation funds were chosen based on how far along they were in the development process. Student makers got help in the lab and advice on how to turn their ideas into businesses.

Huddle Kerala

Top-tier investors, executives, and the media, as well as entrepreneurs and tech talent, congregate at Huddle Kerala. In order to help startups meet with the right investors and corporates, the conference includes stage programs, side activities like roundtable discussions, networking sessions, and facilitated workshops. Investors, serial entrepreneurs, and successful founders have all spoken in the past. Huddle India's mission is to support the growth and success of the next generation of globally dominant startups.

Seeding Kerala

Investors are the focus of this two-day event. A general track for all registered startups and a track specifically for investors are held on the first day. The state's promising companies are open for viewing via the HNI network and investors nationwide.

Elevate: The Investor Education Programme

A themed workshop called Elevate is being held as part of the Seeding Kerala event. These workshops are held in each of the industries that have been recognised, including hardware and electronics, deeptech, healthcare, and rural and social enterprises. These are intended to assist new businesses in being more visible to potential investors. On the other hand, professional communities' prospective investors learn more about startups' initiatives. IEDCs certify college concepts.

Management Development Programmes for Startups at IIMK & IIM Bangalore

In collaboration with the Indian Institute of Management - Kozhikode (IIM-K), KSUM hosts a five-day residential Management Development Program for startup entrepreneurs at IIM Kozhikode with the theme "Aspire, Change, and Transform" (ACT). This program helps startup entrepreneurs overcome the obstacles they may encounter when growing their firms by filling in some of their major competency gaps. The MDP's goal is to enable participants to overcome any competency or skill gaps in this context and turn their startup into a sustainable business model.

The IEDC Summit

Several IEDCs throughout Kerala to exchange ideas and learn more about the entrepreneurial scene. In addition to participating in panel discussions where they discuss how they overcome various obstacles, highly motivated entrepreneurs from all around the nation are invited to participate in the keynote presentations, where they share their experiences to motivate the audience. At the same time, learning stations are positioned close to the main stage, where students can showcase their work and exchange expertise with tech communities, capacity building initiatives, and KSUM officers. On August 23, 2016, the inaugural IEDC Summit was held at the Girideepam Convention Centre.

Women Startups Summit

The Women Startup Summit is a KSUM project that aims to create an inclusive entrepreneurship environment in Kerala and inspire aspiring women professionals to pursue entrepreneurship. The summit provides a shared forum for policy makers, startup founders, successful women leaders, and aspiring female entrepreneurs to exchange experiences, goals, and success stories. Through knowledge-based discussions, motivational anecdotes, and one-on-one engagement, the summit is aimed to give ambitious women entrepreneurs and startup founders incredibly fresh ideas.

Investor Cafe

Startups seeking funding have the chance to meet investors and secure funding through Investor Cafe. For entrepreneurs looking to raise money, it provides one-on-one speed dating. VCs and angel networks from all around India. Every month on the last Wednesday, it is held in Kochi. Startups can apply before the tenth of each month if they want to raise money for expansion.

Assistance for women Entrepreneurs: Pre-Incubation Assistance

Women-led startups will receive Pre-Incubation Support in their early phases. For three months, there will be free pre-incubation support that includes technical assistance, mentorship, and incubation. This program will include two cohorts of ten startups that are exclusively for women. The pre-incubation exercise will be carried out under the Youth Entrepreneurship Development Program's "Incubation" component.

Government as a Marketplace

The state government supports potential technology firms coming out of Kerala by acting as an early adopter, as required by the Kerala IT Policy 2017. As a response, the government launched an innovative program to provide government agencies the opportunity to directly purchase goods from startups. This is the first time a state government in India has made such a marketplace available. KSUM facilitates the numerous ways in which departments are encouraged to engage with the startup ecosystem. The following are components of the facilitation mechanism:

Startup Box

The Startup Box Initiative, run by KSUM, is an additional manifestation of the government's efforts to foster an entrepreneurial spirit among the state's young. By lowering the hurdles to entry, it hopes to inspire young people to pursue entrepreneurship. Startup Box is a toolset that includes essentials like a computer, smartphone, hotspot device, and e-book reader to help 50 businesses selected through the KSUM Incubation program launch a digital-age business. After the

program is over, the kit, which is still KSUM property, must be returned. Through KSUM, 150 Startup Boxes have been dispersed across several incubators thus far. This crucial KSUM effort offers the infrastructure, resources, and equipment required for research and development in cutting-edge technologies.

Incubation Infrastructure

The Integrated Startup Complex (ISC) in Kochi is currently home to one of the biggest incubation hubs in the nation, according to Kerala Startup Mission. The area, which is more than 1.5 lakh square feet in size, can house more than 200 businesses at different stages. In addition to companies, it is the location of the FabLab, the KSUM Unity Centre of Excellence, and Maker Village, an incubator for electronics devices.

Industry Collaborations

In order to provide startups and young people with possibilities in the tech sector and the digital economy, KSUM has partnerships with the government, PSUs, and corporations.

Regulatory Assistance for Self-Certification for Startups

The Government of Kerala implemented self-certification for startups in accordance with the Government of India's plan in order to reduce the expense of regulatory inspections and prevent obstacles to work completion.

Startups' Unique ID

A system for identifying startups in Kerala has been created by KSUM. startups that are registered in Kerala and have a valid startup registration with DPIIT.

Support for Startups Participating at National Conferences

100% assistance, including to-and-fro travel, for a maximum of two members from the beginning. In line with the Department for Promotion of Industry and Internal Trade's (DPIIT) definition of startups.

Different Types of Funding Offered

Throughout the incubation process, offered entrepreneurs who participate in the KSUM incubation program receive a variety of funding options, such as grants, equity, loans, and more. Either KSUM itself, its member incubators, college-level IEDCs, or funds in which KSUM has invested are distributing the monies.

Seed money

Innovative startups can receive up to INR 10 lakh in seed funding. A group of IT and industry professionals selects applicants for startup funding once a month. Funding is disbursed both directly through KSUM and through its affiliated startups and incubators. Product creation, testing and trials, advertising campaigns, expert consulting, and employment can all be funded with seed money.

Funding for Early Stage Equity

Early-stage businesses can get between INR 25 Lakh and INR 2 Cr from KSUM and venture capital funds that are approved by SEBI. Startups with technology-based goods that are still in the early stages of development and are registered in Kerala or ready to re-register in Kerala can get this type of investment. Startups that want to get the money must have a working prototype of their product and be registered in at least one state-approved incubator. The person who wants the grant must present a detailed business plan that explains what the grant is meant to be used for. At least 50% of the grant must go towards hardware, and no more than 20% can go towards marketing costs.

Idea/Productization/Scale up Grant

During the concept, product, and scale-up phases, startups are eligible to apply for idea funding. Startups can receive up to INR 2 lakh in funding after being chosen at monthly Idea Days and college Idea Fests. Productisation awards up to INR 7 Lakh are available to startups in the product prototyping stage, as long as they haven't already used the concept grant. Additionally, if the firm has not received

either of the two prior grants, funds up to INR 12 Lakh may be offered to those in the scale-up stage.

Fund for the Development of Incubation Infrastructure

With the goal of assisting startups in specialised industries The Keralan government has approved the establishment of incubators in specialised industries.

Rent subsidy

The rent subsidy for entrepreneurs in the scale-up stage was offered by KSUM. To receive this benefit, the business must be registered as a startup and have a DIPP startup registration.

The business should be based in Kerala and at least 70% of its staff should be from the state. The company must generate at least INR 50 lakhs in revenue annually or obtain at least INR 150 lakhs in equity capital from other sources. The subsidy is only provided to the business as a reimbursement once the rent for the relevant government park has been paid.

Scheme for Patent Support

With money provided in three phases—filing, prosecution, and award—KSUM assists student entrepreneurs in obtaining patents for their goods. Up to 50 student entrepreneurs receive help annually, along with interest subsidies for up to five years on loans taken out for the implementation of patent-based products and educational assistance of up to INR 3 Lakh annually for post-graduate study.

Thus, In addition to helping startups and business leaders connect and learn from one another, KSUM is crucial in directing funding where they are most needed. To help Indian entrepreneurs go global, KSUM has partnered with international organisations, accelerators, and tech conferences. Kerala was named the Top Performer in the Department for Promotion of Industry and Internal Trade's 2018 State Startup Ranking thanks to the work of KSUM. Additionally, in 2016, it was granted the Chief Minister's Award for Innovation in Public Policy.

3.50 Conclusion

Through the different initiatives of the Kerala government, up to 130 Keralan startups have expanded internationally. The numerous steps the administration has taken to encourage the state's entrepreneurial culture are largely responsible for this progress. In addition to providing 63 startups with international attention in 1,000 days and offering more than 3 lakh square feet of floor space for startups, it also established Kerala Startup Mission (KSUM), a nodal body to support and promote entrepreneurs.

The government of Kerala is actively working to establish a sustainable and long-lasting ecosystem that will allow entrepreneurs to thrive in the state, as seen by these projects. Over the next four years, the Kerala government plans to invest more than INR 1,000 Cr in state companies. Such initial funding for up-and-coming businesses would be very beneficial for both attracting new businesses to Kerala and increasing the number of domestic companies. The state's socioeconomic indicators, such as household income, employment, and literacy, would undoubtedly improve if the government recognised the significance of a sustainable business ecosystem.

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CHAPTER 4

ANALYSIS AND INTERPRETATION

4.1 Introduction

The present chapter is based on the analysis and interpretation of data. The data may be reliable and valid but it does not serve the purpose unless the data is carefully classified, processed, analyzed, interpreted and concluded. This chapter consists of four parts of analysis such as Descriptive Statistics, Independent 't' Test, ANOVA, Correlation, Multiple Regression.

Part I Descriptive Statistics: Simple percentage is used for identifying the socio demographic factors of Incubatees. Mean and Standard Deviation is used to measure the agreeability of the respondents on various dimensions of Service effectiveness of Incubation centres (Environment services, Mentoring Services, Infrastructure facilities, Financial Services, Marketing Services, Human Resource Services, Research and Development assistance, Entrepreneur Support Services) and Satisfaction level of Incubatees towards the services provided by incubation centres in Kerala were analyzed and tabulated.

Part II Measures the difference of opinion of the respondents. In this part, **Independent 't' test and ANOVA** are used to find out the difference in opinion between the demographic profile and Service effectiveness of Incubation centres and satisfaction level of Incubatees.

Part III Correlation measures the relationship between various services provided by the business incubation centre and promotion of entrepreneurship in Kerala.

Part IV Multiple Regression Analysis measures the effect of various services provided by the business incubation centre to promote entrepreneurship in Kerala.

4.2 Part I - Descriptive Statistics

4.2.1 Gender of the Incubatee

Gender representation in business incubation and entrepreneurship is an essential component of comprehending the dynamics of startup ecosystems. In order to evaluate participation trends, this study investigates the gender distribution of incubates. . The data illuminates the entrepreneurial landscape's gender inclusivity by revealing the proportion of male and female entrepreneurs who utilise incubation facilities.

Table 4.1
Gender of the Incubatee

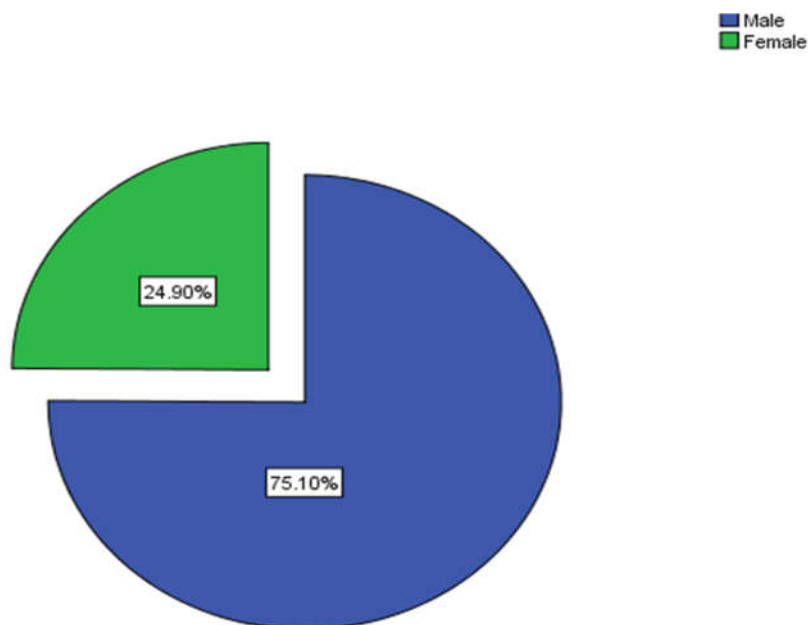
Gender	Frequency	Percent
Male	374	75.1
Female	124	24.9
Total	498	100.0

Source: Primary Data

Above table 4.1 reveals that out of the total respondents taken for the study 374 respondents (75.1%) belongs to male category and 124 respondents (24.9%) belongs to female category.

It is inferred from the table that the majority of the respondents (75.1%) belongs to the male category.

Fig. 4.1
Gender of the Incubatee



4.2.2 Age of the Incubatee

Age affects entrepreneurial risk-taking, experience, and company tactics. This study studies incubatee age distribution to determine the most common age groups using incubation support. The data shows that young and mid-career entrepreneurs dominate the incubation environment, revealing startup involvement *age trends*.

Table 4.2
Age of the Incubatee

Age	Frequency	Percent
Below 25 Years	6	1.2
25 - 35 Years	342	68.7
35 - 45 Years	148	29.7
Above 45 Years	2	.4
Total	498	100.0

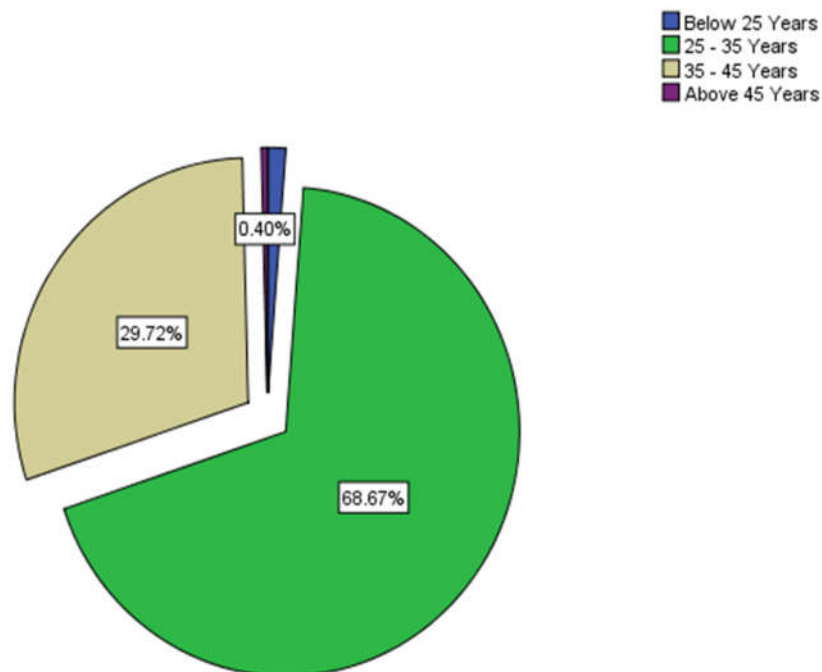
Source: Primary Data

Above table 4.2 reveals that out of the total respondents taken for the study, 342 respondents (68.7%) belongs to 25-35 Years of age, 148 respondents (29.7%) belongs to 35-45 Years of age and 6 respondents (1.2%) belongs to Below 25 years of age. Only 2 respondents (0.4%) belong to Above 45 years of age.

It is inferred from the table that the majority of the respondents (68.7%) belongs to 25-35 Years of age.

Fig. 4.2

Age of the Incubatee



4.2.3 Educational Background of the Incubatee

The educational background significantly impacts entrepreneurial ability, inventiveness, and business success. This study examines the educational credentials of incubatees to assess the degree of academic readiness among entrepreneurs. The data reveals the prevalence of professionally qualified persons inside the incubation ecosystem, highlighting the influence of education on entrepreneurial endeavours.

Table 4.3

Educational Background of the Incubatee

Educational Background	Frequency	Percent
Up to Plus Two	17	3.4
Degree	62	12.4
PG	158	31.7
Professional	261	52.4
Total	498	100.0

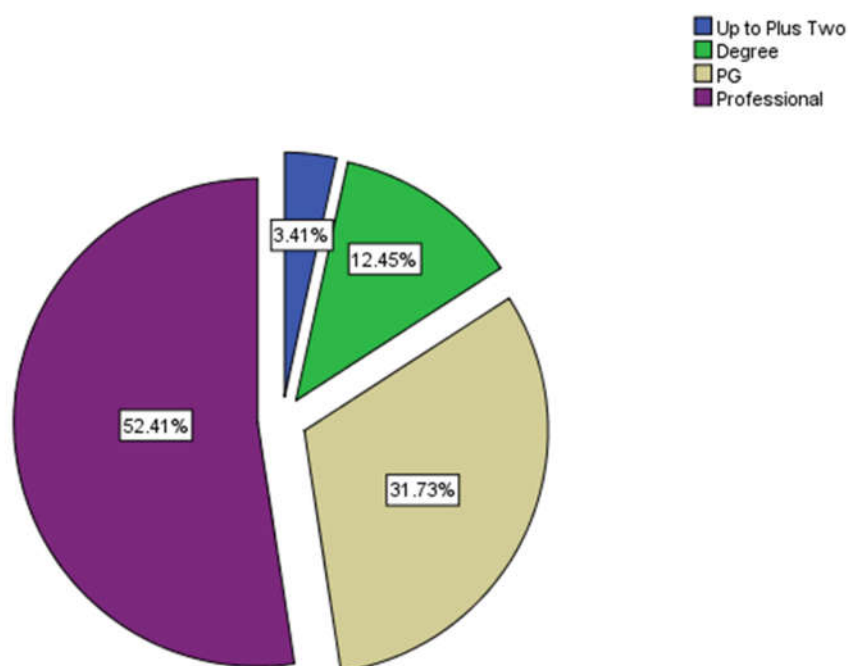
Source: Primary Data

Above table 4.3 reveals that majority of the respondents (52.4%) are professionals. 31.7 % of the respondents have completed PG and 12.4% of the respondents have completed Degree qualification. Only 3.4 % of the respondents have completed Up to Plus Two qualification.

It is inferred from the table that the majority of the respondents (52.4%) are professionals.

Fig. 4.3

Educational Background of the Incubate



4.2.4 Experience of the Incubatee before joining the incubation centre

Previous experience is crucial in influencing an entrepreneur's capacity to address business difficulties and utilise incubator help efficiently. This study analyses the professional experience of incubatees prior to their admission to the incubation centre to assess their degree of industry exposure.

Table 4.4

Experience of the Incubatee before joining the incubation centre

Experience	Frequency	Percent
No Experience	43	8.6
1 - 3 Years	199	40.0
3 - 6 Years	250	50.2
6 and Above	6	1.2
Total	498	100.0

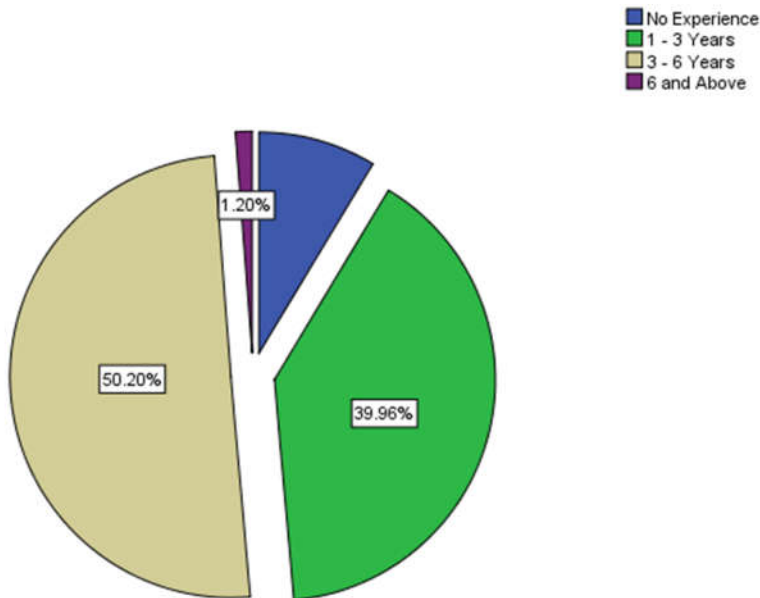
Source: Primary Data

Above table 4.4 shows that the majority of the respondents (50.2 %) have work experience of 3-6 years, followed by 1-3 years, 6 and above years with 40 %, 1.2 % respectively. 8.6 % of the respondents have no work experience before joining the incubation centre.

It is inferred from the table that the majority of the respondents (50.2 %) have work experience of 3-6 years before joining the incubation centre.

Fig. 4.4

Experience of the Incubatee before joining the incubation centre



4.2.5 Year of establishment of start-up in incubator

The year of startup establishment within an incubator offers insights into entrepreneurial trends and the evolution of incubation support over time. This study analyses the distribution of startups according to their year of establishment, emphasising the rising participation in recent years.

Table 4.5

Year of establishment of start-up in incubator

Year of establishment	Frequency	Percent
2019	24	4.8
2020	93	18.7
2021	70	14.1
2022	80	16.1
2023	231	46.4
Total	498	100.0

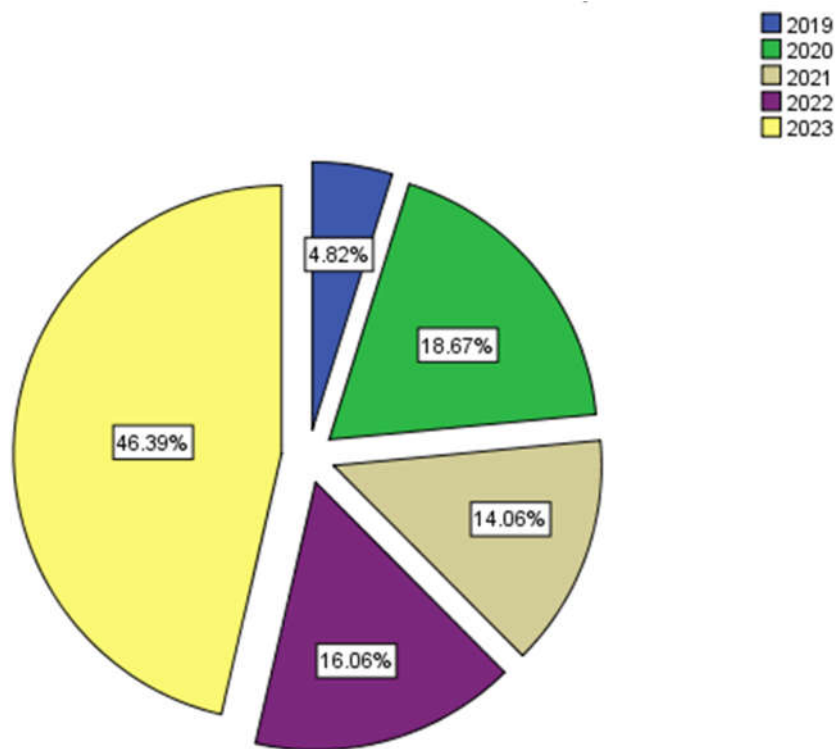
Source: Primary Data

Above table reveals that out of the total startups taken for the study 231 startups (46.4 %) are established in the year 2023, followed by 2020, 2022, and 2021 with 18.7 %, 16.1%, 14.1 % respectively. Only 24 start ups (4.8 %) are established in the year 2019.

It is inferred from the table that the majority of startups (46.4 %) are established in the year 2023.

Fig. 4.5

Year of establishment of start-up in incubator



4.2.6 Location of Start ups

The geographical positioning of startups significantly influences access to resources, market prospects, and business expansion. This study examines the distribution of startups in rural and urban regions to comprehend the entrepreneurial landscape.

Table 4.6
Location of Start ups

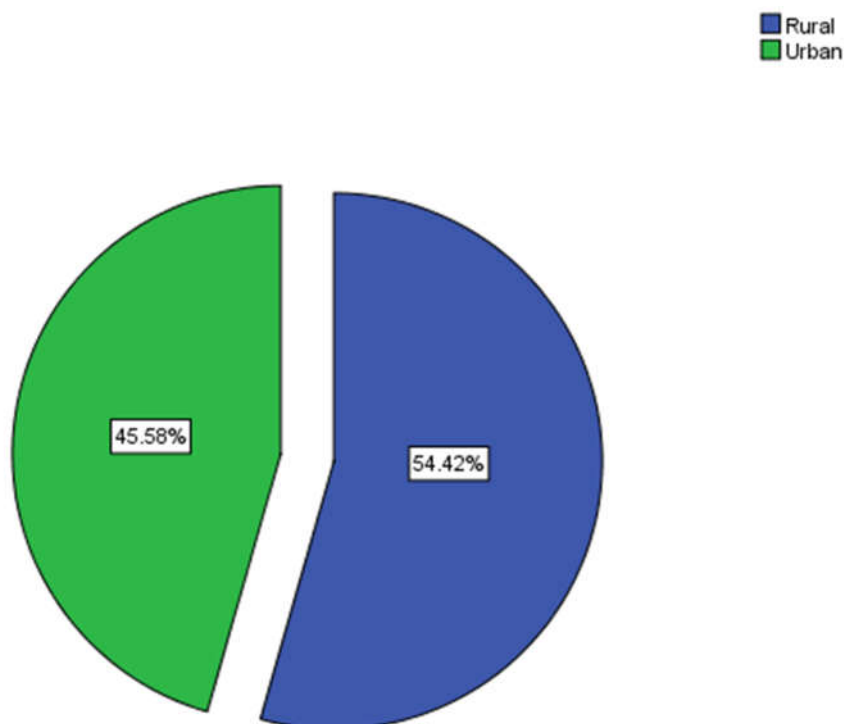
Location of Start ups	Frequency	Percent
Rural	227	45.6
Urban	271	54.4
Total	498	100.0

Source: Primary Data

Above table reveals that out of the total start ups taken for the study 271 start ups (54.4%) are from Urban area and 227 start ups (45.6%) are from Rural area.

It is inferred from the table that the majority of the start ups are from Urban area.

Fig. 4.6
Location of Start ups



4.2.7 Start-up Capital

Startup money is a vital determinant affecting the magnitude, viability, and growth prospects of emerging enterprises. This study analyses the first investment amounts of incubated firms to identify financing trends.

Table 4.7
Start-up Capital

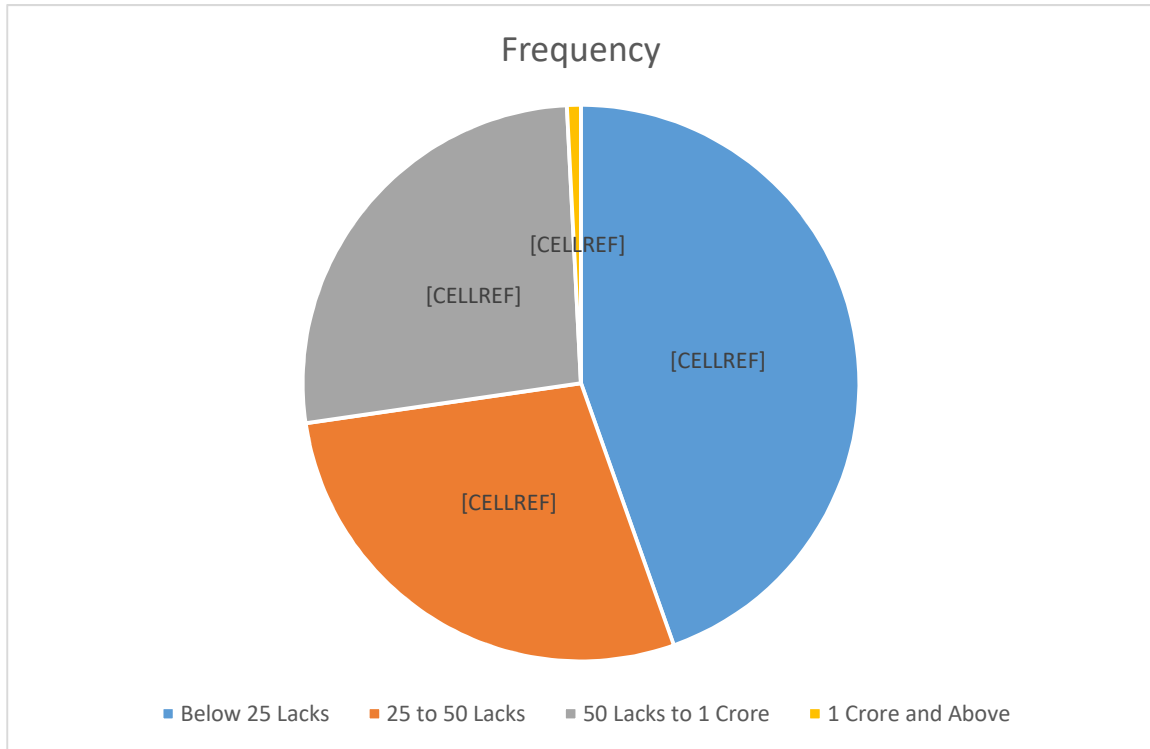
Start-up Capital	Frequency	Percent
Below 25 Lacks	222	44.6
25 to 50 Lacks	140	28.1
50 Lacks to 1 Crore	132	26.5
1 Crore and Above	4	.8
Total	498	100.0

Source: Primary Data

Above table reveals that out of the total startups taken for the study 222 startups (44.6 %) have start-up capital of below Rs. 25 lacks, followed by 25 Lacks to 50 Lacks and 50 Lacks to 1 Crore with 28.1%, 26.5% respectively. Only 4 startups (0.8%) have start-up capital of Rs. 1 Crore and above.

It is inferred from the table that the majority of the startups (44.6%) have start-up capital of Rs. 25 lacks to 50 lacks.

Fig. 4.7
Start-up Capital



4.2.8 Nature of Start-up

The characteristics of a startup determine its industry emphasis, capacity for innovation, and market strategy. This study examines the categorisation of startups into technical and non-technical classifications to comprehend existing patterns in the incubation environment.

Table 4.8
Nature of Start-up

Nature of Start-up	Frequency	Percent
Technical	371	74.5
Non - Technical	127	25.5
Total	498	100.0

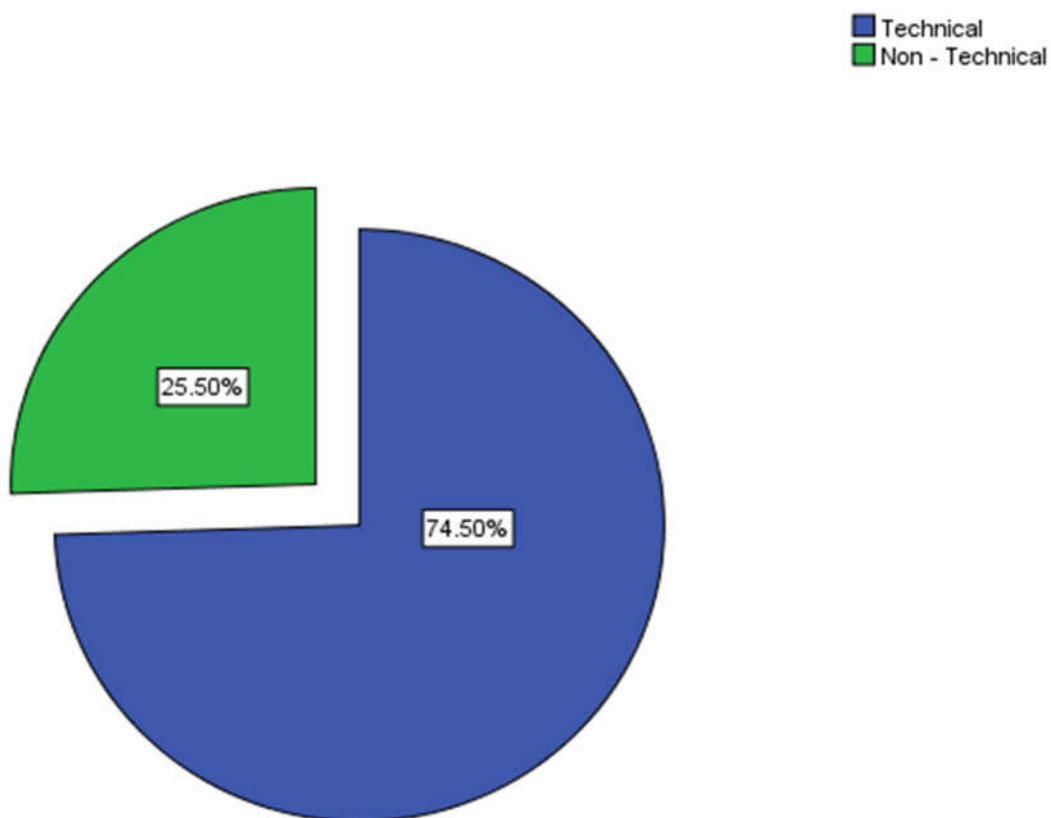
Source: Primary Data

Above table reveals that out of the total startups taken for the study 371 startups (74.5 %) are technical in nature. Remaining 127 startups (25.5 %) are Non - technical in nature.

It is inferred from the table that the majority of the startups (74.5 %) are technical in nature.

Fig. 4.8

Nature of Start-up



4.2.9 Form of Business

The selected business structure of startups affects their legal framework, ownership model, and operational flexibility. This study analyses the distribution of various business structures among incubated businesses.

Table 4.9
Form of Business

Form of Business	Frequency	Percent
Private Limited Company	143	28.7
Registered Partnership Firm	186	37.3
Limited Liability Partnership	78	15.7
One Person Company (OPC)	91	18.3
Total	498	100.0

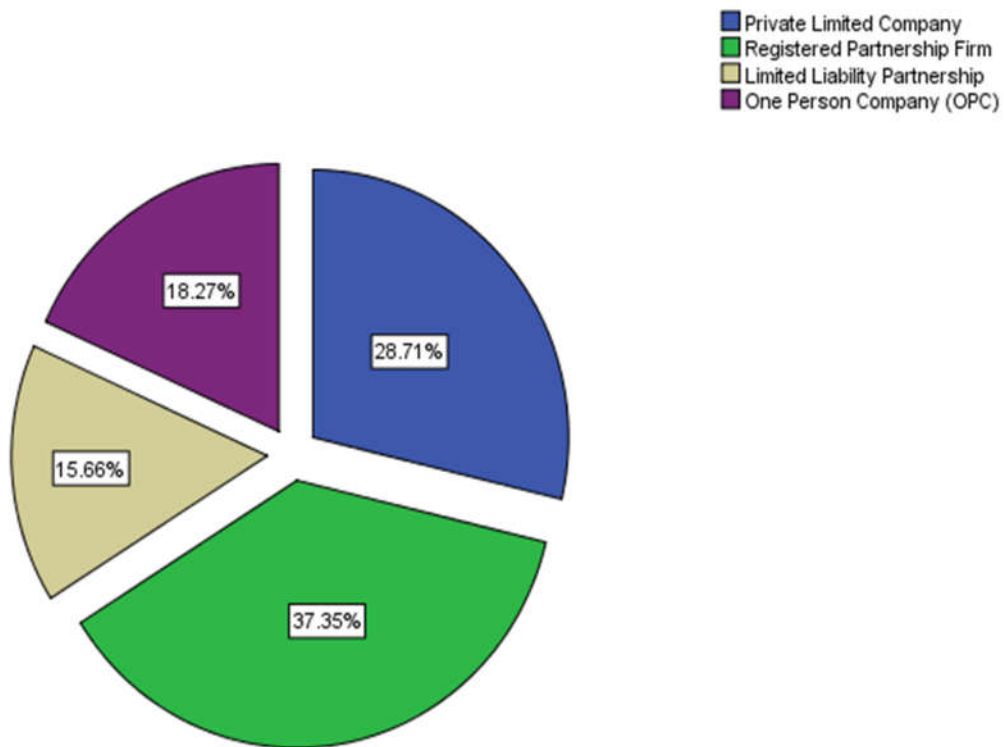
Source: Primary Data

Above table reveals that out of the total startups taken for the study 186 startups (37.3%) belongs to Registered Partnership Firm, followed by Private Limited Company, One Person Company (OPC) and Limited Liability Partnership with 28.7 %, 18.3%, 15.7% respectively.

It is inferred from the table that the majority of startups (37.3 %) belongs to Registered Partnership Firm.

Fig. 4.9

Form of Business



4.2.10 Business having a Patent or not

Intellectual property protection, particularly patents, is critical in encouraging innovation and ensuring companies' competitive advantages. This study looks at the patent ownership status of incubated enterprises to better understand the emphasis on innovation-driven entrepreneurship.

Table 4.10

Business having patent

Does your business have a patent?	Frequency	Percent
Yes	377	75.7
No	121	24.3
Total	498	100.0

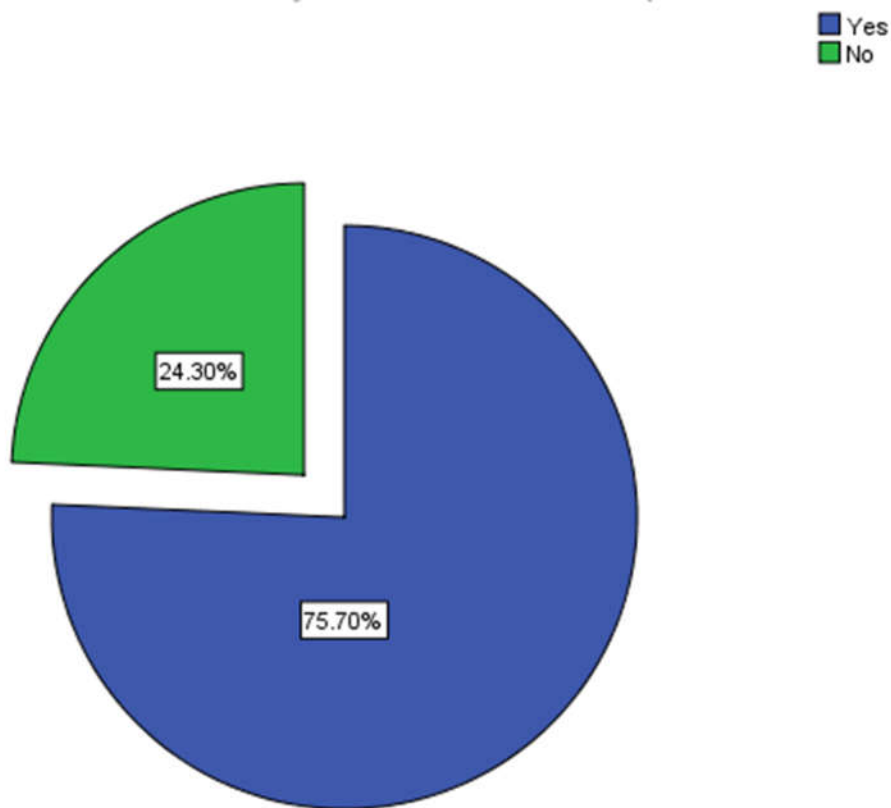
Source: Primary Data

Above table reveals that out of the total startups taken for the study 377 startups (75.7 %) have patent. Remaining 121 startups (24.3 %) have no patent.

It is inferred from the table that the majority of the startups (75.7 %) have patent.

Fig. 4.10

Business having patent



4.2.11 Stages of Startup

The stage of a startup represents its growth direction, development progress, and support needs. This study investigates the distribution of startups throughout various stages, such as pre-incubation, incubation, and acceleration.

Table 4.11
Stages of Startup

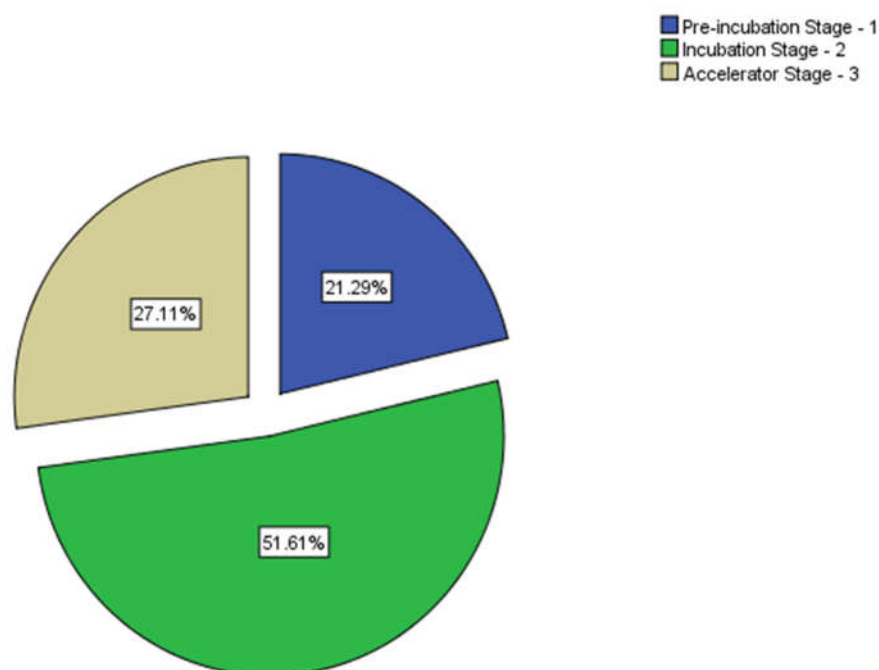
Stages of Startup	Frequency	Percent
Pre-incubation Stage – 1	106	21.3
Incubation Stage – 2	257	51.6
Accelerator Stage – 3	135	27.1
Total	498	100.0

Source: Primary Data

Above table reveals that out of the total startups taken for the study 257 startups (51.6 %) are come under Incubation Stage - 2, 135 startups (27.1 %) are come under Accelerator Stage – 3 and 106 startups (21.3 %) are come under Pre-incubation Stage - 1.

It is inferred from the table that the majority of startups (51.6 %) are come under Incubation Stage - 2.

Fig. 4.11
Stages of Startup



4.2.12 Nature of Product / Service

The target market and business strategy of a startup are dependent upon the nature of its product or service. This study examines the distribution of firms according to their emphasis on Business-to-Business (B2B), Business-to-Government (B2G), and Business-to-Consumer (B2C) models.

Table 4.12
Nature of Product / Service

Nature of Product / Service	Frequency	Percent
B 2 B	223	44.8
B 2 G	15	3.0
B 2 C	260	52.2
Total	498	100.0

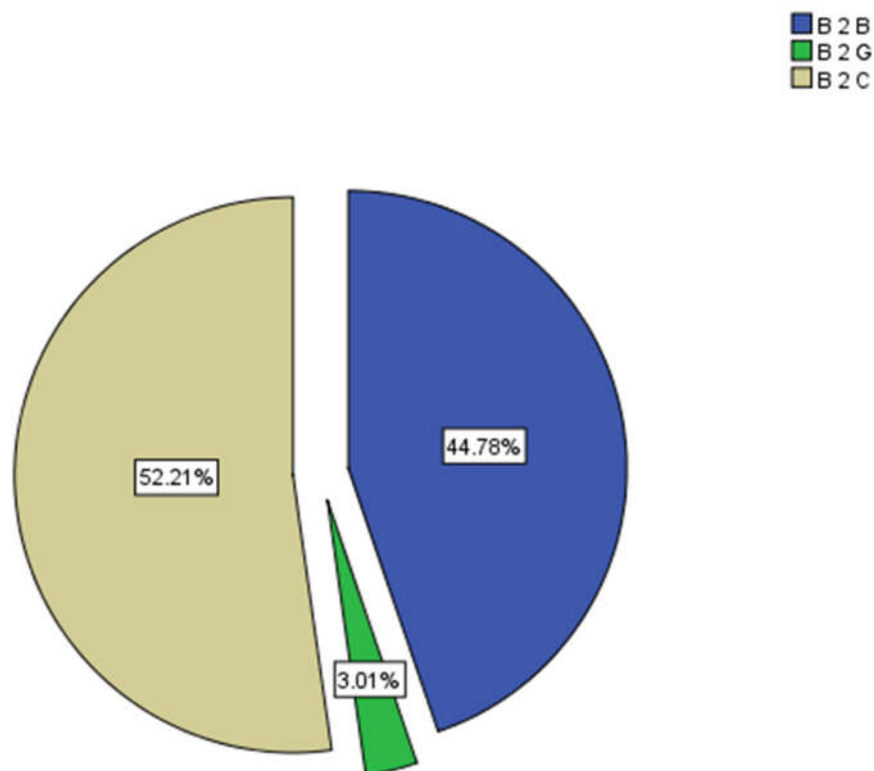
Source: Primary Data

The result reveals that out of the total startups taken for the study, majority of the startups (52.2%) are B2C in nature, 44.8 % are B2B in nature. Only 15 startups (3%) are B2G in nature.

It is inferred from the table that the majority of the startups (52.2%) are B2C in nature.

Fig. 4.12

Nature of Product / Service



4.2.13 Sources of Finance

The success and sustainability of enterprises are significantly impacted by their access to finance. This study investigates the financial strategies of incubated firms and analyses the diverse sources of funding they utilize.

Table 4.13
Sources of Finance

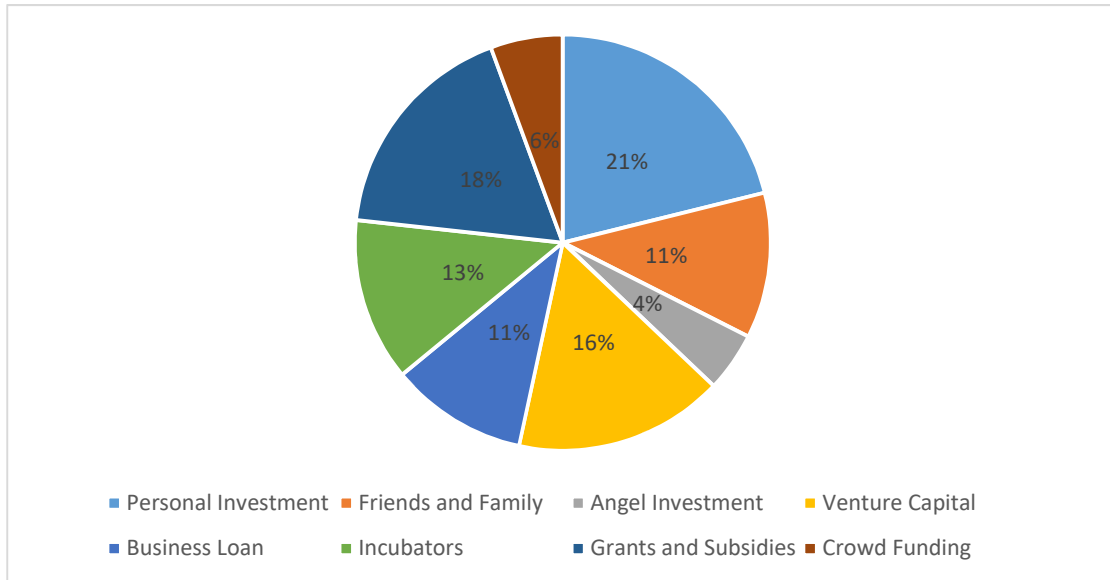
Sources of Finance	Frequency	Percent
Personal Investment	485	21.1
Friends and Family	260	11.3
Angel Investment	106	4.6
Venture Capital	374	16.3
Business Loan	245	10.7
Incubators	291	12.7
Grants and Subsidies	405	17.6
Crowd Funding	129	5.6
Total	2295	100.0

Source: Primary Data

Above table 4.13 shows that the sources of finance of start-ups. 21.1% of start-ups using personal investment as a major source of finance, followed by Grants and Subsidies, Venture Capital, Incubators, Friends & Family and Business Loan with 17.6 %, 16.3%, 12.7%, 11.3%, 10.7% respectively. Only 4.6% of start-ups using Angel Investment as a major source of finance.

It is inferred from the table that the majority of start-ups (21.1%) using personal investment as a major source of finance.

Fig 4.13
Sources of Finance



4.2.14 Business Sector

The industry focus, innovation potential, and market reach of a venture are determined by its business sector. This study aims to ascertain the current entrepreneurial trends by analysing the distribution of companies across a variety of sectors.

Table 4.14
Business Sector

Business Sector	Frequency	Percent
Software / IT	191	38.4
Hardware	63	12.7
Healthcare	47	9.4
Agriculture	126	25.3
Bio Technology	41	8.2
Services	30	6.0
Total	498	100.0

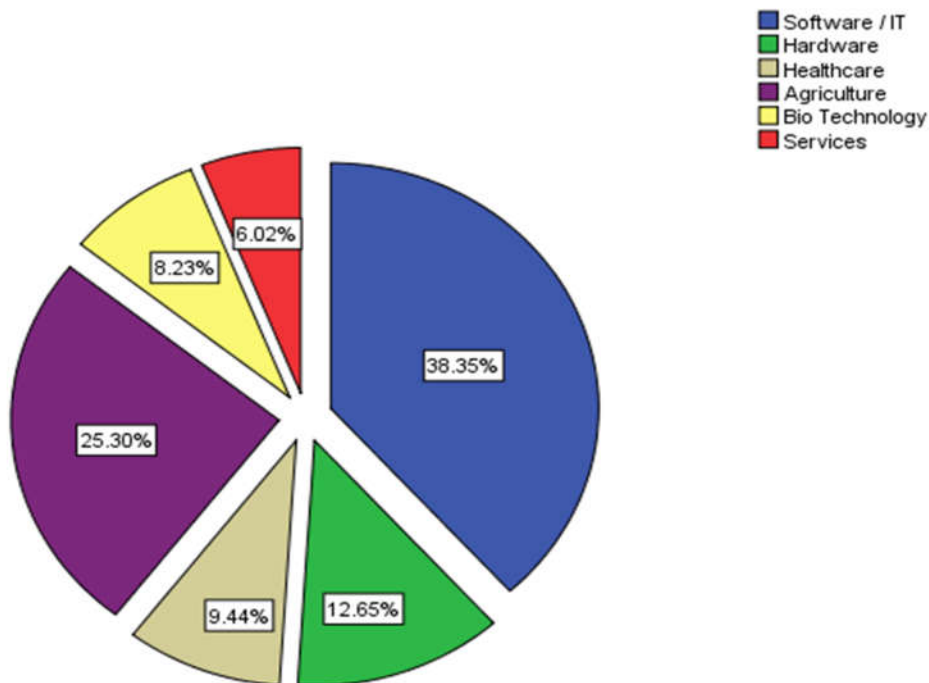
Source: Primary Data

Above table reveals that out of the total startups taken for the study, majority of the startups (38.4 %) are associated with Software / IT, followed by Agriculture, Hardware, Healthcare with 25.3 %, 12.7%, 9.4% respectively. Only 6% of start-ups are associated with services.

It is inferred from the table that the majority of the start-ups (38.4 %) are associated with Software / IT.

Fig 4.14

Business Sector



4.2.15 Category of incubation program applied for and selected

Incubation programs provide specialized support to entrepreneurs with a wide range of requirements, based on their eligibility. The categories of incubation programs that entrepreneurs select are focused in this study.

Table 4.15.

Category of incubation program applied for and selected

Which category of incubation program did you apply for and select?	Frequency	Percent
General: eligible for all	346	69.5
Student Oriented	54	10.8
Women Oriented	95	19.1
Aluminise	3	.6
Total	498	100.0

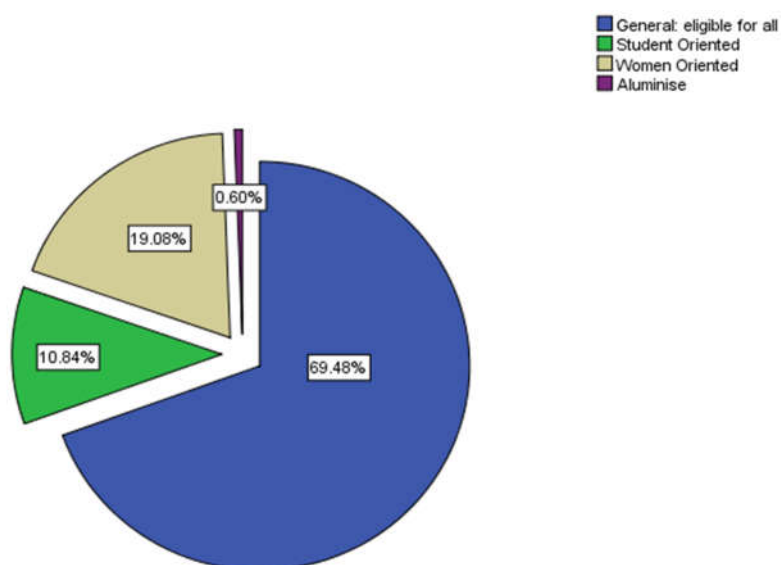
Source: Primary Data

Above table reveals that out of the total startups taken for the study, majority of the startups (69.5 %) are applied for General incubation program, followed by Women Oriented, Student Oriented and Aluminise with 19.1%, 10.8%, 0.6% respectively.

It is inferred from the table that the majority of the start-ups (69.5 %) are applied for General incubation program.

Fig. 4.15.

Category of incubation program applied for and selected



4.3 Satisfaction level of Incubatees towards the services provided by incubation centres in Kerala

In this part, Mean and Standard Deviation is used to measure the agreeability of the respondents on various dimensions of Service effectiveness of Incubation centres (Environment services, Mentoring Services, Infrastructure facilities, Financial Services, Marketing Services, Human Resource Services, Research and Development assistance, Entrepreneur Support Services) and Satisfaction level of Incubatees towards the services provided by incubation centres in Kerala were analyzed and tabulated.

Table 4.16

Mean and Standard Deviation of Satisfaction level of Incubatees

Statements	N	Mean	Std. Deviation
Enabling Environment Services	498	4.83	.419
Mentoring Services	498	4.09	.491
Infrastructure Services	498	4.58	.636
Financial Services	498	4.09	.634
Marketing Services	498	4.04	.871
Human Resource Services	498	4.43	.689
Business Support services	498	4.54	.627
Networking Services	498	4.50	.690
Research and Development Services	498	4.57	.641
Total	498	39.67	5.698

Source: Primary Data

The above table 4.16 shows the mean and standard deviation for Satisfaction level of Incubatees. The total mean score of Satisfaction level is 39.67 and the total standard deviation was found to be 5.698.

It is found that the mean score and standard deviation of “Enabling Environment Services” is 4.83 and 0.419, the mean score and standard deviation for

“Mentoring Services” is 4.09 and 0.491, the mean score and standard deviation for “Infrastructure Services” is 4.58 and 0.636, the mean score and standard deviation for “Financial Services” is 4.09 and 0.634, the mean score and standard deviation for “Marketing Services” is 4.04 and 0.871, the mean score and standard deviation for “Human Resource Services” is 4.43 and 0.689, the mean score and standard deviation for “Business Support services” is 4.54 and 0.627, the mean score and standard deviation for “Networking Services” is 4.50 and 0.690, the mean score and standard deviation for “Research and Development Services” is 4.57 and 0.641.

It is concluded that the highest mean score was found for “Enabling Environment Services” and the lowest mean score was found with “Marketing Services”.

4.3.1 Satisfaction of incubates towards Enabling Environment Services

Table 4.17

Mean and Standard Deviation of Enabling Environment Services

Statements	N	Mean	Std. Deviation
Incubation centre has created an environment where the incubatee can learn from one another.	498	4.67	.585
Incubation centre helped the incubatee by reducing the time required to develop marketable products/services.	498	4.15	.725
Incubation centre helped the incubatee by reducing early-stage operational costs to start the business with a lower initial investment.	498	4.47	.698
Incubation centre helped the incubatee to accelerate the development of new firms with minimum chances of failures	498	4.29	.668
Incubation centre helped the tenant companies to establish credibility.	498	4.35	.768
Incubation Centre has a formal procedure for periodic feedback and handling grievances of incubatee.	498	4.28	.672
Total	498	26.21	4.116

Source: Primary Data

The above table 4.17 shows the mean and standard deviation for Enabling Environment Services. The total mean score of Enabling Environment Services is 26.21 and the total standard deviation was found to be 4.116.

It is found that the mean score and standard deviation of “Incubation centre has created an environment where the incubatee can learn from one another” is 4.67 and 0.585, the mean score and standard deviation for “Incubation centre helped the incubatee by reducing the time required to develop marketable products/services” is 4.15 and 0.725, the mean score and standard deviation for “Incubation centre helped the incubatee by reducing early-stage operational costs to start the business with a lower initial investment” is 4.47 and 0.698 , the mean score and standard deviation for “Incubation centre helped the incubatee to accelerate the development of new firms with minimum chances of failures” is 4.29 and 0.668, the mean score and standard deviation for “Incubation centre helped the tenant companies to establish credibility” is 4.35 and 0.768 , the mean score and standard deviation for “Incubation Centre has a formal procedure for periodic feedback and handling grievances of incubatee.” is 4.28 and 0.672.

It is concluded that the highest mean score was found for “Incubation centre has created an environment where the incubatee can learn from one another” and the lowest mean score was found with “Incubation centre helped the incubatee by reducing the time required to develop marketable products/services”.

4.3.2 Satisfaction of incubates towards Mentoring Services

Table 4.18
Mean and Standard Deviation of Mentoring Services

Statements	N	Mean	Std. Deviation
Incubation centre assigned a qualified mentor to the incubate	498	4.13	.880
Incubation centre provided the incubatee to avail the expertise from multiple mentors.	498	3.91	1.008
Incubation centre provided product / technology mentoring to the incubatee	498	3.98	.967
Incubation centre provided mentoring for customer development and relationships to the incubate	498	3.97	.893
Incubation centre provided mentoring service for developing revenue model, business model and pricing model to the incubate	498	4.12	.904
Incubation centre provided mentoring service for team management to the incubate	498	4.01	.943
Total	498	24.12	5.595

Source: Primary Data

The above table 4.18 shows the mean and standard deviation for Mentoring Services. The total mean score of Mentoring Services is 24.12 and the total standard deviation was found to be 5.595.

It is found that the mean score and standard deviation of “Incubation centre assigned a qualified mentor to the incubate” is 4.13 and 0.880, the mean score and standard deviation for “Incubation centre provided the incubatee to avail the expertise from multiple mentors.” is 3.91 and 1.008, the mean score and standard deviation for “Incubation centre provided product / technology mentoring to the incubatee” is 3.98 and 0.967 , the mean score and standard deviation for “Incubation centre provided mentoring for customer development and relationships to the incubate” is 3.97 and 0.893, the mean score and standard deviation for “Incubation

centre provided mentoring service for developing revenue model, business model and pricing model to the incubate” is 4.12 and 0.904, the mean score and standard deviation for “Incubation centre provided mentoring service for team management to the incubate” is 4.01 and 0.943.

It is concluded that the highest mean score was found for “Incubation centre assigned a qualified mentor to the incubate” and the lowest mean score was found with “Incubation centre provided the incubatee to avail the expertise from multiple mentors”.

4.3.3 Satisfaction of incubates towards Infrastructure facilities

Table 4.19

Mean and Standard Deviation of Infrastructure facilities

Statements	N	Mean	Std. Deviation
Incubation centre provided the incubatee with work space at below market rate rent.	498	4.50	.613
Incubation centre provided the incubatee with sufficient office space in incubation centre.	498	4.28	.656
Incubation centre provided the incubatee with library facilities.	498	4.26	.707
Incubation centre provided the incubatee with cloud services for free credits or with offer	498	4.29	.620
Incubation centre provided the incubatee with software for free credits or with offer	498	4.33	.651
Incubation centre provided the incubatee with online tools for free credits or with offer	498	4.32	.638
Incubation centre provided the incubatee with sufficient laboratory facility for product / prototype development and testing	498	4.37	.628
Incubation centre provided the incubatee with general electronics workshop	498	4.25	.684
Incubation centre provided the incubatee with lab facilities for Artificial Intelligence / Virtual Reality / Augmented Reality.	498	4.31	.718
Incubation centre provided the incubatee with lab facilities for Robotics and Aerial vehicles and Brain Computer Interfacing Lab.	498	4.32	.669
Total	498	43.23	6.584

Source: Primary Data

The above table 4.19 shows the mean and standard deviation for Infrastructure facilities. The total mean score of Infrastructure facilities is 43.23 and the total standard deviation was found to be 6.584.

It is found that the mean score and standard deviation of “Incubation centre provided the incubatee with work space at below market rate rent” is 4.50 and 0.613, the mean score and standard deviation for “Incubation centre provided the incubatee with sufficient office space in incubation centre” is 4.28 and 0.656, the mean score and standard deviation for “Incubation centre provided the incubatee with library facilities” is 4.26 and 0.707, the mean score and standard deviation for “Incubation centre provided the incubatee with cloud services for free credits or with offer” is 4.29 and 0.620, the mean score and standard deviation for “Incubation centre provided the incubatee with software for free credits or with offer” is 4.33 and 0.651, the mean score and standard deviation for “Incubation centre provided the incubatee with online tools for free credits or with offer” is 4.32 and 0.638, the mean score and standard deviation for “Incubation centre provided the incubatee with sufficient laboratory facility for product / prototype development and testing” is 4.37 and 0.628, the mean score and standard deviation for “Incubation centre provided the incubatee with general electronics workshop” is 4.25 and 0.684, the mean score and standard deviation for “Incubation centre provided the incubatee with lab facilities for Artificial Intelligence / Virtual Reality / Augmented Reality” is 4.31 and 0.718, the mean score and standard deviation for “Incubation centre provided the incubatee with lab facilities for Robotics and Aerial vehicles and Brain Computer Interfacing Lab” is 4.32 and 0.669.

It is concluded that the highest mean score was found for “Incubation centre provided the incubatee with work space at below market rate rent” and the lowest mean score was found with “Incubation centre provided the incubatee with library facilities”.

4.3.4 Satisfaction of incubates towards Financial Services**Table 4.20****Mean and Standard Deviation of Financial Services**

Statements	N	Mean	Std. Deviation
Incubation centre helps the incubatee to prepare financial plan and projections	498	4.30	.585
Incubation centre helps the incubatee in Business Valuation and Investment Pattern	498	4.28	.571
Incubation centre provide guidance to the incubatee on available sources of funds.	498	4.20	.669
Incubation centre helps the incubatee to avail seed capital, bridge finance, angel funds and venture capital	498	4.21	.684
Incubation centre helps the incubatee to avail grants, subsidy, and collateral free loans and reduced interest rate loans.	498	4.25	.621
Incubation centre helps the incubatee in fast resolution of disputes, protection against delayed payments and moratorium.	498	4.25	.605
Total	498	25.49	3.735

Source: Primary Data

The above table 4.20 shows the mean and standard deviation for Financial Services. The total mean score of Financial Services is 25.49 and the total standard deviation was found to be 3.735.

It is found that the mean score and standard deviation of “Incubation centre helps the incubatee to prepare financial plan and projections” is 4.30 and 0.585, the mean score and standard deviation for “Incubation centre helps the incubatee in Business Valuation and Investment Pattern” is 4.28 and 0.571, the mean score and standard deviation for “Incubation centre provide guidance to the incubatee on available sources of funds” is 4.20 and 0.669, the mean score and standard deviation for “Incubation centre helps the incubatee to avail seed capital, bridge finance, angel funds and venture capital” is 4.21 and 0.684, the mean score and standard deviation for “Incubation centre helps the incubatee to avail grants, subsidy, and collateral free loans and reduced interest rate loans” is 4.25 and 0.621, the mean score and standard deviation for “Incubation centre helps the incubatee in fast resolution of disputes,

protection against delayed payments and moratorium” is 4.25 and 0.605.

It is concluded that the highest mean score was found for “Incubation centre helps the incubatee to prepare financial plan and projections” and the lowest mean score was found with “Incubation centre provide guidance to the incubatee on available sources of funds”.

4.3.5 Satisfaction of incubates towards Marketing Services

Table 4.21
Mean and Standard Deviation of Marketing Services

Statements	N	Mean	Std. Deviation
Incubation centre helps the incubate to capturing market insights through market research and identifying market segments and targets.	498	4.11	.823
Incubation centre helps the 248incubate for creating brand equity and brand positioning	498	3.94	.841
Incubation centre helps the 248incubate for shaping market offering , product values and product pricing	498	3.96	.953
Incubation centre helps the 248incubate for designing marketing communication mix – advertisements, sales promotion, direct marketing, personal selling and public relation and publicity.	498	3.80	.910
Incubation centre provide the incubate with facilities for product launch coverage, events and experiences, digital marketing with Augmented Reality / Virtual Reality experiencing platform.	498	3.89	.939
Incubation Centers helps the incubate in pitching/proposal/ participate in tenders to Government departments, PSUs, Autonomous Bodies. Corporations or Local Self Government Institutions	498	3.90	.924
Incubation centre provide the incubate with satisfactory services for getting international business opportunities through NASSCOM Innotrek, International Launch Pads, and Foreign travel for business opportunities.	498	3.91	.982
Total	498	27.51	6.372

Source: Primary Data

The above table 4.21 shows the mean and standard deviation for Marketing Services. The total mean score of Marketing Services is 27.51 and the total standard deviation was found to be 6.372.

It is found that the mean score and standard deviation of “Incubation centre helps the incubate to capturing market insights through market research and identifying market segments and targets.” is 4.11 and 0.823, the mean score and standard deviation for “Incubation centre helps the 249incubate for creating brand equity and brand positioning” is 3.94 and 0.841, the mean score and standard deviation for “Incubation centre helps the 249incubate for shaping market offering , product values and product pricing” is 3.96 and 0.953, the mean score and standard deviation for “Incubation centre helps the 249incubate for designing marketing communication mix –advertisements, sales promotion, direct marketing, personal selling and public relation and publicity” is 3.80 and 0.910, the mean score and standard deviation for “Incubation centre provide the incubate with facilities for product launch coverage, events and experiences, digital marketing with Augmented Reality / Virtual Reality experiencing platform” is 3.89 and 0.939, the mean score and standard deviation for “Incubation Centers helps the incubate in pitching/proposal/ participate in tenders to Government departments, PSUs, Autonomous Bodies. Corporations or Local Self Government Institutions” is 3.90 and 0.924, the mean score and standard deviation for “Incubation centre provide the incubate with satisfactory services for getting international business opportunities through NASSCOM Innotrek, International Launch Pads, and Foreign travel for business opportunities” is 3.91 and 0.982.

It is concluded that the highest mean score was found for “Incubation centre helps the incubate to capturing market insights through market research and identifying market segments and targets” and the lowest mean score was found with “Incubation centre helps the incubate for designing marketing communication mix – advertisements, sales promotion, direct marketing, personal selling and public relation and publicity”.

4.3.6 Satisfaction of incubates towards Human Resource Services

Table 4.22

Mean and Standard Deviation of Human Resource Services

Statements	N	Mean	Std. Deviation
Incubation centre helps the incubatee for designing job analysis, job description and job specification for manpower planning	498	4.40	.633
Incubation centre helps the incubatee in recruiting qualified and competent employees and managerial personals	498	4.26	.647
Incubation centre helps the incubatee in conducting training and development programs for managers and employees	498	4.35	.619
Incubation centre helps the incubatee in conducting periodic performance appraisal of the managers and employees	498	4.36	.681
Incubation centre helps the incubatee in managing payroll, succession planning, career development, grievance handling and HR audit.	498	4.32	.634
Total	498	21.69	3.214

Source: Primary Data

The above table 4.22 shows the mean and standard deviation for Human Resource Services. The total mean score of Human Resource Services is 21.69 and the total standard deviation was found to be 3.214.

It is found that the mean score and standard deviation of “Incubation centre helps the incubatee for designing job analysis, job description and job specification for manpower planning” is 4.40 and 0.633, the mean score and standard deviation for “Incubation centre helps the incubatee in recruiting qualified and competent employees and managerial personals” is 4.26 and 0.647, the mean score and standard deviation for “Incubation centre helps the incubatee in conducting training and development programs for managers and employees” is 4.35 and 0.619, the mean score and standard deviation for “Incubation centre helps the incubatee in conducting periodic performance appraisal of the managers and employees” is 4.36

and 0.681, the mean score and standard deviation for “Incubation centre helps the incubatee in managing payroll, succession planning, career development, grievance handling and HR audit” is 4.32 and 0.634.

It is concluded that the highest mean score was found for “Incubation centre helps the incubatee for designing job analysis, job description and job specification for manpower planning” and the lowest mean score was found with “Incubation centre helps the incubatee in recruiting qualified and competent employees and managerial personals”.

4.3.7 Satisfaction of incubates towards Research and Development Assistance

Table 4.23

Mean and Standard Deviation of Research and Development Assistance

Statements	N	Mean	Std. Deviation
Incubation centre provide the incubatee with technical expertise for designing/developing the product.	498	4.40	.755
Incubation centre provide the incubatee with technical expertise for modification and updatation according to customer needs.	498	4.17	.714
Incubation centre provide the incubatee with lab facilities for designing/developing the product	498	4.28	.726
Incubation centre provide the incubatee with lab facilities for modification and updatation according to customer needs.	498	4.13	.700
Incubation centre provide the incubatee with lab facilities for testing the product	498	4.34	.737
Total	498	21.32	3.632

Source: Primary Data

The above table 4.23 shows the mean and standard deviation for Research and Development Assistance. The total mean score of Research and Development Assistance is 21.32 and the total standard deviation was found to be 3.632.

It is found that the mean score and standard deviation of “Incubation centre provide the incubatee with technical expertise for designing/developing the product”

is 4.40 and 0.75, the mean score and standard deviation for “Incubation centre provide the incubatee with technical expertise for modification and updation according to customer needs” is 4.17 and 0.714, the mean score and standard deviation for “Incubation centre provide the incubatee with lab facilities for designing/developing the product” is 4.28 and 0.726, the mean score and standard deviation for “Incubation centre provide the incubatee with lab facilities for modification and updation according to customer needs” is 4.13 and 0.700, the mean score and standard deviation for “Incubation centre provide the incubatee with lab facilities for testing the product” is 4.34 and 0.737.

It is concluded that the highest mean score was found for “Incubation centre provide the incubatee with technical expertise for designing/developing the product” and the lowest mean score was found with “Incubation centre provide the incubatee with lab facilities for modification and updation according to customer needs”.

4.3.8 Satisfaction of incubatees towards of Entrepreneur Support Services

Table 4.24

Mean and Standard Deviation of Entrepreneur Support Services

Statements	N	Mean	Std. Deviation
Incubation centre provide the incubatee with Secretarial Services	498	4.45	.682
Incubation centre helps the incubatee in preparing annual accounts and audited statements	498	4.33	.648
Incubation centre provide the incubatee with taxation services includes registration filing and updation	498	4.44	.713
Incubation centre provide the incubatee with EXIM, TAN, PAN and SEZ Services.	498	4.37	.698
Incubation centre provide the incubatee with legal, Notary Services & Client Agreements	498	4.37	.680
Incubation centre provide the incubatee with IP, Patent , Trademark & Copy rights	498	4.51	.641
Total	498	26.47	4.062

Source: Primary Data

The above table 4.24 shows the mean and standard deviation for Entrepreneur Support Services. The total mean score of Entrepreneur Support Services is 26.47 and the total standard deviation was found to be 4.062.

It is found that the mean score and standard deviation of “Incubation centre provide the incubatee with Secretarial Services” is 4.45 and 0.682, the mean score and standard deviation for “Incubation centre helps the incubatee in preparing annual accounts and audited statements” is 4.33 and 0.648, the mean score and standard deviation for “Incubation centre provide the incubatee with taxation services includes registration filing and updation” is 4.44 and 0.713, the mean score and standard deviation for “Incubation centre provide the incubatee with EXIM, TAN, PAN and SEZ Services.” is 4.37 and 0.698, the mean score and standard deviation for “Incubation centre provide the incubatee with legal, Notary Services & Client Agreements” is 4.37 and 0.680, the mean score and standard deviation for “Incubation centre provide the incubatee with IP, Patent , Trademark & Copy rights” is 4.51 and 0.641.

It is concluded that the highest mean score was found for “Incubation centre provide the incubatee with IP, Patent, Trademark & Copy rights” and the lowest mean score was found with “Incubation centre helps the incubatee in preparing annual accounts and audited statements”.

Incubation centre promote entrepreneurship and enable ecosystem to support start-up units

4.4 Opinion of incubates about the support provided by Business Incubation Centres for entrepreneurship and ecosystem development

Table 4.25

Mean and Standard Deviation of Entrepreneurship Development

Statements	N	Mean	Std. Deviation
Incubation centre promote entrepreneurship and enable ecosystem to support start-up units.	498	4.37	.915
Incubation centre is the prominent place to start a new business	498	4.18	.883
Incubation centre can be suggested to other entrepreneurs as an appropriate place to start a new business.	498	4.25	.906
Incubation centre helps the incubatee to develop a flexible and convenient work plan.	498	4.11	.958
Incubation centre helps the incubatee in managing up and down situations of the business.	498	4.23	.994
Business incubators can be adopt as a policy instrument for entrepreneurship development.	498	4.07	.923
Business Incubators support the creation and growth of business through organizational and technical assistance, and contributes to the reduction of entrepreneurial failure	498	4.22	.990
By helping new businesses prosper, incubators assist in creating long-lasting jobs for their host communities	498	4.20	.878
Business Incubation centres enhances the chances of success, raises credibility, helps improve skills, creates synergy among client-firms, and facilitates access to mentors, information and seed capital.	498	4.25	1.035
The incubator helps overcome market failures, promotes regional development, generates jobs, incomes and taxes, becomes a demonstration of the political commitment to small businesses and helps the incubatee to meet their social responsibilities	498	4.10	.934
Total	498	41.98	9.416

Source: Primary Data

The above table 4.25 shows the mean and standard deviation for Entrepreneurship Development. The total mean score of Entrepreneurship Development is 41.98 and the total standard deviation was found to be 9.416.

It is found that the mean score and standard deviation of “Incubation centre promote entrepreneurship and enable ecosystem to support start-up units” is 4.37 and 0.915, the mean score and standard deviation for “Incubation centre is the prominent place to start a new business” is 4.18 and 0.883, the mean score and standard deviation for “Incubation centre can be suggested to other entrepreneurs as an appropriate place to start a new business.” is 4.25 and 0.906, the mean score and standard deviation for “Incubation centre helps the incubatee to develop a flexible and convenient work plan” is 4.11 and 0.958, the mean score and standard deviation for “Incubation centre helps the incubatee in managing up and down situations of the business” is 4.23 and 0.994, the mean score and standard deviation for “Business incubators can be adopt as a policy instrument for entrepreneurship development” is 4.07 and 0.923, the mean score and standard deviation for “Business Incubators support the creation and growth of business through organizational and technical assistance, and contributes to the reduction of entrepreneurial failure” is 4.22 and 0.990, the mean score and standard deviation for “By helping new businesses prosper, incubators assist in creating long-lasting jobs for their host communities” is 4.20 and 0.878, the mean score and standard deviation for “Business Incubation centres enhances the chances of success, raises credibility, helps improve skills, creates synergy among client-firms, and facilitates access to mentors, information and seed capital” is 4.25 and 1.035, the mean score and standard deviation for “The incubator helps overcome market failures, promotes regional development, generates jobs, incomes and taxes, becomes a demonstration of the political commitment to small businesses and helps the incubatee to meet their social responsibilities” is 4.10 and 0.934.

It is concluded that the highest mean score was found for “Incubation centre promote entrepreneurship and enable ecosystem to support start-up units” and the lowest mean score was found with “Business incubators can be adopt as a policy instrument for entrepreneurship development”.

4.5 Opinion of the incubates about the services of Incubation Centres towards the problems faced by the incubatees

Table 4.26

Mean and Standard Deviation of Problems faced by Incubatee

Statements	N	Mean	Std. Deviation
Government not taking sufficient amount of interest and efforts to boost start-ups in incubation centre.	498	2.09	1.260
Incubation centres are unable to provide satisfactory and flexible infrastructure facilities as per the requirements of the incubatee.	498	1.92	1.144
Marketing services provided by the incubation centre is not a validated market opportunity sufficient to exposure to real market	498	2.08	1.195
Networking opportunities provided by the incubation centre is limited to the institute alone.	498	2.03	1.165
Incubation programs in the incubation centres are not supporting Research and Development activities due to time and technical constraints.	498	2.02	1.159
Incubatee is not provided with support from host institute in gaining business knowledge, recruitment and R&D.	498	1.97	1.184
Financial services provided by the incubators are not appropriate and relevant to helping entrepreneurs connect with angel investors and venture capitalists	498	2.05	1.157
Incubators are not able to provide proper entrepreneurial education to the incubate	498	1.93	1.152
Incubatee is not provided with adequate Business Support services	498	2.00	1.184
Accelerators and incubation programs tend to be expensive or require entrepreneurs to give up equity	498	1.97	1.232
The current structure of incubators excludes a large percentage of the entrepreneurial population because of their limited locations, equity requirements and low acceptance rate.	498	2.17	1.252
Total	498	22.23	13.084

Source: Primary Data

The above table 4.26 shows the mean and standard deviation for Problems faced by Incubatee. The total mean score of Problems faced by Incubatee is 22.23 and the total standard deviation was found to be 13.084.

It is found that the mean score and standard deviation of “Government not taking sufficient amount of interest and efforts to boost start-ups in incubation centre” is 2.09 and 1.260, the mean score and standard deviation for “Incubation centres are unable to provide satisfactory and flexible infrastructure facilities as per the requirements of the incubatee” is 1.92 and 1.144, the mean score and standard deviation for “Marketing services provided by the incubation centre is not a validated market opportunity sufficient to exposure to real market” is 2.08 and 1.195, the mean score and standard deviation for “Networking opportunities provided by the incubation centre is limited to the institute alone” is 2.03 and 1.165, the mean score and standard deviation for “Incubation programs in the incubation centres are not supporting Research and Development activities due to time and technical constraints” is 2.02 and 1.159, the mean score and standard deviation for “Human Resource Services” is 4.43 and 0.689, the mean score and standard deviation for “Incubatee is not provided with support from host institute in gaining business knowledge, recruitment and R&D” is 1.97 and 1.184, the mean score and standard deviation for “Financial services provided by the incubators are not appropriate and relevant to helping entrepreneurs connect with angel investors and venture capitalists” is 2.05 and 1.157, the mean score and standard deviation for “Research and Development Services” is 4.57 and 0.641, the mean score and standard deviation for “Incubators are not able to provide proper entrepreneurial education to the incubate” is 1.93 and 1.152, the mean score and standard deviation for “Incubatee is not provided with adequate Business Support services” is 2.00 and 1.184. the mean score and standard deviation for “Accelerators and incubation programs tend to be expensive or require entrepreneurs to give up equity” is 1.97 and 1.232, the mean score and standard deviation for “The current structure of incubators excludes a large percentage of the entrepreneurial population because of their limited locations, equity requirements and low acceptance rate” is 2.17 and 1.252.

It is concluded that the highest mean score was found for “The current structure of incubators excludes a large percentage of the entrepreneurial population

because of their limited locations, equity requirements and low acceptance rate” and the lowest mean score was found with “Incubation centres are unable to provide satisfactory and flexible infrastructure facilities as per the requirements of the incubatee”.

4.6 Sources of information about Incubation Centre

Table 4.27

Sources of information about Incubation Centre

	N	Mean	Rank
Official Web Site	498	4.65	1
News	498	3.87	2
Campaign/promotions by Incubation Centre	498	3.17	4
Government Notifications	498	3.18	3
Referral by friends / colleagues / institutes	498	3.08	5

Source: Primary Data

The above table 4.27 reveals that the ‘Official Web Site’ is the main source of information about Incubation Centre with the mean score of 4.65, the second source of information about Incubation Centre is ‘News’ (3.87), the third source of information about Incubation Centre is ‘Government Notifications’ (3.18). The other sources of information about Incubation Centre are ‘Campaign/promotions by Incubation Centre’ (3.17) and ‘Referral by friends / colleagues / institutes’ (3.08).

It is concluded that ‘Official Web Site’ is the main source of information about Incubation Centre and ‘Referral by friends / colleagues / institutes’ is the least important source of information about Incubation Centre.

4.7 - Part II - Independent ‘t’ test and ANOVA

4.7.1 Difference of opinion between Gender of the respondents and their attitude towards various services provided by business incubation centres

H_0 : There is no significant difference between Gender of the respondents and their attitude towards various services provided by business incubation centres.

Table 4.28

Difference of opinion between Gender of the respondents and their attitude towards various services provided by business incubation centres – Independent t test

Variables	Gender	N	Mean	Standard Deviation	t	Sig.
Environment services	Male	374	4.37	.438	.278	.781
	Female	124	4.36	.518		
Mentoring Services	Male	374	4.04	.683	1.25	.208
	Female	124	3.95	.843		
Infrastructure facilities	Male	374	4.32	.394	.144	.886
	Female	124	4.32	.506		
Financial Services	Male	374	4.26	.407	1.150	.251
	Female	124	4.21	.474		
Marketing Services	Male	374	3.96	.669	1.545	.123
	Female	124	3.85	.694		
Human Resource Services	Male	374	4.33	.404	.388	.698
	Female	124	4.35	.507		
Research and Development Assistance	Male	374	4.26	.556	0.15	.988
	Female	124	4.26	.533		
Entrepreneur Support Services	Male	374	4.42	.456	.297	.766
	Female	124	4.40	.597		
Source: Primary Data						
* Significant at 5 % level of Significance						

The table 4.28 shows the difference of opinion between Gender of the respondents and their attitude towards various services provided by business incubation centers.

All the variables such as Environment services, Mentoring Services, Infrastructure facilities, Financial Services, Marketing Services, Human Resource Services, Research and Development Assistance and Entrepreneur Support Services show that there is no significant difference between Genders of respondents, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.7.2 Difference of opinion between Place of the respondents and their attitude towards various services provided by business incubation centres

H₀: There is no significant difference between Place of the respondents and their attitude towards various services provided by business incubation centres.

Table 4.29

Difference of opinion between Place of the respondents and their attitude towards various services provided by business incubation centres – Independent t test

Variables	Gender	N	Mean	Standard Deviation	t	Sig.
Environment services	Rural	271	4.44	.427	3.761	.000*
	Urban	227	4.28	.481		
Mentoring Services	Rural	271	4.11	.603	3.114	.002*
	Urban	227	3.91	.839		
Infrastructure facilities	Rural	271	4.35	.400	1.830	.068
	Urban	227	4.28	.449		
Financial Services	Rural	271	4.22	.381	-1.65	.099
	Urban	227	4.28	.470		
Marketing Services	Rural	271	3.92	.686	-.261	.794
	Urban	227	3.94	.666		
Human Resource Services	Rural	271	4.33	.414	-.308	.758
	Urban	227	4.34	.452		
Research and Development Assistance	Rural	271	4.23	.602	-1.45	.147
	Urban	227	4.30	.479		
Entrepreneur Support Services	Rural	271	4.40	.506	-.785	.433
	Urban	227	4.43	.481		
Source: Primary Data						
* Significant at 5 % level of Significance						

The table 4.29 shows the difference of opinion between Place of the respondents and their attitude towards various services provided by business incubation centers.

The variables such as Environment services and Mentoring Services show that there is a significant difference between Places of respondents, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

The rest of the variable such as Infrastructure facilities, Financial Services, Marketing Services, Human Resource Services, Research and Development Assistance and Entrepreneur Support Services show that there is no significant difference between Places of respondents, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.7.3 Difference of opinion between Nature of Start-up of the respondents and their attitude towards various services provided by business incubation centres

H₀: There is no significant difference between Nature of Start-up of the respondents and their attitude towards various services provided by business incubation centres.

Table 4.30

Difference of opinion between Nature of Start-up of the respondents and their attitude towards various services provided by business incubation centres – Independent t test

Variables	Gender	N	Mean	Standard Deviation	t	Sig.
Environment services	Technical	371	4.39	.421	2.25	.025*
	Non – Technical	127	4.29	.547		
Mentoring Services	Technical	371	3.97	.758	-2.55	.011*
	Non – Technical	127	4.16	.605		
Infrastructure facilities	Technical	371	4.32	.446	.038	.970
	Non – Technical	127	4.32	.353		
Financial Services	Technical	371	4.27	.420	1.850	.065
	Non – Technical	127	4.19	.434		
Marketing Services	Technical	371	3.88	.717	-3.08	.002*
	Non – Technical	127	4.09	.511		
Human Resource Services	Technical	371	4.36	.422	1.86	.063
	Non – Technical	127	4.27	.455		
Research and Development Assistance	Technical	371	4.23	.580	-2.42	.016*
	Non – Technical	127	4.36	.436		
Entrepreneur Support Services	Technical	371	4.42	.509	.760	.448
	Non – Technical	127	4.38	.450		
Source: Primary Data						
* Significant at 5 % level of Significance						

The table 4.30 shows the difference of opinion between Nature of Start-up of the respondents and their attitude towards various services provided by business incubation centers.

The variables such as Environment services, Mentoring Services, Marketing Services and Research and Development Assistance show that there is a significant difference between Nature of Start-up of respondents, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

The rest of the variable such as Infrastructure facilities, Financial Services, Human Resource Services and Entrepreneur Support Services show that there is no significant difference between Nature of Start-up of respondents, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.7.4 Difference of opinion between Incubatees having Patents and their attitude towards various services provided by business incubation centres

H₀: There is no significant difference between Incubatees having Patents and their attitude towards various services provided by business incubation centres.

Table 4.31

Difference of opinion between Incubatees having Patents and their attitude towards various services provided by business incubation centres – Independent t test

Variables	Gender	N	Mean	Standard Deviation	t	Sig.
Environment services	Yes	377	4.39	.434	1.973	.049*
	No	121	4.30	.523		
Mentoring Services	Yes	377	4.05	.716	1.575	.116
	No	121	3.93	.753		
Infrastructure facilities	Yes	377	4.35	.353	2.783	.006*
	No	121	4.23	.587		
Financial Services	Yes	377	4.24	.422	-.418	.676
	No	121	4.26	.432		
Marketing Services	Yes	377	3.92	.684	-.773	.440
	No	121	3.97	.652		
Human Resource Services	Yes	377	4.31	.418	-2.243	.025*
	No	121	4.41	.466		
Research and Development Assistance	Yes	377	4.30	.556	3.052	.002*
	No	121	4.13	.510		
Entrepreneur Support Services	Yes	377	4.44	.437	2.303	.022*
	No	121	4.32	.635		

Source: Primary Data

* Significant at 5 % level of Significance

The table 4.31 shows the difference of opinion between Incubatees having Patents and their attitude towards various services provided by business incubation centers.

The variables such as Environment services, Infrastructure facilities, Human Resource Services, Research and Development Assistance and Entrepreneur Support Services show that there is a significant difference between Incubatees having Patents, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

The rest of the variables such as Mentoring Services, Financial Services and Marketing Services show that there is no significant difference between Incubatees having Patents, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.7.5 Difference of opinion between Age of the respondents and their attitude towards various services provided by business incubation centres

H₀: There is no significant difference between Age of the respondents and their attitude towards various services provided by business incubation centres

Table 4.32

Difference of opinion between Age of the respondents and their attitude towards various services provided by business incubation centres - ANOVA

Demographic Variables	Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
Environment Services	BG	1.494	3	.498	2.389	.068
	WG	102.981	494	.208		
	Total	104.475	497			
Mentoring Services	BG	6.211	3	2.070	3.994	.008*
	WG	256.058	494	.518		
	Total	262.270	497			
Infrastructure facilities	BG	2.613	3	.871	4.958	.002*
	WG	86.776	494	.176		
	Total	89.388	497			
Financial	BG	3.115	3	1.038	5.938	.001*

Services	WG	86.396	494	.175		
	Total	89.511	497			
Marketing Services	BG	2.311	3	.770	1.691	.168
	WG	225.004	494	.455		
	Total	227.315	497			
Human Resource Services	BG	2.383	3	.794	4.354	.005*
	WG	90.135	494	.182		
	Total	92.518	497			
Research and Development Assistance	BG	3.802	3	1.267	4.273	.005*
	WG	146.548	494	.297		
	Total	150.350	497			
Entrepreneur Support Services	BG	1.958	3	.653	2.696	.045*
	WG	119.545	494	.242		
	Total	121.503	497			
Source: Primary Data						
* Significant at 5 % level of Significance						
BG - Between Groups WG - Within Groups						

The table 4.32 shows the difference of opinion between Age of the respondents and their attitude towards various services provided by business incubation centers.

The variables such as Mentoring Services, Infrastructure facilities, Financial Services, Human Resource Services, Research and Development Assistance and Entrepreneur Support Services show that there is a significant difference between Age of the respondents, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

The rest of the variables such as Environment services and Marketing Services show that there is no significant difference between Ages of the respondents, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.7.6 Difference of opinion between Educational Background of the respondents and their attitude towards various services provided by business incubation centres

H₀: There is no significant difference between Educational Background of the respondents and their attitude towards various services provided by business incubation centres

Table 4.33

Difference of opinion between Educational Background of the respondents and their attitude towards various services provided by business incubation centres - ANOVA

Demographic Variables	Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
Environment Services	BG	3.076	3	1.025	4.996	.002*
	WG	101.399	494	.205		
	Total	104.475	497			
Mentoring Services	BG	1.391	3	.464	.878	.452
	WG	260.879	494	.528		
	Total	262.270	497			
Infrastructure facilities	BG	1.397	3	.466	2.614	.049*
	WG	87.991	494	.178		
	Total	89.388	497			
Financial Services	BG	4.623	3	1.541	8.968	.000*
	WG	84.888	494	.172		
	Total	89.511	497			
Marketing Services	BG	2.076	3	.692	1.517	.209
	WG	225.239	494	.456		
	Total	227.315	497			
Human Resource Services	BG	1.167	3	.389	2.104	.099
	WG	91.351	494	.185		
	Total	92.518	497			
Research and Development Assistance	BG	1.433	3	.478	1.585	.192
	WG	148.917	494	.301		
	Total	150.350	497			
Entrepreneur Support Services	BG	1.025	3	.342	1.400	.242
	WG	120.478	494	.244		
	Total	121.503	497			
Source: Primary Data						
* Significant at 5 % level of Significance						
BG - Between Groups			WG - Within Groups			

The table 4.33 shows the difference of opinion between Educational Background of the respondents and their attitude towards various services provided by business incubation centers.

The variables such as Environment services, Infrastructure facilities and Financial Services show that there is a significant difference between Educational Background of the respondents, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

The rest of the variables such as Mentoring Services, Marketing Services, Human Resource Services, Research and Development Assistance and Entrepreneur Support Services show that there is no significant difference between Educational Background of the respondents, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.7.7 Difference of opinion between Experience of the respondents and their attitude towards various services provided by business incubation centres

H₀: There is no significant difference between Experience of the respondents and their attitude towards various services provided by business incubation centres

Table 4.34

Difference of opinion between Experience of the respondents and their attitude towards various services provided by business incubation centres - ANOVA

Demographic Variables	Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
Environment Services	BG	2.994	3	.998	4.858	.002*
	WG	101.481	494	.205		
	Total	104.475	497			
Mentoring Services	BG	15.227	3	5.076	10.150	.000*
	WG	247.043	494	.500		
	Total	262.270	497			
Infrastructure facilities	BG	1.496	3	.499	2.803	.039*
	WG	87.892	494	.178		
	Total	89.388	497			

Financial Services	BG	1.969	3	.656	3.703	.012*
	WG	87.542	494	.177		
	Total	89.511	497			
Marketing Services	BG	2.640	3	.880	1.935	.123
	WG	224.675	494	.455		
	Total	227.315	497			
Human Resource Services	BG	1.161	3	.387	2.092	.100
	WG	91.357	494	.185		
	Total	92.518	497			
Research and Development Assistance	BG	1.171	3	.390	1.292	.276
	WG	149.179	494	.302		
	Total	150.350	497			
Entrepreneur Support Services	BG	2.983	3	.994	4.145	.006*
	WG	118.520	494	.240		
	Total	121.503	497			
Source: Primary Data						
* Significant at 5 % level of Significance						
BG - Between Groups WG - Within Groups						

The table 4.34 shows the difference of opinion between Experience of the respondents and their attitude towards various services provided by business incubation centers.

The variables such as Environment services, Mentoring Services, Infrastructure facilities, Financial Services and Entrepreneur Support Services show that there is a significant difference between Experiences of the respondents, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

The rest of the variables such as Marketing Services, Human Resource Services and Research and Development Assistance show that there is no significant difference between Experiences of the respondents, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.7.8 Difference of opinion between Year of establishment of startup and attitude of respondents towards various services provided by business incubation centres

H₀: There is no significant difference between Year of establishment of start-up and attitude of respondents towards various services provided by business incubation centres

Table 4.35

Difference of opinion between Year of establishment of startup and attitude of respondents towards various services provided by business incubation centres - ANOVA

Demographic Variables	Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
Environment Services	BG	2.068	4	.517	2.489	.043*
	WG	102.407	493	.208		
	Total	104.475	497			
Mentoring Services	BG	5.241	4	1.310	2.513	.041*
	WG	257.029	493	.521		
	Total	262.270	497			
Infrastructure facilities	BG	.554	4	.139	.769	.546
	WG	88.834	493	.180		
	Total	89.388	497			
Financial Services	BG	3.208	4	.802	4.581	.001*
	WG	86.303	493	.175		
	Total	89.511	497			
Marketing Services	BG	3.765	4	.941	2.076	.083
	WG	223.550	493	.453		
	Total	227.315	497			
Human Resource Services	BG	3.961	4	.990	5.512	.000*
	WG	88.557	493	.180		
	Total	92.518	497			
Research and Development Assistance	BG	2.926	4	.732	2.446	.046*
	WG	147.424	493	.299		
	Total	150.350	497			
Entrepreneur Support Services	BG	3.603	4	.901	3.767	.005*
	WG	117.900	493	.239		
	Total	121.503	497			

Source: Primary Data

* Significant at 5 % level of Significance

BG - Between Groups WG - Within Groups

The table 4.35 shows the difference of opinion between Year of establishment of startup and attitude of respondents towards various services provided by business incubation centres.

The variables such as Environment services, Mentoring Services, Financial Services, Human Resource Services, Research and Development Assistance and Entrepreneur Support Services show that there is a significant difference between Years of establishment of startup, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

The rest of the variables such as Infrastructure facilities and Marketing Services show that there is no significant difference between Years of establishment of startup, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.7.9 Difference of opinion between Startup Capital and attitude of respondents towards various services provided by business incubation centres

H₀: There is no significant difference between Start-up Capital and attitude of respondents towards various services provided by business incubation centres

Table 4.36

Difference of opinion between Startup Capital and attitude of respondents towards various services provided by business incubation centres - ANOVA

Demographic Variables	Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
Environment Services	BG	4.661	3	1.554	7.689	.000*
	WG	99.814	494	.202		
	Total	104.475	497			
Mentoring Services	BG	5.482	3	1.827	3.516	.015*
	WG	256.787	494	.520		
	Total	262.270	497			
Infrastructure facilities	BG	2.728	3	.909	5.183	.002*
	WG	86.661	494	.175		
	Total	89.388	497			

Financial Services	BG	3.365	3	1.122	6.432	.000*
	WG	86.146	494	.174		
	Total	89.511	497			
Marketing Services	BG	2.389	3	.796	1.749	.156
	WG	224.926	494	.455		
	Total	227.315	497			
Human Resource Services	BG	3.191	3	1.064	5.882	.001*
	WG	89.327	494	.181		
	Total	92.518	497			
Research and Development Assistance	BG	6.990	3	2.330	8.029	.000*
	WG	143.360	494	.290		
	Total	150.350	497			
Entrepreneur Support Services	BG	2.422	3	.807	3.349	.019*
	WG	119.081	494	.241		
	Total	121.503	497			
Source: Primary Data						
* Significant at 5 % level of Significance						
BG - Between Groups WG - Within Groups						

The table 4.36 shows the difference of opinion between Startup Capital and attitude of respondents towards various services provided by business incubation centres.

The variables such as Environment services, Mentoring Services, Infrastructure facilities, Financial Services, Human Resource Services, Research and Development Assistance and Entrepreneur Support Services show that there is a significant difference between Startup Capital, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

The rest of the variables such as Marketing Services show that there is no significant difference between Startup Capital, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.7.10 Difference of opinion between Form of Business and attitude of respondents towards various services provided by business incubation centres

H₀: There is no significant difference between Form of Business and attitude of respondents towards various services provided by business incubation centres

Table 4.37

Difference of opinion between Form of Business and attitude of respondents towards various services provided by business incubation centres - ANOVA

Demographic Variables	Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
Environment Services	BG	.442	3	.147	.699	.553
	WG	104.034	494	.211		
	Total	104.475	497			
Mentoring Services	BG	2.698	3	.899	1.711	.164
	WG	259.572	494	.525		
	Total	262.270	497			
Infrastructure facilities	BG	4.166	3	1.389	8.050	.000*
	WG	85.222	494	.173		
	Total	89.388	497			
Financial Services	BG	5.478	3	1.826	10.734	.000*
	WG	84.033	494	.170		
	Total	89.511	497			
Marketing Services	BG	2.451	3	.817	1.795	.147
	WG	224.864	494	.455		
	Total	227.315	497			
Human Resource Services	BG	2.390	3	.797	4.367	.005*
	WG	90.128	494	.182		
	Total	92.518	497			
Research and Development Assistance	BG	5.974	3	1.991	6.813	.000*
	WG	144.377	494	.292		
	Total	150.350	497			
Entrepreneur Support Services	BG	.783	3	.261	1.068	.362
	WG	120.720	494	.244		
	Total	121.503	497			

Source: Primary Data

* Significant at 5 % level of Significance

BG - Between Groups WG - Within Groups

The table 4.37 shows the difference of opinion between Form of Business and attitude of respondents towards various services provided by business incubation centres.

The variables such as Environment Infrastructure facilities, Financial Services, Human Resource Services and Research and Development Assistance show that there is a significant difference between Form of Business, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

The rest of the variables such as Environment services, Mentoring Services, Marketing Services and Entrepreneur Support Services show that there is no significant difference between Form of Business, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.7.11 Difference of opinion between Current Status of the business in incubation Centre and attitude of respondents towards various services provided by business incubation centres

H₀: There is no significant difference between Current Status of the business in incubation Centre and attitude of respondents towards various services provided by business incubation centres

Table 4.38

Difference of opinion between Current Status of the business in incubation Centre and attitude of respondents towards various services provided by business incubation centres - ANOVA

Demographic Variables	Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
Environment Services	BG	1.496	2	.748	3.595	.028*
	WG	102.980	495	.208		
	Total	104.475	497			
Mentoring Services	BG	3.317	2	1.658	3.170	.043*
	WG	258.953	495	.523		
	Total	262.270	497			
Infrastructure	BG	2.756	2	1.378	7.875	.000*

facilities	WG	86.632	495	.175		
	Total	89.388	497			
Financial Services	BG	2.888	2	1.444	8.250	.000*
	WG	86.624	495	.175		
	Total	89.511	497			
Marketing Services	BG	14.274	2	7.137	16.582	.000*
	WG	213.041	495	.430		
	Total	227.315	497			
Human Resource Services	BG	2.435	2	1.218	6.691	.001*
	WG	90.083	495	.182		
	Total	92.518	497			
Research and Development Assistance	BG	5.273	2	2.636	8.995	.000*
	WG	145.078	495	.293		
	Total	150.350	497			
Entrepreneur Support Services	BG	.646	2	.323	1.322	.267
	WG	120.857	495	.244		
	Total	121.503	497			
Source: Primary Data						
* Significant at 5 % level of Significance						
BG - Between Groups WG - Within Groups						

The table 4.38 shows the difference of opinion between Current Status of the business in incubation Centre and attitude of respondents towards various services provided by business incubation centres.

The variables such as Environment services, Mentoring Services, Infrastructure facilities, Financial Services, Marketing Services, Human Resource Services and Research and Development Assistance show that there is a significant difference between Current Status of the business in incubation Centre, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

The rest of the variable such as Entrepreneur Support Services shows that there is no significant difference between Current Status of the business in incubation Centre, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.7.12 Difference of opinion between Nature of Product / Service and attitude of respondents towards various services provided by business incubation centres

H₀: There is no significant difference between Nature of Product / Service and attitude of respondents towards various services provided by business incubation centres

Table 4.39

Difference of opinion between Nature of Product / Service and attitude of respondents towards various services provided by business incubation centres - ANOVA

Demographic Variables	Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
Environment Services	BG	.291	2	.146	.692	.501
	WG	104.184	495	.210		
	Total	104.475	497			
Mentoring Services	BG	1.857	2	.928	1.765	.172
	WG	260.413	495	.526		
	Total	262.270	497			
Infrastructure facilities	BG	.205	2	.103	.570	.566
	WG	89.183	495	.180		
	Total	89.388	497			
Financial Services	BG	1.012	2	.506	2.831	.060
	WG	88.499	495	.179		
	Total	89.511	497			
Marketing Services	BG	6.714	2	3.357	7.533	.001*
	WG	220.600	495	.446		
	Total	227.315	497			
Human Resource Services	BG	.677	2	.338	1.824	.162
	WG	91.841	495	.186		
	Total	92.518	497			
Research and Development Assistance	BG	3.506	2	1.753	5.909	.003*
	WG	146.844	495	.297		
	Total	150.350	497			
Entrepreneur Support Services	BG	.615	2	.308	1.260	.285
	WG	120.888	495	.244		
	Total	121.503	497			
Source: Primary Data						
* Significant at 5 % level of Significance						
BG - Between Groups		WG - Within Groups				

The table 4.39 shows the difference of opinion between Nature of Product / Service and attitude of respondents towards various services provided by business incubation centres.

The variables such as Marketing services and Research and Development Assistance show that there is a significant difference between Nature of Product / Service, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

The rest of the variables such as Environment services, Mentoring Services, Infrastructure facilities, Financial Services, Human Resource Services, and Entrepreneur Support Services show that there is no significant difference between Nature of Product / Service, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.7.13 Difference of opinion between Gender of the respondents and their Satisfaction towards various services provided by business incubation centres

H₀: There is no significant difference between Gender of the respondents and their Satisfaction towards various services provided by business incubation centres.

Table 4.40

Difference of opinion between Gender of the respondents and their Satisfaction towards various services provided by business incubation centres – Independent t test

Variables	Labels	N	Mean	Standard Deviation	t	Sig.
Satisfaction	Male	374	4.39	.391	-2.56	.011*
	Female	124	4.46	.232		
Source: Primary Data						
* Significant at 5 % level of Significance						

The table 4.40 shows the difference of opinion between Gender of the respondents and their Satisfaction towards various services provided by business incubation centers.

Satisfaction shows that there is a significant difference between genders of the respondents, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

4.7.14 Difference of opinion between Place of the respondents and their Satisfaction towards various services provided by business incubation centres

H₀: There is no significant difference between Place of the respondents and their Satisfaction towards various services provided by business incubation centres.

Table 4.41

Difference of opinion between Place of the respondents and their Satisfaction towards various services provided by business incubation centres – Independent t test

Variables	Labels	N	Mean	Standard Deviation	t	Sig.
Satisfaction	Rural	271	4.43	.350	1.256	.210
	Urban	227	4.39	.370		
Source: Primary Data						
* Significant at 5 % level of Significance						

The table 4.41 shows the difference of opinion between Place of the respondents and their Satisfaction towards various services provided by business incubation centers.

Satisfaction shows that there is no significant difference between Places of the respondents, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.7.15 Difference of opinion between Nature of startup and Satisfaction of respondents towards various services provided by business incubation centres

H₀: There is no significant difference between Nature of start up and Satisfaction of respondents towards various services provided by business incubation centres.

Table 4.42

Difference of opinion between Nature of start up and Satisfaction of respondents towards various services provided by business incubation centres – Independent t test

Variables	Labels	N	Mean	Standard Deviation	t	Sig.
Satisfaction	Technical	371	4.40	.335	-.677	.499
	Non - Technical	127	4.43	.425		
Source: Primary Data						
* Significant at 5 % level of Significance						

The table 4.42 shows the difference of opinion between Nature of start up and Satisfaction of respondents towards various services provided by business incubation centers.

Satisfaction shows that there is no significant difference between Natures of start up, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.7.16 Difference of opinion between Incubatees having Patents and their Satisfaction towards various services provided by business incubation centres

H₀: There is no significant difference between Incubatees having Patents and their Satisfaction towards various services provided by business incubation centres.

Table 4.43

Difference of opinion between Incubatees having Patents and their Satisfaction towards various services provided by business incubation centres – Independent t test

Variables	Labels	N	Mean	Standard Deviation	t	Sig.
Satisfaction	Yes	377	4.39	.372	-2.02	.044*
	No	121	4.47	.312		
Source: Primary Data						
* Significant at 5 % level of Significance						

The table 4.43 shows the difference of opinion between Incubatees having Patents and their Satisfaction towards various services provided by business incubation centres.

Satisfaction shows that there is a significant difference between Incubatees having Patents, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

4.7.17 Difference of opinion between Age of the respondents and their Satisfaction towards various services provided by business incubation centres

H₀: There is no significant difference between Age of the respondents and their Satisfaction towards various services provided by business incubation centres

Table 4.44

Difference of opinion between Age of the respondents and their Satisfaction towards various services provided by business incubation centres - ANOVA

Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
BG	.611	3	.204	1.582	.193
WG	63.627	494	.129		
Total	64.238	497			
BG – Between Group WG – Within Group SSS- Sum of Squares MS - Mean Square					
* Significant at 5 % level of Significance					
* Source: Primary Data					

The table 4.44 shows the difference of opinion between Age of the respondents and their Satisfaction towards various services provided by business incubation centers.

Satisfaction shows that there is no significant difference between Ages of the respondents, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.7.18 Difference of opinion between Educational Background of the respondents and their Satisfaction towards various services provided by business incubation centres

H₀: There is no significant difference between Educational Background of the respondents and their Satisfaction towards various services provided by business incubation centres

Table 4.45

Difference of opinion between Educational Background of the respondents and their Satisfaction towards various services provided by business incubation centres - ANOVA

Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
BG	1.573	3	.524	4.134	.007*
WG	62.665	494	.127		
Total	64.238	497			
<i>BG – Between Group WG – Within Group SSS- Sum of Squares MS - Mean Square</i>					
<i>* Significant at 5 % level of Significance</i>					
<i>* Source: Primary Data</i>					

The table 45 shows the difference of opinion between Educational Background of the respondents and their Satisfaction towards various services provided by business incubation centers.

Satisfaction shows that there is a significant difference between Educational Background, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

4.7.19 Difference of opinion between Experience of the respondents and their Satisfaction towards various services provided by business incubation centres

H₀: There is no significant difference between Experience of the respondents and their Satisfaction towards various services provided by business incubation centres

Table 4.46

Difference of opinion between Experience of the respondents and their Satisfaction towards various services provided by business incubation centres - ANOVA

Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
BG	2.196	3	.732	5.827	.001*
WG	62.043	494	.126		
Total	64.238	497			
<i>BG – Between Group WG – Within Group SSS- Sum of Squares MS - Mean Square</i>					
<i>* Significant at 5 % level of Significance</i>					
<i>* Source: Primary Data</i>					

The table 4.46 shows the difference of opinion between Experience of the respondents and their Satisfaction towards various services provided by business incubation centers.

Satisfaction shows that there is a significant difference between Experiences of the respondents, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

4.7.20 Difference of opinion between Year of establishment of startup and Satisfaction of respondents towards various services provided by business incubation centres

H₀: There is no significant difference between Year of establishment of start-up and Satisfaction of respondents towards various services provided by business incubation centres

Table 4.47

Difference of opinion between Year of establishment of startup and Satisfaction of respondents towards various services provided by business incubation centres - ANOVA

Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
BG	.758	4	.190	1.472	.209
WG	63.480	493	.129		
Total	64.238	497			
<i>BG – Between Group WG – Within Group SSS- Sum of Squares MS - Mean Square</i>					
<i>* Significant at 5 % level of Significance</i>					
<i>* Source: Primary Data</i>					

The table 4.47 shows the difference of opinion between Year of establishment of startup and Satisfaction of respondents towards various services provided by business incubation centres.

Satisfaction shows that there is no significant difference between Years of establishment of startup, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.7.21 Difference of opinion between Startup Capital and Satisfaction of respondents towards various services provided by business incubation centres

H₀: There is no significant difference between Start-up Capital and Satisfaction of respondents towards various services provided by business incubation centres

Table 4.48

Difference of opinion between Startup Capital and Satisfaction of respondents towards various services provided by business incubation centres - ANOVA

Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
BG	.296	3	.099	.763	.515
WG	63.942	494	.129		
Total	64.238	497			
<i>BG – Between Group WG – Within Group SSS- Sum of Squares MS - Mean Square</i>					
<i>* Significant at 5 % level of Significance</i>					
<i>* Source: Primary Data</i>					

The table 4.48 shows the difference of opinion between Startup Capital and Satisfaction of respondents towards various services provided by business incubation centres.

Satisfaction shows that there is no significant difference between Years of establishment of startup, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.7.22 Difference of opinion between Form of Business and Satisfaction of respondents towards various services provided by business incubation centres

H₀: There is no significant difference between Form of Business and Satisfaction of respondents towards various services provided by business incubation centres

Table 4.49

Difference of opinion between Form of Business and Satisfaction of respondents towards various services provided by business incubation centres - ANOVA

Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
BG	4.526	3	1.509	12.482	.000*
WG	59.712	494	.121		
Total	64.238	497			
<i>BG – Between Group WG – Within Group SSS- Sum of Squares MS - Mean Square</i>					
<i>* Significant at 5 % level of Significance</i>					
<i>* Source: Primary Data</i>					

The table 4.49 shows the difference of opinion between Form of Business and Satisfaction of respondents towards various services provided by business incubation centres.

Satisfaction shows that there is a significant difference between Form of Business, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

4.7.23 Difference of opinion between Current Status of the business in incubation Centre and Satisfaction of respondents towards various services provided by business incubation centres

H₀: There is no significant difference between Current Status of the business in incubation Centre and Satisfaction of respondents towards various services provided by business incubation centres

Table 4.50

Difference of opinion between Current Status of the business in incubation Centre and Satisfaction of respondents towards various services provided by business incubation centres - ANOVA

Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
BG	1.005	2	.503	3.934	.020*
WG	63.233	495	.128		
Total	64.238	497			
<i>BG – Between Group WG – Within Group SSS- Sum of Squares MS - Mean Square</i>					
<i>* Significant at 5 % level of Significance</i>					
<i>* Source: Primary Data</i>					

The table 4.50 shows the difference of opinion between Current Status of the business in incubation Centre and Satisfaction of respondents towards various services provided by business incubation centres.

Satisfaction shows that there is a significant difference between Current Status of the business in incubation Centre, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

4.7.24 Difference of opinion between Nature of Product / Service and Satisfaction of respondents towards various services provided by business incubation centre

H₀: There is no significant difference between Nature of Product / Service and Satisfaction of respondents towards various services provided by business incubation centres

Table 4,51

Difference of opinion between Nature of Product / Service and Satisfaction of respondents towards various services provided by business incubation centres - ANOVA

Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
BG	.021	2	.010	.079	.924
WG	64.218	495	.130		
Total	64.238	497			
<i>BG – Between Group WG – Within Group SSS- Sum of Squares MS - Mean Square</i>					
<i>* Significant at 5 % level of Significance</i>					
<i>* Source: Primary Data</i>					

The table 4.51 shows the difference of opinion between Nature of Product / Service and Satisfaction of respondents towards various services provided by business incubation centres.

Satisfaction shows that there is no significant difference between Nature of Product / Service, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.8 - Part III - Correlation

4.8.1 Correlation between Various Services provided by business incubation centre and Promotion of entrepreneurship

H₀: There is no significant relationship between Various Services provided by business incubation centre and Promotion of entrepreneurship.

Table 4.52

Correlation between Various Services provided by business incubation centre and Promotion of entrepreneurship

		Environment Services	Mentoring Services	Infrastructure facilities	Financial Services	Marketing Services	Human Resource Services	Research and Development assistance	Entrepreneur Support Services	Promotion of Entrepreneurship
Environment Services	PC	1								
	Sig.									
	N	498								
Mentoring Services	PC	.144**	1							
	Sig.	.001								
	N	498	498							
Infrastructure facilities	PC	.246**	.161**	1						
	Sig.	.000	.000							
	N	498	498	498						
Financial Services	PC	.156**	.302**	.471**	1					
	Sig.	.000	.000	.000						

	N	498	498	498	498					
Marketing Services	PC	-.044	.351**	-.091*	-.048	1				
	Sig.	.332	.000	.043	.288					
	N	498	498	498	498	498				
Human Resource Services	PC	.252**	.102*	.386**	.291**	-.044	1			
	Sig.	.000	.022	.000	.000	.322				
	N	498	498	498	498	498	498			
Research and Development assistance	PC	.249**	.219**	.055	.146**	.175**	.314**	1		
	Sig.	.000	.000	.224	.001	.000	.000			
	N	498	498	498	498	498	498	498		
Entrepreneur Support Services	PC	.212**	-.001	.414**	.225**	-.214**	.395**	.146**	1	
	Sig.	.000	.977	.000	.000	.000	.000	.001		
	N	498	498	498	498	498	498	498	498	
Promotion of Entrepreneurship	PC	.254**	.231**	.323**	.467**	.302**	.292**	.285**	.509**	1
	Sig.	.005	.009	.000	.000	.008	.000	.007	.000	
	N	498	498	498	498	498	498	498	498	498

** . Correlation is significant at the 0.01 level (2-tailed)

* . Correlation is significant at the 0.05 level (2-tailed)

PC – Pearson Correlation

Source: Primary data

The table 4.52 deals with the correlation between Various Services provided by business incubation centre and Promotion of entrepreneurship. It indicates that all the independent variables of Business incubation services such as Environment services, Mentoring Services, Infrastructure facilities, Financial Services, Marketing Services, Human Resource Services, Research and Development Assistance and Entrepreneur Support Services have significant positive relationship with the dependent variable Promotion of entrepreneurship at 1 % level of significance. Hence the null hypothesis is rejected. The result also reveals that the Environment services has 25.4 percent relationship with Promotion of entrepreneurship, Mentoring Services has 23.1 percent relationship with Promotion of entrepreneurship, Infrastructure facilities has 32.3 percent relationship with Promotion of entrepreneurship, Financial Services has 46.7 percent relationship with Promotion of entrepreneurship, Marketing Services has 30.2 percent relationship with Promotion of entrepreneurship. Human Resource Services has 29.2 percent relationship with Promotion of entrepreneurship. Research and Development Assistance has 28.5 percent relationship with Promotion of entrepreneurship and Entrepreneur Support Services have 50.9 percent relationship with Promotion of entrepreneurship.

It is concluded that there is a significant positive correlation between all the variables such as Environment Services, Mentoring Services, Infrastructure facilities, Financial Services, Marketing Services, Human Resource Services, Research and Development Assistance and Entrepreneur Support Services and Promotion of entrepreneurship. Entrepreneur Support Services has the highest significant relationship with Promotion of entrepreneurship.

4.9 - Part IV – Regression

4.9.1 Effect of various services provided by the business incubation centre to promote Entrepreneurship

Table 4.53

Effect of various services provided by the business incubation centre to promote Entrepreneurship Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Effect of various services provided by the business incubation centre to promote Entrepreneurship	.726	.527	.511	.635
<i>Predictors: (Constant), Environment Services, Mentoring Services, Infrastructure facilities, Financial Services, Marketing Services, Human Resource Services, Research and Development Assistance and Entrepreneur Support Services</i>				

The multiple regressions are shown in the table 4.53. The model summary table shows R-Square for this model is .527. This means that 52.7 percent of the variation in ‘promotion of Entrepreneurship’ (dependent variable) can be explained by the eight independent variables. The table also shows the adjusted R-square for the model as 0.511.

If another independent variable is added to a multiple regression model, the R-square will increase (even if only slightly). Consequently, it becomes difficult to determine which models do the best job of explaining variation in the same dependent variable. The adjusted R-Square does just what its name implies. It adjusts the R-square by the number of predictor variables in the model. This adjustment allows the easy comparison of the explanatory power of models with different numbers of predictor variables. It also helps to decide how many variables are to be included in the regression model.

4.10 ANOVA

Table 4. 54

Effect of various services provided by the business incubation centre to promote Entrepreneurship – ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
Effect of various services provided by the business incubation centre to promote Entrepreneurship	Regression	46.925	8	5.866	10.05	.000
	Residual	285.194	489	.583		
	Total	332.120	497			
<i>Dependent Variable: Promotion of Entrepreneurship</i>						
<i>Predictors: (Constant), Environment Services, Mentoring Services, Infrastructure facilities, Financial Services, Marketing Services, Human Resource Services, Research and Development Assistance and Entrepreneur Support Services</i>						

The ANOVA table shows the F ratio for the regression model that indicates the statistical significance of the overall regression model. The F ratio is calculated the same way for regression analysis as it was done for the ANOVA technique. The variance of independent variable that is associated with the dependent variable (Promotion of Entrepreneurship) is referred to as explained variance. The remainder of the total variance in independent variable that is not associated with dependent variable is referred as unexplained variance.

The larger the F ratio, the more will be the variance in the dependent variable that is associated with the independent variable. The F value is 10.05 and the significance value is .000 which is less than 0.05, so the null hypothesis is rejected. Hence there is a significant Effect of various services provided by the business incubation centre to promote Entrepreneurship.

4.11 Effect of various services provided by the business incubation centre to promote Entrepreneurship - Coefficients

H₀: There is no significant Effect of various services provided by the business incubation centre to promote Entrepreneurship.

Table 4.55

Effect of various services provided by the business incubation centre to promote Entrepreneurship - Coefficients

Model	Variables	UC		SC	t	Sig.
		B	S.E	Beta		
Effect of various services provided by the business incubation centre to promote Entrepreneurship	(Constant)	1.271	.578		2.198	.028*
	Environment Services	.011	.081	.006	.142	.014*
	Mentoring Services	.120	.054	.106	2.199	.028*
	Infrastructure facilities	.018	.102	.010	.180	.045*
	Financial Services	.452	.096	.235	4.689	.000*
	Marketing Services	.010	.057	.008	.168	.048*
	Human Resource Services	.151	.095	.080	1.601	.023*
	Research and Development assistance	.037	.070	.025	.532	.049*
	Entrepreneur Support Services	.453	.081	.274	5.553	.000*
Dependent Variable: Promotion of Entrepreneurship.						
UC – Un standardized coefficient SC – Standardized coefficient S.E – Standard Error						
Source: Primary Data		* Significant at 5 % level of Significance				

Coefficient table explains the Effect of independent variables like Environment services, Mentoring Services, Infrastructure facilities, Financial Services, Marketing Services, Human Resource Services, Research and

Development Assistance and Entrepreneur Support Services on dependent variable called Promotion of Entrepreneurship.

The standardized coefficient beta column reveals that Business Environment Services has a beta coefficient **.006**, which is significant (.014). Mentoring Services has a beta coefficient **.106**, which is significant (.028). Infrastructure facilities have a beta coefficient **.010**, which is significant (.045). Financial services have a beta coefficient **.235**, which is significant (.000). Marketing Services has a beta coefficient **.008**, which is significant (.048), Human Resource Services has a beta coefficient **.080**, which is significant (.023), Research and Development assistance has a beta coefficient **.025**, which is significant (.049), and Entrepreneur Support Services has a beta coefficient **.274**, which is significant (.000). Thus eight variables of Business incubation services have significant effect on Promotion of Entrepreneurship.

4.12 Difference in opinions between male and female respondents regarding the challenges faced when accessing services from business incubation centers

H₀: There is no significant difference between male and female respondents regarding the challenges faced when accessing services from business incubation centers.

Table 4.56

Difference in opinions between male and female respondents regarding the challenges faced when accessing services from business incubation centers – Independent t test

Variables	Labels	N	Mean	Standard Deviation	t	Sig.
Challenges faced by the Incubatee	Male	374	1.99	1.001	-.855	.394
	Female	124	2.10	1.258		
Source: Primary Data						
* Significant at 5 % level of Significance						

The table 4.56 shows the difference in opinion between male and female respondents regarding the challenges faced when accessing services from business incubation centers.

Challenges faced by the incubatee shows that there is no significant difference between Genders of the respondents, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.13 Difference in opinions between respondents from different places regarding the challenges faced in accessing services from business incubation centers

H₀: There is no significant difference between respondents from different places regarding the challenges faced in accessing services from business incubation centers.

Table 4.57

Difference in opinions between respondents from different places regarding the challenges faced in accessing services from business incubation centers – Independent t test

Variables	Labels	N	Mean	Standard Deviation	t	Sig.
Challenges faced by the Incubatee	Rural	271	2.02	1.049	-.088	.930
	Urban	227	2.03	1.098		
Source: Primary Data						
* Significant at 5 % level of Significance						

The **table 4.57** shows the difference in opinions between respondents from different places regarding the challenges faced in accessing services from business incubation centers.

Challenges faced by the Incubatee shows that there is no significant difference between Places of the respondents, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.14 Difference in opinion between Nature of start up and Challenges faced by the Incubatee in accessing services from business incubation centers

H₀: There is no significant difference between Nature of start up and Challenges faced by the Incubatee in accessing services from business incubation centers.

Table 4.58

Difference in opinion between Nature of start up and Challenges faced by the Incubatee in accessing services from business incubation centers – Independent t test

Variables	Labels	N	Mean	Standard Deviation	t	Sig.
Challenges faced by the Incubatee	Technical	371	1.94	1.035	-2.72	.007*
	Non - Technical	127	2.25	1.143		
Source: Primary Data						
* Significant at 5 % level of Significance						

The table 4.58 shows the difference in opinion between Nature of start up and Challenges faced by the Incubatee in accessing services from business incubation centers.

Challenges faced by the Incubatee shows that there is a significant difference between Natures of start up, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

4.15 Difference in opinion between Incubatees having Patents and Challenges faced by the Incubatee in accessing services from business incubation centers

H₀: There is no significant difference between Incubatees having Patents and Challenges faced by the Incubatee in accessing services from business incubation centers.

Table 4.59

Difference in opinion between Incubatees having Patents and Challenges faced by the Incubatee in accessing services from business incubation centers – Independent t test

Variables	Labels	N	Mean	Standard Deviation	t	Sig.
Challenges faced by the Incubatee	Yes	377	2.02	1.104	-.138	.890
	No	121	2.03	.964		
Source: Primary Data						
* Significant at 5 % level of Significance						

The table 4.59 shows the difference in opinion between Incubatees having Patents and Challenges faced by the Incubatee in accessing services from business incubation centers.

Challenges faced by the Incubatee shows that there is no significant difference between Incubatees having Patents, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.16 Difference in opinion between Age of the Incubatee and Challenges faced by the Incubatee in accessing services from business incubation centers

H₀: There is no significant difference between Age of the Incubatee and Challenges faced by the Incubatee in accessing services from business incubation centers.

Table 4.60

Difference in opinion between Age of the Incubatee and Challenges faced by the Incubatee in accessing services from business incubation centers - ANOVA

Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
BG	1.994	3	.665	.578	.630
WG	567.868	494	1.150		
Total	569.862	497			
<i>BG – Between Group WG – Within Group SSS- Sum of Squares MS - Mean Square</i>					
<i>* Significant at 5 % level of Significance</i>					
<i>* Source: Primary Data</i>					

The table 4.60 shows the difference in opinion between Age of the Incubatee and Challenges faced by the Incubatee in accessing services from business incubation centers.

Challenges faced by the Incubatee shows that there is no significant difference between Ages, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.17 Difference in opinion between Educational Background of the Incubatee and Challenges faced by the Incubatee in accessing services from business incubation centers

H₀: There is no significant difference between Educational Background of the Incubatee and Challenges faced by the Incubatee in accessing services from business incubation centers.

Table 4.61

Difference in opinion between Educational Background of the Incubatee and Challenges faced by the Incubatee in accessing services from business incubation centers - ANOVA

Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
BG	10.618	3	3.539	3.126	.026*
WG	559.244	494	1.132		
Total	569.862	497			
<i>BG – Between Group WG – Within Group SSS- Sum of Squares MS - Mean Square</i>					
<i>* Significant at 5 % level of Significance</i>					
<i>* Source: Primary Data</i>					

The table 4.61 shows the difference in opinion between Educational Background of the Incubatee and Challenges faced by the Incubatee in accessing services from business incubation centers.

Challenges faced by the Incubatee shows that there is a significant difference between Educational Background, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

4.18 Difference in opinion between Experience of the Incubatee and Challenges faced by the Incubatee in accessing services from business incubation centers

H₀: There is no significant difference between Experience of the Incubatee and Challenges faced by the Incubatee in accessing services from business incubation centers.

Table 4.62

Difference in opinion between Experience of the Incubatee and Challenges faced by the Incubatee in accessing services from business incubation centers - ANOVA

Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
BG	5.171	3	1.724	1.508	.212
WG	564.692	494	1.143		
Total	569.862	497			
<i>BG – Between Group WG – Within Group SSS- Sum of Squares MS - Mean Square</i>					
<i>* Significant at 5 % level of Significance</i>					
<i>* Source: Primary Data</i>					

The table 4.62 shows the difference in opinion between Experience of the Incubatee and Challenges faced by the Incubatee in accessing services from business incubation centers.

Challenges faced by the Incubatee shows that there is no significant difference between Experiences, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.19 Difference in opinion between Year of establishment of Incubatee and Challenges faced by the Incubatee in accessing services from business incubation centers

H₀: There is no significant difference between Year of establishment of Incubatee and Challenges faced by the Incubatee in accessing services from business incubation centers.

Table 4.63

Difference in opinion between Year of establishment of Incubatee and Challenges faced by the Incubatee in accessing services from business incubation centers - ANOVA

Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
BG	9.009	4	2.252	1.980	.096
WG	560.853	493	1.138		
Total	569.862	497			
<i>BG – Between Group WG – Within Group SSS- Sum of Squares MS - Mean Square</i>					
<i>* Significant at 5 % level of Significance</i>					
<i>* Source: Primary Data</i>					

The table 4.63 shows the difference in opinion between Year of establishment of Incubatee and Challenges faced by the Incubatee in accessing services from business incubation centers.

Challenges faced by the Incubatee shows that there is no significant difference between Years of establishment of startup, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.20 Difference in opinion between Startup Capital and Challenges faced by the Incubatee in accessing services from business incubation centers

H₀: There is no significant difference between Start-up Capital and Challenges faced by the Incubatee in accessing services from business incubation centers.

Table 4.64

Difference in opinion between Startup Capital and Challenges faced by the Incubatee in accessing services from business incubation centers - ANOVA

Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
BG	6.665	3	2.222	1.949	.121
WG	563.198	494	1.140		
Total	569.862	497			
<i>BG – Between Group WG – Within Group SSS- Sum of Squares MS - Mean Square</i>					
<i>* Significant at 5 % level of Significance</i>					
<i>* Source: Primary Data</i>					

The table 4.64 shows the difference in opinion between Startup Capital and Challenges faced by the Incubatee in accessing services from business incubation centers.

Challenges faced by the Incubatee shows that there is no significant difference between Years of establishment of startup, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.21 Difference in opinion between Form of Business and Challenges faced by the Incubatee in accessing services from business incubation centers

H₀: There is no significant difference between Form of Business and Challenges faced by the Incubatee in accessing services from business incubation centers

Table 4.65

Difference in opinion between Form of Business and Challenges faced by the Incubatee in accessing services from business incubation centers - ANOVA

Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
BG	12.766	3	4.255	3.773	.011*
WG	557.097	494	1.128		
Total	569.862	497			
<i>BG – Between Group WG – Within Group SSS- Sum of Squares MS - Mean Square</i>					
<i>* Significant at 5 % level of Significance</i>					
<i>* Source: Primary Data</i>					

The table 4.65 shows the difference in opinion between Form of Business and Challenges faced by the Incubatee in accessing services from business incubation centers.

Challenges faced by the Incubatee shows that there is a significant difference between Form of Business, since its P value is less than 0.05. Hence, the null hypothesis is rejected.

4.22 Difference in opinion between Current Status of the business in incubation Centre and Challenges faced by the Incubatee in accessing services from business incubation centers

H₀: There is no significant difference between Current Status of the business in incubation Centre and Challenges faced by the Incubatee in accessing services from business incubation centers.

Table 4.66

Difference in opinion between Current Status of the business in incubation Centre and Challenges faced by the Incubatee in accessing services from business incubation centers - ANOVA

Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
BG	5.068	2	2.534	2.221	.110
WG	564.795	495	1.141		
Total	569.862	497			
<i>BG – Between Group WG – Within Group SSS- Sum of Squares MS - Mean Square</i>					
<i>* Significant at 5 % level of Significance</i>					
<i>* Source: Primary Data</i>					

The table 4.66 shows the difference in opinion between Current Status of the business in incubation Centre and Challenges faced by the Incubatee in accessing services from business incubation centers.

Challenges faced by the Incubatee shows that there is no significant difference between Current Status of the business in incubation Centre, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.23 Difference in opinion between Nature of Product / Service and Challenges faced by the Incubatee in accessing services from business incubation centers

H₀: There is no significant difference between Nature of Product / Service and Challenges faced by the Incubatee in accessing services from business incubation centers.

Table 4.67

Difference in opinion between Nature of Product / Service and Challenges faced by the Incubatee in accessing services from business incubation centers - ANOVA

Labels	Sum of Square	Degree of freedom	Mean Square	F	Sig.
BG	.289	2	.144	.125	.882
WG	569.574	495	1.151		
Total	569.862	497			
<i>BG – Between Group WG – Within Group SSS- Sum of Squares MS - Mean Square</i>					
<i>* Significant at 5 % level of Significance</i>					
<i>* Source: Primary Data</i>					

The table 4.67 shows the difference in opinion between Nature of Product / Service and Challenges faced by the Incubatee in accessing services from business incubation centers.

Challenges faced by the Incubatee shows that there is no significant difference between Nature of Product / Service, since its P value is more than 0.05. Hence, the null hypothesis is accepted.

4.24 Conclusion

The success and sustainability of businesses are significantly impacted by the services offered by business incubation centres and the opinions of entrepreneurs towards them. Infrastructure, financial aid, networking opportunities, mentoring, and business development services are just a few of the many services provided by

business incubation centres. These services are essential for lowering the risks involved with early-stage businesses and improving their prospects of long-term viability.

In general, entrepreneurs have a favourable opinion of incubation services because they understand how valuable they are in terms of offering vital resources and direction. However, depending on variables like accessibility, relevance, and tailoring to particular company requirements, these services' efficacy vary. Even while the majority of business owners value the assistance, there are still certain issues, like red tape, a lack of capital, and the requirement for greater mentorship tailored to the sector.

All things considered, the results highlight how crucial it is to keep improving incubation programs in order to better meet the changing demands of entrepreneurs. Incubation services can play a more significant role in promoting economic development and entrepreneurial success if they are strengthened through focused interventions, policy support, and cooperation with industry players.

CHAPTER 5

SUMMARY OF FINDINGS AND CONCLUSION

5.1 Introduction

The objective of this chapter, which is appropriately entitled "Summary of Findings and Conclusion," is to offer a comprehensive summary of the numerous insights that have been obtained from the comprehensive investigation that was specifically designed to investigate the critical role that business incubation centres play in fostering entrepreneurship, particularly in the context of Kerala. The critical premise that entrepreneurship is a fundamental cornerstone of economic growth and more general socio-economic development serves as the foundation of this study. This is especially important in regions such as Kerala, where the establishment of small enterprises and the promotion of innovation are essential components of the intricate socio-economic fabric that defines the state. Institutional mechanisms that are meticulously designed to promote and accelerate entrepreneurial success are known as business incubation centres. They accomplish this by providing a comprehensive selection of critical support services that are indispensable for the establishment of new businesses. These services offer invaluable mentorship, a variety of funding opportunities, and the establishment of a collaborative ecosystem that fosters innovation and development among entrepreneurs, in addition to providing access to essential infrastructure.

The main objective of this chapter is two-fold: it attempts to present and elaborate on the significant findings that are closely associated with the research objectives put forth at the beginning of this study, and secondly, it attempts to synthesize these findings into meaningful and insightful conclusions that shed light on the current effectiveness of incubation centers located in Kerala. This chapter will also identify specific areas where improvements can be made to enhance their functioning. Each of the findings presented herein reflects the outcomes of a rigorous and thorough analysis, integrating both quantitative and qualitative data in a

manner that provides a nuanced and comprehensive understanding of the phenomena under investigation. In doing so, this chapter summarizes the empirical contributions of the study and their implications for entrepreneurship development.

This chapter presents a comprehensive summary of essential findings that merit careful consideration. The analysis encompasses the developmental paths and successes attained by different incubation centres, as well as the satisfaction levels expressed by incubatees concerning the services rendered to them. The examination extends to explore the various incubation interventions enacted by these centres, while evaluating their overall efficacy in nurturing and advancing entrepreneurial initiatives. The various challenges and limitations encountered by incubatees in their pursuit of access to these services are equally significant. A thorough investigation into these challenges and limitations provides a complete and detailed understanding of the operational bottlenecks that could hinder progress and the systemic inefficiencies that frequently exist in the process.

This chapter, in response to the exhaustive summary of findings that was previously provided, presents a precisely selected collection of recommendations that are securely grounded in solid evidence. These recommendations are specifically intended to considerably improve the overall efficacy and capacity of incubation centres situated in Kerala. The challenges and voids that have emerged as part of the entrepreneurial landscape have been carefully considered in the development of these recommendations. It is these voids, which are specifically designed to accommodate those who are actively involved in policy formulation, administration, and management, who are responsible for the entrepreneurial landscape that should benefit from this type of analysis. More than these findings, which substantiate the role of incubation centres as the all-important and critical component of successful entrepreneurship development and practice, these conclusions also underscore the necessity of the development of adaptive strategies to address the ever-changing environment in which entrepreneurs live, operate, and influence entrepreneurship development.

This chapter's ultimate objective is to make a substantial contribution to the ongoing scholarly research discussions on business incubation and its corresponding entrepreneurial growth. This will be accomplished by conducting a comprehensive and systemic examination of various types of incubation practices and their associated results. However, the lessons that can be derived from such an outcome are not limited to the specific confines of Kerala's ecosystem; they are applicable and valuable to other ecosystems on a global scale. The current chapter effectively connects and bridges the divide between empirical evidence and practical applications by completing this critical task. In the dynamic and evolving field of entrepreneurship and incubation, this critical link establishes a firm foundation and establishes the groundwork for future research endeavours and the development of appropriate policies.

5.2 Statement of the Problem

Business incubation centers play a prominent role in fostering entrepreneurship by providing critical support, including mentoring, funding, infrastructure, and networking resources. However, many entrepreneurs still face challenges in actually accessing these resources. Nature of the startup, qualification of the founders, business type, and many such factors often influence the specific issues, while the overall dynamics of entrepreneurship are dynamically changing and thus require constant revamping of services. Even though the number of incubation centres in Kerala is growing and has a big effect on the startup environment, not much is known about how well these centres meet the needs of their incubatees, what problems they face, and what areas need improvement. The study's goals are to look at how business incubation centres work and what problems their incubatees have, as well as to come up with some good ideas for how to make the centres' services better so that everyone has equal access to resources and long-term entrepreneurial growth.

5.3 Objectives of the study

The primary objective of the study is to analyse the **role of business incubation centers in promoting entrepreneurship in Kerala**, focusing on their

contributions to entrepreneurial development, the challenges faced, and the potential improvements required to enhance their effectiveness in fostering startups and innovation. The study aims to understand how these centers aid incubatees through various services, including mentoring, infrastructure, funding, and networking, while evaluating their overall impact on entrepreneurship in the region. To achieve this objective, the following objectives are framed

1. To identify the growth and developments of business incubation centres for entrepreneurial development.
2. To study the attitude of incubatees towards various services provided by business incubation centres.
3. To analyse the satisfaction level of incubatees towards the services provided by incubation centres.
4. To analyse the effect of various services provided by the business incubation centre to promote entrepreneurship in Kerala.
5. To evaluate the challenges faced by the incubatee in getting services from the business incubation centres.
6. To make recommendations for making business incubation centres in Kerala more effective in fulfilling their role of promoting entrepreneurship.

5.4 Hypotheses of the study

H0. There is no significant relationship between Enabling Environment services provided by incubation centres and Promotion of Entrepreneurship

H0. There is no significant relationship between Mentoring services provided by incubation centres and Promotion of Entrepreneurship

H0. There is no significant relationship between Physical Infrastructure services provided by incubation centres and Promotion of Entrepreneurship

H0. There is no significant relationship between financial services and assistance provided by incubation centres and Promotion of Entrepreneurship

H0. There is no significant relationship between Marketing and Networking Services provided by incubation centres and Promotion of Entrepreneurship

H0. There is no significant relationship between Human Resource Services provided by incubation centres and Promotion of Entrepreneurship

H0. There is no significant relationship between Research and Development assistance provided by incubation centres and Promotion of Entrepreneurship

H0. There is no significant relationship between Entrepreneur Support Services provided by incubation centres and Promotion of Entrepreneurship

In order to analyse these hypotheses with Independent 't' test, ANOVA, Correlation and Multiple Regression Analysis the following hypothesis were formulated and tested

H1: There is no significant difference between genders in their satisfaction with services provided by business incubation centers.

H2: There is no significant difference between rural and urban respondents in their satisfaction with services.

H3: There is no significant difference between technical and non-technical startups in their satisfaction with services.

H4: There is no significant difference between incubatees with and without patents in their satisfaction with services.

H5: There is no significant difference in satisfaction levels across different age groups.

H6: There is no significant difference in satisfaction levels based on educational background.

H7: There is no significant difference in satisfaction levels based on the experience of the incubatees.

H8: There is no significant difference in satisfaction levels based on the year of establishment of the startups.

H9: There is no significant difference in satisfaction levels based on startup capital.

H10: There is no significant difference in satisfaction levels based on the form of business.

H11: There is no significant difference in satisfaction levels based on the current business status in the incubation center.

H12: There is no significant difference in satisfaction levels based on the nature of the product/service.

H13: There is no significant relationship between intervention activities provided by business incubation centers and the satisfaction levels of incubatees.

H14: There is no significant relationship between services provided by business incubation centers and the promotion of entrepreneurship.

H15: There is no significant effect of environment services on the promotion of entrepreneurship.

H16: There is no significant effect of mentoring services on the promotion of entrepreneurship.

H17: There is no significant effect of infrastructure facilities on the promotion of entrepreneurship.

H18: There is no significant effect of financial services on the promotion of entrepreneurship.

H19: There is no significant effect of marketing services on the promotion of entrepreneurship.

H20: There is no significant effect of human resource services on the promotion of entrepreneurship.

H21: There is no significant effect of research and development assistance on the promotion of entrepreneurship.

H22: There is no significant effect of entrepreneur support services on the promotion of entrepreneurship.

H23: There is no significant difference between genders regarding challenges faced in accessing services.

H24: There is no significant difference between rural and urban respondents regarding challenges faced in accessing services.

H25: There is no significant difference between the nature of the startup and challenges faced in accessing services.

H26: There is no significant difference between incubatees with and without patents regarding challenges faced.

H27: There is no significant difference in challenges faced across different age groups.

H28: There is no significant difference in challenges faced based on educational background.

H29: There is no significant difference in challenges faced based on experience.

H30: There is no significant difference in challenges faced based on the year of establishment of the startup.

H31: There is no significant difference in challenges faced based on startup capital.

H32: There is no significant difference in challenges faced based on the form of business.

H33: There is no significant difference in challenges faced based on the current status of the business in the incubation center.

H34: There is no significant difference in challenges faced based on the nature of the product/service.

H35: There is no significant relationship between the challenges identified and the recommendations for improving incubation center services.

5.5 Research methodology

The research methodology used is descriptive and analytical in investigating the role of business incubation centers in Kerala, with special reference to their impact on entrepreneurship and the problems faced by incubatees. The information was collected through structured questionnaires targeted at entrepreneurs and startups associated with these centers. Both primary data, which are responses from the survey, and secondary data, which are reports and records, were analyzed using statistical methods like t-tests, ANOVA, correlation and regression analysis to identify the relationships between incubation services, satisfaction levels, and entrepreneurial success. The study ensures representation through proportionate stratified random sampling and upholds ethical principles by ensuring that participants' confidentiality is ensured. This methodological approach provides a systematic framework for understanding the effectiveness of incubation centers and identifying opportunities for improvement. The sample size of the study was 498.

5.6 Chapterization

The report of the study has been presented in seven chapters as shown below.

Chapter 1. Introduction

The first chapter is the introduction and covers the back ground of the study, significance, statement of research problem, research questions, scope of the study, objectives of the study, hypotheses, operational definition of terms and concepts, methodology and data base, variables used, reliability and validity testing, conceptual model, tools used for the analysis, limitations of the study and chapter scheme of the research report.

Chapter 2. Review of Literature

Chapter two presents a review of the available literature on the previous studies on the related area of research and includes 174 reviews. The literature review have presented in seven heads;

1. Rationale of Innovative entrepreneurship - 19
2. Challenges of Technology Entrepreneurship- 5
3. Role of Entrepreneurship in mitigating unemployment issues - 10
4. Evolution of Business Incubation Centres- 47
5. Rationale of BIS in promoting entrepreneurship - 26
6. Determinants of Business Incubation's performance - 10
7. Evaluation of performance of BIS – 47
8. Recent developments in the startup eco system of Kerala and Govt, policies - 10

Chapter 3. Theoretical Framework of Business Incubation Centres

This chapter deals with a Theoretical Framework of the study. It includes history of Business Incubation, Business Incubation across the Globe - Few Models, Business Incubation in India

Technology Incubation and Development of Entrepreneurs (TIDE), Entrepreneur and Entrepreneurship, Entrepreneurship as a solution to the problem of

unemployment, Incubation centres – Characteristics – benefits – downsides, The role of Business Incubation Centres (Business Incubators) in promoting entrepreneurship through small business development Development of SMEs through Incubators , Biotech Parks and Incubators’ under the Scheme of Department of Bio Technology, Models of STEPs and TBIs , Indian STEP and Business Incubator Association Industrial Background of Kerala in Brief, and Business Incubation Centers in Kerala

Chapter 4. Analysis and Interpretation

This chapter covers the analysis of the services provided by Business Incubation Centres with various statistical tools in relation with the hypothesis.

Chapter 5. Summary of Findings and Conclusion

Chapter 5 contains the summary of the findings on the basis of objectives of the study and conclusions.

Chapter 6. Recommendations and Scope for Further Research.

This chapter contains recommendations and suggests a few topics for further research in the field. It also includes the implications of the study.

5.7 Findings of the study

5.7.1 *Objective 1: To identify the growth and developments of business incubation centres for entrepreneurial development.*

After conducting thorough analysis and careful interpretation of the gathered primary and secondary data, several significant key findings emerged concerning the vital role that business incubation centers play in fostering and promoting entrepreneurship within the region of Kerala:

The Indian startup ecosystem experienced rapid growth between 2010 and 2024, with a 30-fold increase in startups. The surge in funding, from USD 0.5 billion in 2010 to USD 14.4 billion in 2024, indicates a maturing and scaling of Indian firms. The startup hub growth expanded to Hyderabad, Pune, and Chennai, demonstrating a decentralization of innovation. Iconic startups emerged, disrupting

industries and inspiring entrepreneurship. By 2024, India's startup environment rivals the US and China in volume and inventiveness, with sectoral diversity including fintech, edtech, healthtech, and AI.

Kerala's startup ecosystem has seen a significant growth from 2015 to 2024, indicating its status as a regional innovation hub in India. The number of startups has increased from 200 to over 5,000, with the most significant growth occurring between 2021 and 2024. The state has also seen an increase in funding, from \$5 million in 2015 to \$100 million by 2024, indicating increased investor interest and better startup quality. The principal startup centers are Kochi and Thiruvananthapuram, home to key incubation centers and innovation hubs like the Kerala Startup Mission. Kerala has seen the emergence of innovative and diverse startups, including Genrobotics, Agrima, SurveySparrow, CareStack, and ZappyHire. The state is also focusing on deep tech, aerospace, and AI-based companies.

India and Kerala have seen a significant increase in business incubation centres since 2010, indicating a growing startup ecosystem in the country. India's incubation centres have doubled from 50 to 120 between 2010 and 2013, and between 2016 and 2022, they have grown by 632. Kerala's incubation centres have increased 13-fold from 5 in 2010 to 68 in 2024, following the national trend. The Kerala Startup Mission, Innovation and Entrepreneurship Development Centres, and public-private partnerships are helping the state keep up with national growth. Startups outside metro hubs now have access to mentorship, infrastructure, funding, and industry links. Kerala has become a regional leader in incubation, enabling startups and promoting sustainable and inclusive economic development.

A. Demographic features of Incubatees:

- A majority of the incubatees, 75.1%, were male respondents. In addition, the number of professionals among them was significant at 52.4%, and that of postgraduates, who made up 31.7% of the respondents, was also important.
- A total of 68.7% of the participants belongs to the age from 25 to 35 years, suggesting the existence of a young and vibrant entrepreneurial population.

B. Background Information of Incubatee

- Majority of incubatees held previous experience, and most with work experience; 50.2% with 3 to 6 years of service life then turned as entrepreneurs.
 - A large share of start-ups, at 46.4%, was founded in the year 2023, which in itself tells a lot of a new wave of entrepreneurship that is on the rise.
- C. Geographic Distribution:**
- It was discovered that a much higher percentage of startups—54.4%—operated in rural regions, underscoring the crucial role incubation centres play in successfully bridging the gap between urban and rural settings.
- D. Financial and Business Profiles:**
- Most startups had a capital of INR below 25 lakhs followed by 25 to 50 lakhs (44.6%), INR 50 lakhs to 1 crore (28.1%).
 - The majority were technical in nature (74.5%) and predominantly operated as registered partnership firms (37.3%).
- E. Phases in the incubation process and focus on market orientation**
- Over half (51.6%) of startups were in the incubation stage, with a strong focus on B2C (52.2%) and B2B (44.8%) markets.
- F. Services of Support**
- Most startups were dependent on personal investments, which were at 21.1%, and also relied on grants and subsidies, at 17.6%, which were also another vital source of finance.
 - The most popular incubation program was the general eligible to all category, at 69.5%, which shows how inclusive it is.
- G. Areas of Activity:**
- The highest proportion of respondents came from the software and IT sector (38.4%), then agriculture (25.3%), and hardware (12.7%).
- H. Satisfaction and Efficacy:**
- There is also an evidence of moderate to high satisfaction with services such as mentoring, infrastructure, financial aid, and research support among incubatees, though gaps in areas like advanced funding and marketing strategies have been pointed out.
- I. Challenges Encountered by Incubatees:**
- Common difficulties reported by participants included limited financial resources and lack of advanced technical mentorship, among others, causing difficulties in scaling their startups to the next level.

The significant and critical role that business incubation centres play in fostering entrepreneurial growth and innovation throughout the Kerala region is unequivocally confirmed by the extensive findings of this detailed research. By addressing critical requirements that are indispensable for entrepreneurs, such as mentorship, infrastructural development, and initial finance provision, these critical centres have made substantial contributions to the establishment of a dynamic and vibrant entrepreneurial ecosystem. The extraordinary capacity to accommodate sectors as diverse as software/IT and agriculture makes a clear case for

inclusiveness, thereby highlighting their very broad impact on the entire landscape of the economy. In spite of these accomplishments, obstacles persist, particularly in the areas of advanced funding support, specialised mentorship, and effectively bridging market access gaps. Consequently, it is imperative to resolve these issues in order to fully realise the potential of these centres in promoting sustainable entrepreneurship.

Despite the significant progress and significant strides that business incubation centres in Kerala have made in enhancing entrepreneurial capabilities, this comprehensive study concludes that there is still a significant amount of room for improvement in several critical areas. Specifically, these areas encompass the strategic alignment of these centres with the changing demands of the market, the development of innovative funding mechanisms to provide more effective support for businesses, and the implementation of targeted training programs that are tailored to the unique requirements of entrepreneurs. Not only will the overall effectiveness of these business incubation centres be improved, but Kerala will also be positioned as a model entrepreneurial location for others to aspire to by concentrating on and bolstering these critical dimensions. The research offers a wealth of valuable insights that could be of great assistance to policymakers, stakeholders, and future researchers in their respective pursuits. It underscores the necessity of promoting the implementation of dynamic and innovative methodologies that substantially improve incubation practices. In doing so, it encourages the growth of a flourishing entrepreneurial ecosystem that benefit all parties.

5.7.2 Objective 2: To study the attitude of Incubatees towards various services provided by Business Incubation Centres

This analysis examines the attitude of incubatees towards various services provided by business incubation centres in Kerala. The study employs independent t-tests and ANOVA to assess differences in attitudes based on key demographic and business-related factors.

Key Findings:

- Gender: No significant difference was found in attitudes between male and female incubatees across all services, including environment services, mentoring, infrastructure, financial services, marketing, human resources, research and development (R&D) assistance, and entrepreneur support services.
- Place of Residence: Rural incubatees exhibited significantly higher attitudes toward environment services and mentoring services than their urban counterparts. However, for other services, there was no significant difference.
- Nature of Startup:
 - Technical startups showed significantly higher attitudes toward environment services and research & development assistance.
 - Non-technical startups had a more positive attitude toward mentoring services and marketing services.
- Patents: Incubatees with patents reported significantly higher attitudes toward environment services, infrastructure facilities, human resource services, research and development assistance, and entrepreneur support services than non-patent holders.
- Age: Attitudes varied significantly with age for mentoring services, infrastructure, financial services, human resources, R&D assistance, and entrepreneur support services.
- Educational Background: Significant differences in attitude were observed for environment services, infrastructure facilities, and financial services, whereas other services showed no variation.
- Experience: More experienced incubatees reported significantly higher attitudes toward environment services, mentoring services, infrastructure, financial services, and entrepreneur support services.

- Year of Establishment: Significant differences were found in attitude toward environment services, mentoring, financial services, human resource services, R&D assistance, and entrepreneur support services.
- Startup Capital: Attitudes varied significantly for environment services, mentoring, infrastructure, financial services, human resources, R&D assistance, and entrepreneur support services.
- Form of Business: Significant differences were found for infrastructure, financial services, human resources, and R&D assistance, while other services did not show variations.
- Current Business Status: Attitudes varied significantly based on business maturity in the incubation centre for environment services, mentoring, infrastructure, financial services, marketing, human resources, and R&D assistance.
- Nature of Product/Service: The type of product/service offered by the startup significantly influenced attitudes toward marketing services and research and development assistance.

Table 5.1

Summary of result of objective 2

Hypothesis	Test Used	Result
H1: There is no significant difference between gender and attitudes toward services.	Independent t-test	Accepted: No significant difference.
H2: There is no significant difference between place of residence (rural vs. urban) and attitudes.	Independent t-test	Accepted: Except other factors, rural incubatees showed significantly higher attitudes toward environment and mentoring services.
H3: There is no significant difference between the nature of the startup (technical vs. non-technical) and attitudes.	Independent t-test	Rejected: Technical startups had higher attitudes toward environment and R&D assistance, while non-technical startups had higher attitudes toward mentoring and marketing services.

H4: There is no significant difference between having patents and attitudes toward services.	Independent t-test	Rejected: Incubatees with patents showed significantly higher attitudes toward environment, infrastructure, HR, R&D assistance, and entrepreneur support services.
H5: There is no significant difference between age and attitudes toward services.	ANOVA	Rejected: Significant variation in attitudes for mentoring, infrastructure, financial, HR, R&D assistance, and entrepreneur support services.
H6: There is no significant difference between educational background and attitudes toward services.	ANOVA	Accepted: No significant variation in attitudes for services except environment services, infrastructure, and financial services.
H7: There is no significant difference between experience and attitudes toward services.	ANOVA	Rejected: More experienced incubatees had higher attitudes toward environment, mentoring, infrastructure, financial, and entrepreneur support services.
H8: There is no significant difference between the year of establishment of the startup and attitudes.	ANOVA	Rejected: Significant differences in attitudes for environment, mentoring, financial, HR, R&D assistance, and entrepreneur support services.
H9: There is no significant difference between startup capital and attitudes toward services.	ANOVA	Rejected: Significant variation in attitudes for environment, mentoring, infrastructure, financial, HR, R&D assistance, and entrepreneur support services.
H10: There is no significant difference between the form of business and attitudes toward services.	ANOVA	Rejected: Significant variation in attitudes for infrastructure, financial services, HR, and R&D assistance.
H11: There is no significant difference between the current status of the business and attitudes toward services.	ANOVA	Rejected: Significant differences in attitudes for environment, mentoring, infrastructure, financial, marketing, HR, and R&D assistance.
H12: There is no significant difference between the nature of the product/service and attitudes toward services.	ANOVA	Rejected: Significant differences in attitude towards marketing services and R&D assistance.

The findings highlight that incubatees' attitudes toward business incubation centre services are influenced by multiple factors, including location, startup nature, patent possession, age, experience, educational background, startup capital, business form, maturity stage, and the nature of the product or service. While overall attitudes remain high, the study identifies marketing services and personalized mentorship for urban incubatees and non-patentable startups as areas needing improvement. Enhancing these services can better support different types of entrepreneurs and strengthen the startup ecosystem.

5.7.3 Objective 3: To analyze the satisfaction level of incubatees towards the services provided by business incubation centers .

This objective focuses on evaluating the satisfaction level of incubatees towards the activities, services and programs implemented by incubation centers, such as mentoring, networking, financial support, and infrastructure, and their effectiveness in fostering entrepreneurial growth and success.

- Female incubatees are satisfied with business incubation centers services more than their male counterparts. This is an indication that women may feel the services better fit their expectations or needs. This finding puts emphasis on the need for gender-sensitive approaches in the design and delivery of services.
- Satisfaction levels between incubatees residing in rural or urban locations did not vary much. This would mean that whatever the geographical location, incubation services centers are the same in terms of providing service to incubatees.
- Technical and non-technical startups reported similar levels of satisfaction. This suggests that the nature of the startup does not impact how services are perceived, indicating that incubation centers can provide universally relevant support to different types of businesses.
- Patent Holding Incubation Satisfaction level of patent-holding incubation is higher as compared to the one which is not. It reflects intellectual property importance and the price assigned to services such as R&D assistance.

Innovation, as well as technological needs, has to be nurtured in the incubation centers that will further assist the business.

- Satisfaction levels were consistent across different age groups. This means that business incubation centers offer services that are relevant and accessible to entrepreneurs of all ages, which is an indication of a broad appeal across demographics.
- Satisfaction levels differed with educational background, which implies that higher education levels might have an influence on the way services are perceived or utilized. This finding implies that there is a need to tailor services to match the different competencies and expectations of incubatees with different educational qualifications.
- More experienced incubatees are more satisfied, probably because they can better utilize the services offered. This suggests that experience is critical in shaping expectations and ensuring effective use of incubation resources.
- The year a startup was established did not significantly impact satisfaction levels. This indicates that the effectiveness of incubation services is consistent regardless of how long a business has been operational, showing adaptability to startups at different stages.
- Satisfaction levels were not influenced by the amount of startup capital, indicating that financial resources are not a factor that impacts incubatees' perception of the quality or usefulness of services.
- Different business forms had a highly significant impact on satisfaction levels, and specific organizational forms are likely to benefit more from particular incubation services. This indicates that support should be customized according to the structural needs of businesses.
- The maturity of a business within the incubation process greatly affected the satisfaction levels. This implies that businesses in different stages, whether pre-incubation, incubation, or acceleration, have different expectations and needs, requiring a differentiated approach to service delivery.

- Satisfaction levels did not vary based on the type of product or service offered. This indicates that the services provided by incubation centers are broadly applicable and effective across industries and business types.

The examination of incubatees' satisfaction levels with business incubation centres reveals some critical facts on the impact of incubation services. The findings indicate that incubation centres offer a universally applicable and uniform degree of support across diverse demographics, business categories, and financial statuses. Nevertheless, certain factors markedly affect satisfaction ratings, highlighting the necessity for a more customised approach in service provision.

Female incubatees notably express more happiness, suggesting a possible congruence between services and their expectations. This highlights the necessity of gender-sensitive policies to guarantee inclusivity. The comparable satisfaction levels among urban and rural incubatees indicate that incubation centres uphold a consistent standard of service, irrespective of their geographical location. Likewise, technical and non-technical entrepreneurs demonstrate analogous levels of satisfaction, indicating that incubation services adequately address varied business requirements.

Incubatees with patents exhibit more happiness, underscoring the significance of intellectual property assistance in promoting innovation. Moreover, although satisfaction levels are uniform across various age demographics, disparities related to educational background indicate that services ought to be tailored to distinct competencies. Seasoned incubatees generally exhibit higher satisfaction, presumably owing to their enhanced capacity to effectively leverage available resources, hence underscoring the significance of expertise in optimising incubation advantages.

The data indicates that neither the age of a company nor the initial money significantly affects satisfaction levels, suggesting that incubation services are versatile for enterprises at different stages and financial circumstances. The business structure and maturity during the incubation process influence satisfaction, indicating that incubation programs should provide tailored support according to organisational types and developmental phases.

These findings underscore the ability of business incubation centres in providing effective and inclusive support, while also indicating the necessity for focused enhancements in gender-specific methods, educational adaptation, and stage-based service customisation. By addressing these concerns, incubation centres may augment their influence, ensuring they remain an essential resource for entrepreneurial development and success.

Table 5.2
Summary of result of objective 3

Hypothesis	Test Used	Result
H1: There is no significant difference between gender and satisfaction toward services.	Independent t-test	Rejected: Females reported higher satisfaction than males.
H2: There is no significant difference between place of residence (rural vs. urban) and asatisfaction.	Independent t-test	Accepted: Place of residence did not significantly affect satisfaction.
H3: There is no significant difference between the nature of the startup (technical vs. non-technical) and satisfaction.	Independent t-test	Accepted: The nature of the startup did not significantly influence satisfaction.
H4: There is no significant difference between having patents and satisfaction towards services.	Independent t-test	Rejected: Incubatees with patents reported significantly higher satisfaction.
H5: There is no significant difference between age and satisfaction towards services.	ANOVA	Accepted: Age did not significantly impact satisfaction levels.
H6: There is no significant difference between educational background and satisfaction toward services.	ANOVA	Rejected: Satisfaction varied significantly by educational background.
H7: There is no significant difference between experience and satisfaction toward services.	ANOVA	Rejected: More experienced incubatees reported higher satisfaction.
H8: There is no significant difference between the year of establishment of the startup and satisfactionon.	ANOVA	Accepted: The year of establishment did not significantly impact satisfaction.
H9: There is no significant	ANOVA	Accepted: Startup capital did not

difference between startup capital and satisfaction towards services.		significantly influence satisfaction levels.
H10: There is no significant difference between the form of business and satisfaction towards services.	ANOVA	Rejected: Satisfaction levels varied significantly by form of business.
H11: There is no significant difference between the current status of the business and satisfaction toward services.	ANOVA	Rejected: Satisfaction levels differed significantly based on the maturity of the business in the incubation process.
H12: There is no significant difference between the nature of the product/service and attitudes toward services.	ANOVA	Accepted: The nature of the product/service did not significantly impact satisfaction.

5.7.4 Objective 4 : To analyze the effect of general incubation intervention activities of the business incubation centers on promoting entrepreneurship in Kerala.

This objective aims to evaluate how the activities and programs implemented by the incubation centers influence entrepreneurial growth, success, and sustainability, focusing on their direct and indirect impacts on promoting entrepreneurship in the region.

- A positive and statistically significant correlation between all incubation services and the promotion of entrepreneurship was identified.

The following are the results obtained; all the services produced meaningful contributions to this goal. Entrepreneur Support Services remained the most significant for a positive influence, since there is an explicit dependence in facilitating entrepreneurial growth. Strong relationships of this service indicated many aspects, including legal, strategic, and operational supports and enhance the prospect for good success for any new undertaking.

A. Impact on Entrepreneurship

- The regression analysis indicated that 52.7% of the variation in promotion of entrepreneurship is due to the incubation services collectively. Such high explanatory power signifies the efficiency of the model of integrated services delivered by business incubation centers.
- Entrepreneur Support Services had the highest standardized beta coefficient and was said to have the greatest effect. This service provides important assistance to incubatees on legal compliance, financial management, and strategic decisions to position the startup in sustainable growth.

B. Key services and their individual impact

- These services focus on incubating an entrepreneurial and resourceful environment for startups. Access to a supportive ecosystem along with shared spaces, networks, and resources helps entrepreneurs curtail their costs and facilitate their business development.
- Mentoring services are essential and enable the guiding of startups for problems they face in regards to strategy, market adaptation, and operational issues. Personalized mentorship serves to perfect business plans, find market strategies, and enhances the confidence of the entrepreneurial decisions.
- Physical and technological support is the backbone of incubation services. These include workspaces, laboratories, and IT infrastructure, among others, which enable the startups to focus on innovation and development without the high operational costs.
- Financial services are essential for entrepreneurship because they ensure that access to funding opportunities is provided and financial planning is made available. These services help startups raise investments, manage cash flow, and sustain operations.

- Marketing services were also identified as an area that needed improvement. While marketing services are helpful in brand building, customer acquisition, and market penetration for the startups, it has relatively lower influence than financial or entrepreneur support services, which are areas of strategic improvement.
- Human Resource service helps startups in recruitment, training, and employee retention. By assisting startups to build a competent workforce, incubation centers help the startups achieve operational efficiency and scalability.
- Research and Development Assistance is a service that supports innovation by helping to develop new products, research markets, and manage intellectual property. While influential, its impact is a little smaller compared to the other services, and there is room for development in this area.
- Entrepreneur Support Services is the most impactful service, this component integrates legal, financial, and strategic assistance tailored to the needs of startups. It helps businesses navigate regulatory frameworks, manage risks, and make informed decisions, making it indispensable for entrepreneurial success.

C. Effectiveness of the Overall Model

- The statistical testing verified that the overall impacts of all incubation services positively spur entrepreneurship. Hence, the null hypothesis rejection ensured that the incubation model was indeed an effective motivator for the success of the startups.
- The adjusted R-square value of the regression model was very high; therefore, it showed how strongly the collective impacts operated. This implies that an additive model in which various incubation services were combined to offer different services to entrepreneurs.

The findings are an underpinning proof of the business incubation centers' pivotal role in entrepreneurship development in Kerala. Though all services positively contribute, some areas like marketing and research and development areas need improvement for the maximum utilization of services. The most critical driver of entrepreneurial success is Entrepreneur Support Services. Thus, it requires giving greater importance to this service. By further developing low-performing areas and strengthening high-impact ones, business incubation centers can help startups continue their steady growth toward long-term success.

Table 5.3
Summary of result of objective 4

Hypothesis	Test Used	Result	Relevant Values
1. There is no significant relationship between various services and promotion of entrepreneurship.	Correlation Analysis	Rejected	Significant positive correlation ($p < 0.05$) for all services.
2. There is no significant effect of the services provided by incubation centers on promotion of entrepreneurship.	Regression Analysis	Rejected	$R^2 = 0.527$, Adjusted $R^2 = 0.511$, $F = 10.05$, $p < 0.05$
3. Environment services have no significant effect on promotion of entrepreneurship.	Regression Coefficient	Rejected	$\beta = 0.006$, $p = 0.014$
4. Mentoring services have no significant effect on promotion of entrepreneurship.	Regression Coefficient	Rejected	$\beta = 0.106$, $p = 0.028$
5. Infrastructure facilities have no significant effect on promotion of entrepreneurship.	Regression Coefficient	Rejected	$\beta = 0.010$, $p = 0.045$
6. Financial services have no significant effect on promotion of entrepreneurship.	Regression Coefficient	Rejected	$\beta = 0.235$, $p = 0.000$
7. Marketing services have no significant effect on promotion of entrepreneurship.	Regression Coefficient	Rejected	$\beta = 0.008$, $p = 0.048$
8. Human resource services have no significant effect on promotion of entrepreneurship.	Regression Coefficient	Rejected	$\beta = 0.080$, $p = 0.023$
9. Research and development assistance has no significant effect on promotion of entrepreneurship.	Regression Coefficient	Rejected	$\beta = 0.025$, $p = 0.049$
10. Entrepreneur support services have no significant effect on promotion of entrepreneurship.	Regression Coefficient	Rejected	$\beta = 0.274$, $p = 0.000$

5.7.5 Objective 5: To evaluate the challenges or issues faced by incubatees in accessing services provided by business incubation centers.

This objective focuses on identifying barriers and limitations in the service delivery process, exploring the difficulties experienced by incubatees in leveraging resources such as funding, mentorship, infrastructure, networking opportunities, and other entrepreneurial support. It aims to provide insights into areas for improvement to enhance the effectiveness of incubation centers.

- The analysis indicates no significant differences in the challenges that male and female incubatees face or between the rural and urban respondents. This shows that gender and geographical location do not influence the difficulties when accessing services from business incubation centers. Findings are that the services and challenges are perceived in a similar way across the demographics, showing a uniform approach in service delivery without considering these factors.
- The nature of the startup and the educational background of the incubatee have a major impact on the challenges encountered. Non-technical startups are much more challenging compared to their technical counterparts, which might be attributed to the specific needs and resource demands of non-technical ventures that do not fit with the current strengths of incubation services. In addition, there is also a significant role of the educational background since incubatees vary in terms of level of education, which determines the type of competencies each has towards navigating the incubation process. The findings call for appropriately designed support mechanisms that address specific needs in non-technical startups, as well as the education profile diversities of the entrepreneurs involved.
- There are no significant influences of the patents existing, the age of the incubatee, and the incubatee's experience on challenges related to accessing services. This would imply that these characteristics are not significant barriers for the incubatees and, therefore, it suggests that the services are

broadly accessible and fair in their provisions without consideration of these characteristics. The finding highlights the business incubation centers' capability of leveling the playing field as far as access to resources is concerned.

- The form of business most likely has an impact on the challenges incubatees experience. Sole proprietorships, partnerships, or corporations are bound to have different operational and resource needs. The differences in needs may result in different experiences and challenges while using incubation services. The conclusion is that one should be aware of the specific requirements of various forms of businesses and adapt support to be effective in addressing these needs.
- The study did not record significant differences in challenges with a regard to factors like the year it started the startup, the size of startup capital, the current standing of the business in terms of the incubation centre, or the type of product or service provided. This suggests that these variables do not substantially affect the ease of accessing services, indicating a level of consistency in the challenges faced across these dimensions. This highlights the robustness of incubation services in maintaining a consistent experience irrespective of these factors.

The findings emphasize the critical need for business incubation centers to tailor their services to meet the unique challenges associated with the nature of the startup and the educational background of the incubatee. Moreover, understanding and catering to the needs of different business forms can help minimize disparities and improve the effectiveness of the services provided. These insights underscore that there is a need to pursue a more personalized and flexible approach that ensures all incubatees have equal access to resources and support.

Table 5.4
Summary of result of objective 5

	Hypothesis	Test Used	Result	Relevant Values
9	There is no significant difference between male and female respondents regarding the challenges faced.	Independent t-test	Accepted	t = -0.855, p = 0.394
10	There is no significant difference between respondents from different places regarding the challenges faced.	Independent t-test	Accepted	t = -0.088, p = 0.930
11	There is no significant difference between the nature of the startup and challenges faced by the incubatee.	Independent t-test	Rejected	t = -2.72, p = 0.007
12	There is no significant difference between incubatees having patents and challenges faced.	Independent t-test	Accepted	t = -0.138, p = 0.890
13	There is no significant difference between age and challenges faced by the incubatee.	ANOVA	Accepted	F = 0.578, p = 0.630
14	There is no significant difference between educational background and challenges faced by the incubatee.	ANOVA	Rejected	F = 3.126, p = 0.026
15	There is no significant difference between experience and challenges faced by the incubatee.	ANOVA	Accepted	F = 1.508, p = 0.212
16	There is no significant difference between the year of establishment and challenges faced by the incubatee.	ANOVA	Accepted	F = 1.980, p = 0.096
17	There is no significant difference between startup capital and challenges faced by the incubatee.	ANOVA	Accepted	F = 1.949, p = 0.121
18	There is no significant difference between form of business and challenges faced by the incubatee.	ANOVA	Rejected	F = 3.773, p = 0.011
19	There is no significant difference between the current status of the business and challenges faced by the incubatee.	ANOVA	Accepted	F = 2.221, p = 0.110
20	There is no significant difference between the nature of product/service and challenges faced by the incubatee.	ANOVA	Accepted	F = 0.125, p = 0.882

5.8 Conclusion

The study entirely emphasises the crucial and very important role that business incubation centres play in encouraging and supporting entrepreneurship, especially in the Kerala region. It also points out a number of ways that they could be improved to make them even more useful and effective overall. These centres have made huge contributions to the entrepreneurial ecosystem by offering a wide range of important services, such as valuable guidance, the right tools and facilities, funds, lots of chances to meet other people in the business world, and important help with research and development. All of these things work together to make a great environment for businesses to grow and succeed. But it's important that the difficulties faced by the incubatees are actively dealt with while adapting to their different and evolving needs. This is a key part of making sure that the innovation centres continue to be successful.

We can summarise the findings as follows:

- The study highlights the role of business incubation centers in fostering entrepreneurship in Kerala. Most startups are technology-based, registered partnerships, and rely on personal investments and grants. However, challenges remain in securing advanced funding, specialized mentorship, and market access. Addressing these gaps through strategic alignment, innovative funding mechanisms, and tailored training programs can enhance incubation effectiveness and strengthen Kerala's entrepreneurial ecosystem.
- The study explores the attitudes of incubatees in Kerala towards various services offered by business incubation centres. Results show that factors such as gender, location, startup type, patents, experience, education, and business maturity influence incubatees' perceptions. Technical startups prefer environment services and R&D assistance, while non-technical startups prefer mentoring and marketing services. Patent holders have higher attitudes towards environment, infrastructure, HR, R&D assistance, and entrepreneur support services. The study suggests improving marketing services and personalized mentorship for urban and non-patentable startups

- The study on incubatee satisfaction with business incubation centers shows that while they provide consistent support, variations in satisfaction levels suggest a need for a customized approach. Female incubatees reported higher satisfaction, while satisfaction levels varied based on location, business type, startup capital, and product type. Tailoring support at different stages can enhance the effectiveness of incubation centers.
- The study reveals that business incubation centers in Kerala significantly promote entrepreneurship, with all services contributing to growth. 52.7% of entrepreneurship promotion is explained by these services, with Entrepreneur Support Services having the highest impact. Financial, infrastructure, mentoring, and human resource support also play key roles. Strengthening underperforming areas and reinforcing high-impact services can optimize the incubation model for long-term entrepreneurial sustainability.
- The study reveals that incubatees face similar challenges in accessing business incubation services, regardless of factors like gender, location, patents, age, experience, startup capital, business maturity, or product type. However, non-technical startups face more difficulties due to resource needs and educational background. The findings emphasize the need for tailored incubation services to better accommodate the specific needs of non-technical startups, entrepreneurs with diverse backgrounds, and various business forms.

Conclusions from the study showed that the nature of specific challenges incubatees encounter is significantly different and substantial, depending on the type of startup and the educational background of the entrepreneurs. For instance, non-technical startups face more challenges and barriers than technical ones, which implies that there is a need for differentiated and tailored support mechanisms for them. In a similar vein, it can be noted that entrepreneurs from a wide variety of educational backgrounds have particular needs and, therefore, require services that are specifically tailored to meet their unique competencies as well as the specific challenges they face. This observation underscores the critical need not only to

design but also to deliver services that are specifically tailored to meet the diverse and varied needs of incubatees so that no particular group is placed at a disproportionate disadvantage in the process.

Besides the above, while the study makes a comprehensive analysis and concludes that there are no significant differences in the problems faced by individuals based on factors such as gender, geographical location, age, existing patents, or the amount of startup capital available to them, it does identify the specific form of business as a notable and significant determinant that impacts the types of problems faced. It is also important to note that different types of business structures, which may include sole proprietorships, partnerships, and corporations, have inherent operational characteristics and resource requirements, thus requiring incubation centers to adopt a more customized and tailored approach to address these different needs. By strategically aligning support services to correspond to the various requirements and needs of the different forms of business as well as the stages of growth experienced by entrepreneurs, centers can enhance their ability to address unique and diverse challenges that are faced by each type of entrepreneur.

The results further emphasize the need for incubation centers to enhance sector-specific resources, especially for non-technical and rural startups, by introducing advanced funding mechanisms, improving market access strategies, and offering personalized mentorship. Entrepreneur support services, which include legal, financial, and strategic assistance, appear to be the most impactful area of service. Expansion and prioritization in these services will further empower the startup to navigate complex regulatory frameworks, manage risks, and make informed decisions critical to success.

In conclusion, the support execution of business incubation centres in Kerala must be innovative and dynamic. An approach of this nature must actively address the existing gaps that impede support for the diverse entrepreneurial requirements of the region, while also guaranteeing that consistency and inclusivity remain essential components of their operations. These centres can collaborate to create adaptive strategies by customising the services they provide to address the distinctive

obstacles encountered by entrepreneurs and businesses, as well as by cultivating a strong relationship with a variety of stakeholders. Ultimately, these initiatives will substantially improve the overall effectiveness and impact of these critical centres. These focused endeavours will not only significantly fortify and improve the entrepreneurial ecosystem in Kerala, but they will also establish it as a sustainable and innovative development model. This will significantly contribute to the establishment of a global model for replication. Similar initiatives and projects should be implemented by other regions and localities in order to replicate these best practices on their own territories. The intention of all the recommendations that have been thoughtfully formulated in this document is to establish a dynamic, thriving ecosystem that ensures equitable access to essential resources. This will eliminate any potential obstacles that entrepreneurs may encounter in accessing the resources necessary to achieve their full entrepreneurial potential.

CHAPTER 6

RECOMMENDATIONS AND SCOPE FOR FURTHER RESEARCH

6.1 Introduction

This chapter gives suggestions that are useful and offer ideas for further research in understanding the roles and effectiveness of business incubation centers. The suggestions try to solve the challenges found, enhance service delivery, and increase the overall impact of incubation centers on entrepreneurship. The proposed measures can help in creating an environment that is more active and supportive to entrepreneurs by focusing on customized methods, inclusivity, and specific strategies for different sectors. Further, the suggestions for further study point out areas that need more exploration, like long-term results, challenges in different sectors, and the use of digital technologies, giving a plan for improving research in this area.

6.2. Recommendations Based on the Findings

The recommendations based on the findings can be grouped in to four heads as follows:

1. Customised Assistance for Various Startups

1. Non-technical businesses face greater challenges than their technological competitors.

Specialised programs that cater to the unique needs of non-technical enterprises, such as market access, financing choices, and customised mentoring, must be offered by incubation facilities.

2. Expand financing to support start-up companies in non-technological sectors, such as the arts, medicine, and agriculture. This includes industry-specific training, networking, and infrastructure.

3. The educational backgrounds of different entrepreneurs vary. The training and assistance provided by incubation centres should be adjusted to the varying educational backgrounds of the incubatees.
4. The requirements of various business entity types, such as corporations, partnerships, and sole proprietorships, will vary. Resources that are specifically tailored to one type's needs should be accessible.
5. Create mentorship programs that offer incubatees specialised support that is in line with the various phases of business development and the specific sector.

2. Enhancing Infrastructure and Services for Incubation

6. Since legal, financial, and strategic consulting services for entrepreneurs have a significant influence, incubation centres ought to concentrate on and broaden these offerings to help businesses deal with the difficulties of operations, finances, and regulations.
7. It has been determined that marketing needs to be improved. By giving incubatees access to branding seminars, market research, and the contacts of marketing professionals, centres can enhance their marketing assistance.
8. To assist businesses in both urban and rural areas, keep building infrastructural facilities including co-working spaces, labs, and technological access.
9. Scalable digital infrastructure for virtual incubation; all companies should have easy access to cloud computing, data analytics, and AI-based technologies.
10. Encourage non-technical startups to innovate by giving them access to resources for technology transfer, innovation labs, and research and development facilities.

3. Increasing Opportunities for Funding and Networking

11. To guarantee that businesses have access to available financial resources, create and broaden funding channels like grants, angel investments, and venture capital networks.
12. Establish a strong support system for startups by connecting them with important industry players, such as investors, governmental organisations, and other business owners.
13. Using technology and online platforms, incubation centres for remote entrepreneurs should improve access to resources like capital, infrastructure, and mentorship.
14. Increase awareness of the services offered by incubation centres through community engagement, partnerships with educational institutions, and outreach programs.

4. Ensuring Administrative Effectiveness and Inclusiveness

15. Make sure the services are provided in an inclusive manner, ensuring that no one is denied access to opportunities or resources because of their gender, location, age, or level of experience.
16. Create consistently dependable systems that offer feedback for gathering information from incubatees so that services can be improved in real time.
17. Simplify administrative procedures to reduce startups' administrative burden and free up more time for their primary business operations.
18. To improve the calibre of help provided, train the employees on the most recent industry standards, specific sector requirements, and focused mentoring.

19. Create a replicable, scalable incubation framework that takes into account the particular requirements and difficulties of diverse entrepreneurial ecosystems.
20. To help businesses overcome early challenges, put in place specialised initiatives for those in the pre-incubation and early development stages.

The proposed recommendations aim to address the gaps identified in the findings and enhance the overall effectiveness of business incubation centers in promoting entrepreneurship while mitigating the challenges faced by incubatees.

6.3 Scope for further studies

1. Sectoral and Comparative Research
 - Extend studies outside of Kerala to examine incubation models in other nations and areas.
 - Examine incubation services tailored to particular industries, such as biotechnology, renewable energy, and the creative industries.
2. Effects of Incubation Over Time
 - To evaluate the long-term impacts of incubation services on startup survival, scalability, and economic contribution, conduct longitudinal research.
 - Analyse companies' prospects for development and sustainability following their completion of incubation programs.
3. Digital Incubation and Technology
 - Examine how well AI and blockchain technology, as well as virtual incubation platforms, benefit startups.
 - Examine hybrid incubation models that use both digital and physical assistance.

4. Entrepreneurial Conduct and Guidance

- Examine the behavioural and psychological traits of entrepreneurs, including decision-making, resilience, and adaptability, in connection to incubation services.

5. Impact on Policy and Regulation

- Analyse the effects of laws and rules on the operations and difficulties faced by business incubation centres.

6. Financial Sustainability and Funding

- Analyse how well incubatees are supported by various funding models, including as grants, venture capital, and crowdsourcing.

7. Resilience in the Economy and Best Practices

- Determine whether scalable best practices from effective international incubation models can be applied locally.
- To determine the return on investment for governments, investors, and entrepreneurs via incubation programs, do cost-benefit analysis.

By concentrating on these aspects, future research will be able to offer a more in-depth comprehension of the ever-changing characteristics of business incubation centres and the role that these centres play in fostering an optimal environment for entrepreneurial endeavours.

6.4 Implication of the study

1. The findings can help policymakers create business incubation centre frameworks that are supportive and consider the unique needs of entrepreneurs in various industries and geographical areas. Policies could concentrate on infrastructure development specifically for entrepreneurs, mentorship programs, and funding methods.

2. These results can help incubation centres modify their offerings by putting plans in place to address the numerous challenges incubatees have, particularly when dealing with non-technical startups and individuals with varying educational backgrounds.
3. Resources specific to company forms and sectors are recommended by the study. Incubation centres are better able to distribute resources to suit the unique demands of firms at different phases of growth, urban and rural incubatees, and technical and non-technical entrepreneurs.
4. The study emphasises the significance of maintaining inclusivity and equity within incubation services by identifying areas where difficulties are comparable across various demographics, such as gender and geographic location. This strategy might help create a more diverse ecosystem for entrepreneurs.
5. In order to create a cohesive entrepreneurial environment, collaborations between incubation centres, industry stakeholders, academia, and government are crucial. Working together can improve funding access, networking opportunities, and service options.
- 6.. Based on the limitations and requirements of incubatees, incubators can create specialised programs including workshops on finance access, enhanced marketing assistance, and mentoring for non-technical entrepreneurs
7. The study provides a foundation for methodical feedback and evaluation procedures that allow incubation centres to modify their products in light of the entrepreneurs' and the market's changing needs.

In order to diversify the entrepreneurial ecosystem and address societal issues, the results show that non-traditional businesses like social enterprises and cooperatives can be better supported. These results have the potential to serve as a benchmark for other countries and areas, allowing incubators around the world to assess and improve their own tactics by learning from the experiences of Kerala's

entrepreneurial ecosystem. The research has the potential to greatly enhance incubation approaches by creating an entrepreneurial ecosystem that is dynamic, inclusive, and sustainable, as shown by the implications.

6.5 Conclusion

This chapter emphasises critical recommendations for improving the efficiency of business incubation centres and delineates potential areas for future research. The recommendations underscore the necessity of customised assistance for diverse businesses, enhanced incubation services, increased funding opportunities, and a more pronounced emphasis on administrative efficiency and inclusivity. By addressing these areas, incubation centres can provide more comprehensive support to entrepreneurs, thereby ensuring their long-term success and sustainability.

Furthermore, the potential for additional research presents essential opportunities to broaden the field of business incubation. Valuable insights into the enhancement of incubation practices are provided by comparative studies across regions, sector-specific incubation models, and the impact of emergent technologies such as AI and blockchain. Strategies for the development of more effective incubation ecosystems will be further informed by longitudinal research on startup success, government policies, funding models, and economic resilience..

By implementing these recommendations and conducting additional research, business incubation centres can transform into more dynamic and impactful institutions, thereby promoting entrepreneurship, driving innovation, and contributing to sustainable economic growth.

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APPENDIX
QUESTIONNAIRE

I am SHAJITHRA O P, Research Scholar from the Department of Commerce, Mar Thoma College, Chungathara in Calicut University under the guidance of Dr. RAJEEV THOMAS. I am conducting a Survey on the topic “EFFECTIVENESS OF BUSINESS INCUBATION CENTRES IN PROMOTING ENTREPRENEURSHIP IN KERALA” I kindly request you to fill your valuable responses to carry out my research effectively. The information given by you will be kept confidential and used only for academic purposes.

**EFFECTIVENESS OF BUSINESS INCUBATION CENTRES IN
PROMOTING ENTREPRENEURSHIP IN KRALA**

Questionnaire to Incubatee

1	Gender of the incubatee		Male		Female		Trans	
2	Age of the incubatee							
3	Education Background of the incubatee	1.	Up to Plus Two		2.	Degree		
		3.	PG		4.	Professional		
4	Experience of the incubatee before joining the incubation centre							
5	Year of establishment of start-up in incubator							
6	Place		Rural		Urban			
7	Start-up Capital							
8	Nature of Start-up	Technical						
		Non-Technical						
9	Form of Business	1.	Private Limited Company		2.	Registered Partnership Firm		
		3.	Limited Liability Partnership		4.	One Person Company (OPC)		
10	Does your business have a patent?	Yes		No				
11	Current Status of the business in incubation Centre	1. Pre-incubation Stage			3. Accelerator Stage			
		2. Incubation Stage						

12	Nature of Product / Service	Yes	No
12.1	B 2 B		
12.2	B 2 G		
12.3	B 2 C		

13	Sources of Finance	Yes	No
13.1	Personal Investment		
13.2	Friends and Family		
13.3	Angel Investment		
13.4	Venture Capital		
13.5	Business Loan		
13.6	Incubators		
13.7	Grants and Subsidies		
13.8	Crowd Funding		

14. Business Sector

1	Software / IT		4	Hardware	
2	Healthcare		5	Agriculture	
3	Bio Technology		6	Services	

15. Level of technology involved

1	Very low	
2	Low	
3	Moderate	
4	High	
5	Very High	

16. Which category of incubation program you applied and selected?

OP	General – eligible to all	
2	Student Oriented	
3	Women Oriented	
4	Aluminise	

17. Rank the following sources of information in order in which you become aware of? (Assign rank 1 for the highest preference and rank 5 for the lowest preference)

	Sources of information	Rank
1	Official Web Site	
2	News	
3	Campaign / promotions by Incubation Centre	
4	Government Notifications	
5	Referral by friends / colleagues / institutes	

18. How do you rate the satisfaction level of incubates towards the services provided by incubation centre?

(HS=Highly Satisfied, S=Satisfied, N=Neutral, D = Dissatisfied, HD=Highly Dissatisfied)

	Services	HS	S	N	D	HD
18.1	Enabling environment services					
18.2	Mentoring Services					
18.3	Infrastructure Services					
18.4	Financial Services					
18.5	Marketing Services					
18.6	Human Resource Services					
18.7	Business Support services					
18.8	Networking Services					
18.9	Research and Development Services					

19 How do you rate the general incubation intervention activities of the business incubation centre to the development of entrepreneurship?

(SA=Strongly Agree, A=Agree, N=Neutral, SD=Strongly Disagree)

19.1 Enabling environment services

Enabling environment services		SA	A	N	D	SD
1	Incubation centre has created an environment where the incubatee can learn from one another.					
2	Incubation centre helped the incubatee by reducing the time required to develop marketable products/services.					
3	Incubation centre helped the incubatee by reducing early stage operational costs to start the business with lower initial investment.					
4	Incubation centre helped the incubatee to accelerate the development of new firms with minimum chances of failures					
5	Incubation centre helped the tenant companies to establish credibility.					
6	Incubation Centre has a formal procedure for periodic feedback and handling grievances of incubatee.					

19.2 Mentoring Services

Mentoring Services		SA	A	N	D	SD
1	Incubation centre assigned a qualified mentor to the incubate					
2	Incubation centre provided the incubatee to avail the expertise from multiple mentors.					
3	Incubation centre provided product / technology mentoring to the incubatee					
4	Incubation centre provided mentoring for customer development and relationships to the incubate					
5	Incubation centre provided mentoring					

	service for developing revenue model, business model and pricing model to the incubatee					
6	Incubation centre provided mentoring service for team management to the incubatee					

19.3 Infrastructure facilities

Infrastructure facilities		SA	A	N	D	SD
1	Physical infrastructure					
	1.1	Incubation centre provided the incubatee with work space at below market rate rent.				
	1.2	Incubation centre provided the incubatee with sufficient office space in incubation centre.				
	1.3	Incubation centre provided the incubatee with library facilities.				
2	Virtual Infrastructure					
	2.1	Incubation centre provided the incubatee with cloud services for free credits or with offer				
	2.2	Incubation centre provided the incubatee with software for free credits or with offer				
	2.3	Incubation centre provided the incubatee with online tools for free credits or with offer				
3	Lab and workshop facilities					
	3.1	Incubation centre provided the incubatee with sufficient laboratory facility for product / prototype development and testing				
	3.2	Incubation centre provided the incubatee with general electronics workshop				
	3.3	Incubation centre provided the incubatee with lab facilities for Artificial Intelligence / Virtual Reality / Augmented Reality.				
	3.4	Incubation centre provided the incubatee with lab facilities for Robotics and Aerial vehicles and Brain Computer Interfacing Lab.				

19.4 Financial Services

Financial Services and assistance		SA	A	N	D	SD
1	Incubation centre helps the incubatee to prepare financial plan and projections					
2	Incubation centre helps the incubatee in Business Valuation and Investment Pattern					
3	Incubation centre provide guidance to the incubatee on available sources of funds.					
4	Incubation centre helps the incubatee to avail seed capital, bridge finance, angel funds and venture capital					
5	Incubation centre helps the incubatee to avail grants, subsidy, and collateral free loans and reduced interest rate loans.					
6	Incubation centre helps the incubatee in fast resolution of disputes, protection against delayed payments and moratorium.					

19.5 Marketing Services and Networking Services

Marketing Services and Networking Services		SA	A	N	D	SD
1	Incubation centre helps the incubatee to capturing market insights through market research and identifying market segments and targets.					
2	Incubation centre helps the incubatee for creating brand equity and brand positioning					
3	Incubation centre helps the incubatee for shaping market offering , product values and product pricing					
4	Incubation centre helps the incubatee for designing marketing communication mix –advertisements, sales promotion, direct marketing, personal selling and public relation and publicity.					
5	Incubation centre provide the incubatee with facilities for product launch coverage, events and experiences, digital marketing with Augmented Reality / Virtual Reality experiencing platform.					
6	Incubation centre provide the incubatee with satisfactory services for getting international business opportunities through NASSCOM Innotrek, International Launch Pads, and Foreign travel for business opportunities.					

19.6 Human Resource Assistance

Human Resource Services		SA	A	N	D	SD
1	Incubation centre helps the incubatee for designing job analysis, job description and job specification for manpower planning					
2	Incubation centre helps the incubatee in recruiting qualified and competent employees and managerial personals					
3	Incubation centre helps the incubatee in conducting training and development programs for managers and employees					
4	Incubation centre helps the incubatee in conducting periodic performance appraisal of the managers and employees					
5	Incubation centre helps the incubatee in managing payroll, succession planning, career development, grievance handling and HR audit.					

19.7 Research and Development assistance

Research and Development assistance		SA	A	N	D	SD
1	Incubation centre provide the incubatee with technical expertise for designing/developing the product.					
2	Incubation centre provide the incubatee with technical expertise for modification and updation according to customer needs.					
3	Incubation centre provide the incubatee with lab facilities for designing/developing the product					
4	Incubation centre provide the incubatee with lab facilities for modification and updation according to customer needs.					
5	Incubation centre provide the incubatee with lab facilities for testing the product					

19.8 Entrepreneur Support Services

Entrepreneur Support Services		SA	A	N	D	SD
1	Incubation centre provide the incubatee with Secretarial Services					
2	Incubation centre helps the incubatee in preparing annual accounts and audited statements					
3	Incubation centre provide the incubatee with taxation services includes registration filing and updation					
5	Incubation centre provide the incubatee with EXIM, TAN, PAN and SEZ Services.					
6	Incubation centre provide the incubatee with legal, Notary Services & Client Agreements					
7	Incubation centre provide the incubatee with IP, Patent , Trademark & Copy rights					

20. How do you rate the following effects of the general incubation intervention activities of the incubator for entrepreneurship development?

(SA=Strongly Agree, A=Agree, N=Neutral, SD=Strongly Disagree)

		SA	A	N	DA	SDA
1	Incubation centre promote entrepreneurship and enable ecosystem to support start-up units.					
2	Incubation centre is the prominent place to start a new business					
3	Incubation centre can be suggested to other entrepreneurs as an appropriate place to start a new business.					
4	Incubation centre helps the incubatee to develop a flexible and convenient work plan.					
5	Incubation centre helps the incubatee in managing up and down situations of the business.					
6	Business incubators can be adopt as a policy instrument for entrepreneurship development.					
7	Business Incubators support the creation and growth of business through organizational and technical assistance, and contributes to the					

	reduction of entrepreneurial failure					
8	By helping new businesses prosper, incubators assist in creating long-lasting jobs for their host communities					
9	Business Incubation centres enhances the chances of success, raises credibility, helps improve skills, creates synergy among client-firms, and facilitates access to mentors, information and seed capital.					
10	The incubator helps overcome market failures, promotes regional development, generates jobs, incomes and taxes, becomes a demonstration of the political commitment to small businesses and helps the incubatee to meet their social responsibilities					

21. What are the difficulties/ problems/ shortages faced by the incubatee in getting services from the Incubation Centers?

		SA	A	N	DA	SDA
1	Government not taking sufficient amount of interest and efforts to boost start-ups in incubation centre.					
2	Incubation centres are unable to provide satisfactory and flexible infrastructure facilities as per the requirements of the incubatee.					
3	Marketing services provided by the incubation centre is not a validated market opportunity sufficient to exposure to real market					
4	Networking opportunities provided by the incubation centre is limited to the institute alone.					
5	Incubation programs in the incubation centres are not supporting Research and Development activities due to time and technical constraints.					
6	Incubatee is not provided with support from host institute in gaining business knowledge, recruitment and R&D.					
7	Financial Services provide by the incubators are not appropriate and relevant to helping entrepreneurs connect with angel investors and venture capitalists					

8	Incubators are not able to provide proper entrepreneurial education to the incubate					
9	Incubatee is not provided with adequate Business Support services					
10	Accelerators and incubation programs tend to be expensive or require entrepreneurs to give up equity					
11	The current structure of incubators excludes a large percentage of the entrepreneurial population because of their limited locations, equity requirements and low acceptance rate.					