Business Incubation and its Role in Supporting Small and Medium Sized Enterprises in the Global Economy

Anandakumar Haldorai
Center for Research and Development, Sri Eshwar College of Engineering, Coimbatore, Tamil Nadu, India.
anandakumar.h@sece.ac.in

Correspondence should be addressed to Anandakumar Haldorai : anandakumar.h@sece.ac.in

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Abstract –The term "business incubation" refers to the process through which established businesses or organizations help emerging businesses rise. Incubators for new businesses provide more than just a place to work. They also provide guidance, education, funding, and help with designing and promoting products. The fundamental goal of this guidance in education is to analyze the importance of business incubation in assisting SMEs in a worldwide economic setting. The provision of resources and services to incubatees is one kind of intervention that is explored in this study, along with others. This research also takes a close look at the many aspects that aid and hinder the incubation process. The processes of commercialization and expansion are also important, as are incentives for innovation and the creation of positive societal effects. Entrepreneurial growth, innovation, startup effectiveness, sustainability, spinoff company formation, and the launch of social enterprises are all possible outcomes of the incubation process. The study emphasizes the necessity of understanding the consequences of incubation services on incubatees and the larger ecosystem, and highlights the need for additional research on social, virtual, and corporate incubators.

Keywords – Entrepreneurial Development, Small and Medium Enterprise Incubation, New Business Creation, Social Incubators, Online Incubators, Physical Incubators.

I. INTRODUCTION

It is becoming more apparent that small and medium-sized businesses (SMEs) are vital to local economic development and the creation of new jobs in the context of a competitive global market. Numerous governmental initiatives include policy tools that specifically target SMEs. Current research is investigating novel structures and tactics that might facilitate the expansion of small firms, therefore ensuring a prosperous outlook in the global market. Business incubation has emerged as a prominent strategy in some highly competitive economies, contributing significantly to the development of entrepreneurial talents and the establishment of novel enterprises. The incubation process described in **Table 1** incorporates services that facilitate immediate identification and repair of business difficulties, resulting in a significant reduction in the typical failure rate seen during the early stages. Business incubator programs, sometimes referred to as "new entrepreneur creation projects," play a crucial role in fostering the development and growth of emerging entrepreneurs by providing them with the necessary assistance and resources to successfully establish and maintain their businesses in the long run.

The target demographic of the business incubator comprises small-scale entrepreneurs seeking growth opportunities, recent graduates aspiring to nurture their talents and ideas, and those interested in the development and commercialization of their innovative concepts. The need for business incubation has emerged as a result of a benchmarking study supported by USAID, which focused on evaluating the support framework for SMEs in Pakistan. The objective of this study was to identify gaps in support operations for SMEs that need attention in order to enhance their contribution to the economy of Pakistan. The identified deficiencies include the need for enhanced strategies in SME financing that foster innovation, improved collaboration between the academic sector and industry, and expedited commercialization of breakthrough ideas, including streamlining the company incubation process.

According to the official documentation of the European Commission, enterprises may be classified as microenterprises if their annual revenue amounts to 2 million and their staff consists of less than 10 individuals. Small firms are defined as those known to have a turnover of equal or less 10 million employees and a workforce with 50 or fewer employees. On the other

hand, medium-sized enterprises are characterized by a turnover that is equal to or less than 50 million and 250-member workforce fewer employees.

Table 1. Phases of the incubation process

Phases	Explanation
Pre-Incubation	Phase one of a technological incubation program is called "Pre-Incubation." Within the planning phase, entrepreneurs are providing with business services and free housing to aid them in analyzing the market, developing a product or service, and writing a comprehensive business plan that details everything from the opportunity being pursued to the proposed leadership team, marketing strategy, and operational and financial plans.
Incubation	In the next phase, known as "incubation," the company concept is cultivated and refined via a series of problem-solving exercises. In Simon's view, a problem is everything that now exists in a condition of disarray. Solving a problem means moving from that uncomfortable place to a place where the entrepreneur feels more at ease. The incubation program includes daily monitoring and evaluation, as well as reporting on any issues found so that they may be addressed by the qualified employees.
Evaluation	Third, when enterprises have graduated from the incubation center, they are evaluated and connected with suppliers of spaces and resources to help them succeed.

The significance of Micro, Small, and Medium-sized Enterprises (MSME) cannot be overstated. It has a significant role in the majority of organizations, accounting for 99% of their overall contribution, and is responsible for the creation of over 75 million employments. It functions as a platform via which civilizations transform technological knowledge into tangible goods and services. Hilson, Hilson, and Maconachie [1] conceptualized entrepreneurship as a managerial technique, defining it as a systematic undertaking whereby people, either independently or within organizational contexts, actively seek possibilities. According to Baumöl [2], it has been suggested that instructing individuals in the art of working for others provides sustenance for a limited period, but imparting entrepreneurial skills not only nourishes the individual but also benefits others throughout their lifetime. Wagner and Gelübcke [3] assert that the likelihood of enterprises surviving, particularly after formation, is quite low.

This analysis starts with a deep dive into the available literature on business incubation so that we may better understand its dynamics. This research follows the same Context-Intervention-Mechanism-Outcome (CIMO) framework that Crișan, Covaliu, and Chiș [4] used in their prior analysis of business accelerators. This approach is used to learn more about the many models of the incubation process, and it will help direct future studies in this area. This research is motivated primarily by a desire to theoretically ground the practice of company incubation using the CIMO approach. The study's secondary objective is to develop a new research agenda and provide topics for future studies on incubation. The remainder of the article has been organized as follows: Section II presents a review of scholarly works related to the concept of business incubation, and its relevance within the SMEs. Section III provides a methodology employed in composing this article. Section IV presents a discussion of the results, which focus on the context, intervention, mechanisms, and outcomes. Section V draws a conclusion to the research.

II. LITERATURE REVIEW

According to Hackett and Dilt [5], business incubation is the process through which a person or organization provides assistance for the formation and development of a start-up venture. Individuals who provide help to start-up or newly established firms are sometimes referred to as business incubators. Business incubators carefully assess the growth potential and evaluate the possibility prior to providing financial assistance or directing cash towards any start-up venture. The process of selecting a start-up requires extensive investigation prior to making any decisions about the provision of assistance or funding. In summary, it can be said that the objective of incubation is to enhance the probability of success for a firm.

According to Ayatse, Kwahar, and Iyortsuun [6], the notion of business incubation integrates the establishment of novel small companies via the provision and support of small and medium enterprises (SMEs) in various services. These services include offering space in fully constructed industrial buildings on flexible and cost-effective conditions. The supply of a wide array of essential services, like business counseling and training, shared secretarial support, initial funding, and aid in product development and marketing. The incubator implements stringent admission and exit regulations with the aim of focusing its resources on supporting creative, rapidly expanding company startups that are expected to make a substantial contribution to the local economy. The incubation guidelines often impose a restriction on occupancy, typically ranging from three to five years, in order to facilitate a proper rotation of tenants.

According to Ayyash, McAdam, and O'Gorman [7], there are several definitions and methodologies pertaining to the incubation of company and technology. The concept of "incubation" is characterized by a higher level of diligence and planning compared to clustering or "co-location." As a result, it requires comprehensive consideration of the challenges faced by potential tenants, going beyond the mere provision of infrastructure and office services. As stated by the National Business Incubators Association (NBIA), business incubation process facilitates the initiation and expansion of enterprises by equipping entrepreneurs with the necessary skills, networks, and resources to ensure the success of their initiatives [8].

Incubation programs have the potential to enhance economic diversification, facilitate the commercialization of inventions, provide employment opportunities, and foster wealth creation.

According to Zahra, Gedajlovic, Neubaum, and Shulman [9], entrepreneurs often encounter challenges, errors, and limitations in resources as they navigate various paths for their just founded company. The acquisition of resources and competencies necessary for the establishment of a new organization is often significant and may rapidly surpass the means available to the entrepreneurs engaged in the endeavor. Entrepreneurs often need assistance in acquiring financial investment, engaging with suppliers and consumers, and refining their new position and business model. Business incubators are established with the purpose of assisting nascent enterprises in acquiring essential resources and cultivating a resilient organizational structure, hence enhancing their likelihood of survival, achieving economic viability, and fostering growth. The development of incubator services has been shown in previous studies.

Galbraith, McAdam, and Cross [10] state that the first incubator was founded in USA, in 1959. Incubators have evolved through time, with the initial generation focusing on providing concrete resources like low-cost office space and administrative support. Second-generation incubators, which emerged in the 1980s, helped technology-intensive businesses expand by giving them more than just a place to work and sleep. Therefore, it was decided to offer business support services like management and marketing coaching to aid in the development and expansion of new businesses. Third-generation incubators were introduced in 1990s with major concentration on allowing access to a broad variety of stakeholders through networking, including potential suppliers, customers, investors and partners. According to the authors, having access to such networks opens doors to new opportunities, knowledge, and social standing. The three main types of services that incubators might provide are, thus, (1) physical infrastructure, (2) business aid, and (3) networks. Scholars have argued that it is important to recognize the many ways in which incubators serve their tenant businesses. It has also been hypothesized that tenant companies may utilize services in different ways.

According to Bøllingtoft and Ulhøi [11], it is important to conduct an investigation into the ways in which certain services provided by incubators contribute to the growth of tenant enterprises, enabling them to transition from nascent startups to thriving organizations with a higher probability of long-term success. Consistent with the existing body of research on incubators, our argument posits that incubators have the potential to assist nascent enterprises in their endeavors to acquire external resources and in their pursuit of developing the necessary capacities to overcome the challenges associated with being a new entrant in the market. Baron and Warnaby [12] define capabilities as the capacity of a corporation to effectively gather, distribute, and use resources o obtain competitive advantage. Consistent with the findings of Kosieradzka and Rostek [13], our focus is on the enhancement of organizational processes to enable tenant enterprises to effectively use their resources and achieve performance outcomes in an environment characterized by uncertainty. The establishment of efficient organizational capacities is of utmost importance for the sustained success of emerging enterprises. Therefore, the degree to which incubators can facilitate the enhancement of new enterprises' capabilities plays a crucial role in shaping the ultimate results of the incubation process. Until now, there is a limited amount of research available about the significance of incubators on the development of resources and capabilities in tenant enterprises.

According to Chan and Lau [14], technology incubators often prioritize the cultivation of technology-intensive firms and initiatives rooted in knowledge. Hausberg and Korreck [15] discussed technologies such as Technopolis, Business Incubators, Technology Parks, Science Parks, and Research Parks; these are all names for different types of the technology incubation system (TIs). While each of these components performs independently, they are intricately linked with one another and other players in the innovation system. There is a great deal of overlap between the concepts of Technology business incubators, “Science Parks,” “Technology Parks,” “Research Parks,” as well as “Technology Incubators`` in different regions. The level of cooperation between the R&D community, venture capital groups, and industry frequently determines the precise nomenclature used.

Table 2. Organizational Forms of TIs

Not-for-profit and public	**Funded by the public and charitable sectors with the aim of stimulating the economy**
Private	Run by startup and seed investment organizations, or by businesses and property development partnerships. Incubators often expect some kind of financial return on their investment, whether it is equity in the company, development fees, royalties, etc.
Academic-related	These are similar to the other two categories and aim to help teachers grow and help businesses capitalize on faculty research
Private/public	These projects in which a private developer collaborates with a public or nonprofit organization. These have the benefit of being able to attract public funds to supplement private sector knowledge and investment.

The organizational structure of technology incubators (TIs) exhibits variability and may be broadly classified into four categories: hybrid incubators, not-for-profit or public incubators, academic-related and private incubators that include elements of both public and private sectors. This categorization is often found in existing literature (refer to **Table 2**). Additionally, TIs may exhibit a vast array of aims and purposes, leading to the emergence of many types of incubators that specialize in accessing a wide variety of resources, as seen in **Fig 1**. The review starts with a look at the literature's

development across time by tracing its genesis in primary sources. Authors' proposed CIMO (Context-Intervention-Mechanism-Outcome) framework is used throughout the study. Recently, the Authors have applied this method to the study of business accelerators in an attempt to better understand the many incubation models now in use and to guide future research in this field. In light of this, the fundamental objective of this research is to provide theoretical frameworks for incubation of business consistent with the many steps of the CIMO approach.

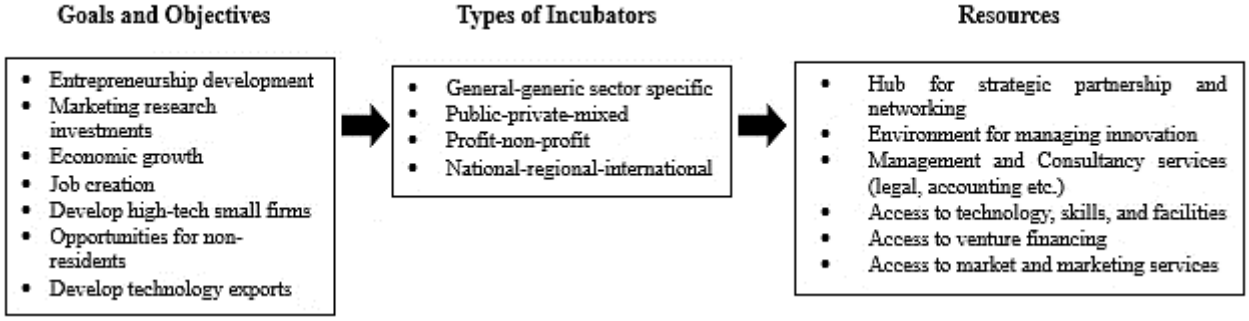

Fig 1. Goals & objectives, types, and resources of TI

III. METHODOLOGY

A complete search key comprising synonyms from academic literature was used to perform systematic research on the topic of company incubation and its procedure. The search algorithm was adjusted to enhance the retrieval of pertinent outcomes, minimizing the occurrence of false positives and prioritizing the identification of relevant phrases. To enhance the reliability of the search results, several limitations were applied to the search keywords, including study field, document type, and language. A total of 493 publications were obtained from the final search query, using a meticulous set of criteria to ascertain that the chosen research specifically addressed the phenomenon of incubation. The abstracts of 283 papers meeting the eligibility criteria were examined by the researchers.

These articles were published between 1996 and 2023 and originated from 42 different nations. The inclusion criteria were made more rigorous, with a specific emphasis on the influence of context, the nature and scope of the intervention, the method by which it was produced or executed, and the consequences of the incubation process. As a result, a total of 73 journal articles were integrated in the final sample, and these articles were subjected to a thorough examination using a coding methodology. The primary purpose of this study was to obtain a critical understanding of company incubation and its associated processes.

IV. RESULTS AND DISCUSSION

The utilization of the CIMO approach within a systematic review of literature proves advantageous as it facilitates the organization and enhanced examination of data, thereby fostering a deeper comprehension of the contextual factors (C), the formulation of interventions (I), the anticipation or strategic planning of outcomes (O), and the concentration on the mechanisms involved in the implementation and advancement of the incubation methodology (M). The mechanism serves as the primary catalyst for the whole incubation process, which is used within a specific framework to attain desired results by deliberate interventions orchestrated by external stakeholders and incubator management, such as government entities, private investors, enterprises, and universities. Therefore, the present review provides valuable insights into the conceptualization of the incubation process, elucidates the underlying processes that govern and modulate it, and highlights potential avenues for future research in this domain. In order to do the study, our attention is directed on a sample of 32 articles. The majority of these studies are based on empirical evidence, although a handful additionally use theoretical frameworks to provide a clear delineation of the input and output factors.

Context

Theodorakopoulos, Kakabadse, and McGowan [16] have emphasized the significance of context in the formulation of strategies and the design of incubation processes for incubators. This entails tailoring these approaches to the unique characteristics and conditions of the operating environment. The term “context” encompasses both external and internal factors that have an impact on the process of behavioral change. This research examines the contextual factors that include both the national and regional context, as well as the incubator setting in relation to its specific kind. The inclusion of the context component inside the CIMO framework allows for a more comprehensive comprehension of the 1st steam of literature pertaining to incubator classifications and entrepreneurial endeavors. The sample in our study comprises 38 nations. The majority of these countries are from Europe, with 7 studies conducted in this region. Additionally, 9 investigations were conducted in the United States, contributing to the research on the incubator setting. The examination of the contextual factors surrounding the incubation process reveals that a majority of research papers pertaining to this process are conducted in developed nations, using data mostly sourced from incubators inside these developed nations. The representation of the incubation process in developing and rising nations, particularly in South-East Asia, has been notably inadequate.

During the process of contextual analysis, we have discovered a total of eight distinct kinds of incubators, which have been extensively discussed in the existing literature works. Business incubators are a specific kind of incubators that provide support and guidance to entrepreneurs in the initial phases of their business ventures and facilitate startup activities, with a primary emphasis on individual business development rather than the broader organizational framework. These entities are often examined inside academic institutions, where they play a crucial role in facilitating the transfer of information, launching ventures, managing intellectual property, and enabling commercialization efforts. Business accelerators are characterized by their cyclical nature, since they consist of shorter-duration programs that provide extended assistance over a longer period of time.

Technology incubators primarily concentrate on the pivotal role that technology plays in the initiation and establishment of a company venture. Science parks are designed and constructed with the specific intention of creating concentrated areas that include office spaces, laboratories, workspaces, and meeting facilities, all of which are dedicated to fostering research and development activities in the fields of science and technology. Corporate incubators are founded by companies with the aim of providing services similar to those offered by conventional incubators. However, their primary emphasis lies in fostering and promoting the creation of new firms by workers inside the organizational framework. Social incubators provide assistance to entrepreneurs that have a beneficial social effect, prioritizing services such as training, and measurement in corporate social responsibility and business ethics. Virtual incubators have emerged as a novel kind of incubator, gaining prominence with the growth of platform economy and platform enterprises.

According to Manetti [17], there is lacks sufficient attention to social variables that include relationships and intangible elements. Moreover, it has been said that ESO research primarily concentrates on the supply of tangible resources and access to networks. The failure to fully comprehend the instances of business incubation considered a social process result in a limited knowledge of entrepreneurial support organizations (ESOs) in a broader sense. Recent scholarly research by Van Rijnsoever [18] has provided a valuable contribution by redirecting scholarly attention towards the sometimes disregarded and even concealed organizational actions that form and maintain the surroundings of ESOs. This lens has provided further and perhaps paradoxical elucidations on the comparative achievement or lack thereof of an ESO. Clarysse, Tartari, and Salter [19] study highlights the significant function of border objects in effectively facilitating the exchange of practices inside innovation spaces. This study further illustrates that ESOs cannot be simplified only by considering its individual components, namely the physical environment, networks, and business education. Phan, Siegel, and Wright [20] argue that a comprehensive understanding of higher-level contexts, such as incubation, requires an examination of the interplay between social, spatial, and material factors.

The particular focus of this study is in the domain of company incubation, specifically examining it as a dynamic framework for entrepreneurship. One of the fundamental enigmas pertaining to the dissemination of incubation settings revolves around the conspicuous simplicity with which they have been duplicated throughout various regions globally, notwithstanding the considerable disparities in social, cultural, and economic circumstances. Kirn and O'Hare [21] delineate the constituent components of structure that facilitate the process of replication, including services and strategy, knowledge structure, cooperation, and networking and the objective of the incubator managers. However, Studdard [22] also observe that the effectiveness of incubators is contingent upon a decoupling between formal regulations and the practical implementation thereof.

In a similar vein, Van Erkelens, Thompson, and Chalmers [23] elucidate the strategies used by incubator coaches to surmount "architectural rigidities" and provide benefits to entrepreneurs. These coaches often modify established procedures and embrace the inherent unpredictability and ambiguity associated with the processes of new ventures. Ahmad and Thornberry [24] provide a strategic analysis of the actions taken by incubator leaders to modify their organizational structure in response to a dynamic external environment. Similarly, Meru and Struwig [24] demonstrate the importance of fostering a flexible and responsive context in order to effectively address the changing requirements of incubator users in Kenya. In order for incubators to thrive, it is essential that they provide stakeholders, such as entrepreneurs and incubator managers, a degree of autonomy to modify the generally uniform frameworks of incubation. Notwithstanding the apparent relevance and necessity of structural flexibility, there exists a restricted comprehension of how stakeholders together construct and modify incubation as an adaptable environment over the course of time.

The examination of contextual factors pertaining to different kinds of incubators reveals that the body of literature about university and technological incubators is well-established, but the literature on corporate, virtual, and social incubators remains relatively scarce. Consequently, further study is needed to better explore these understudied incubator types.

Interventions

The component interventions of the CIMO framework pertains to the provision of resources and services by incubators to support their incubatees. This aspect contributes to the advancement of the 3rd stream of literature, which focuses on the exploration of technology, capabilities, and incubator resources. Most of the studies within our sample have found a range of supportive and complementary services offered by various kinds of incubators. These services include selection processes, training, monitoring activities, access to financial resources, infrastructure support, network support, and coaching, as well as legal assistance. Incubator services are designed to assist the incubation process for incubatees by providing them with access to various resources, including networks, physical infrastructure, digital tools, financial support, and social connections.

Entrepreneurs often engage in the dissemination of information and the exchange of network resources across a range of networks, including external links, research networks, social networks, alumni networks, as well as trade and supply chain networks. The use of knowledge-based resources plays a crucial role in ensuring the survival and development of innovative initiatives. Based on the knowledge-based approach, the attainment of competitive advantage by a corporation is heavily reliant on its capacity to gather, amass, integrate, and primarily use market information for the purpose of innovating new goods, services, and processes. Knowledge-based resources are often defined as the tangible input resources of a corporation. The acquisition, integration, and knowledge usage are essential requirements for engaging in entrepreneurial and inventive endeavors. Possessing such information provides organizations with a competitive advantage in their ability to foresee and evaluate the implications of shifts in the business landscape, hence enabling them to implement appropriate strategic responses. There are two prevalent forms of knowledge, namely declarative or explicit knowledge and procedural or tacit knowledge.

Procedural or tacit information may be acquired by firsthand experience, whereas declarative or explicit knowledge can be attained through training programs and formal education. Kani and Motohashi [26] primarily examined the understanding of technology and market as key manifestations of a procedural knowledge and firm's tacit. The acquisition of market knowledge may enhance the capacity of new businesses to identify and capitalize on possibilities by enabling them to gain insights into client challenges, devise strategies to cater to market demands, and therefore, identify viable market prospects. The acquisition of technological expertise is of great significance for entrepreneurs due to its capacity to boost the effectiveness of new businesses in capitalizing on market possibilities and transforming them into marketable goods, processes, or services. Entrepreneurs have several avenues via which they may enhance their skills inside their newly established enterprises. The establishment of connections with a prominent social network has been recognized as a significant strategy for emerging enterprises to cultivate resources based on knowledge. Based on the principles of social network theory, it is posited that social networks play a role that is crucial in facilitating the acquisition of limited and important knowledge pertaining to market dynamics and technology advancements by nascent enterprises.

According to network theory, the success of new businesses may be facilitated by entrepreneurs' capacity to efficiently acquire vital market and technical information via social networks. The concept of social network size pertains to the quantity of individuals or entities present inside a given network. This metric may serve as an indicator of the benefits associated with network participation for emerging initiatives, as well as have an impact on the dissemination of knowledge and information within the network. The existing body of research pertaining to networks has mostly centered on the examination of network structure, network dimensions, and the concepts of strong and weak linkages. Yang and Tang [27] have conducted investigations into the development of social networks. Additionally, they have examined the value generated by social networks in environments characterized by uncertainty. Furthermore, scholars have explored the impact of social networks on many aspects such as individual health, job performance, and the performance of organizations. However, the majority of these studies have been carried out in Western nations, with little research undertaken in countries with transitional economies like China.

China is transitioning towards a kind of network capitalism characterized by the establishment of enduring trust-based connections. Network ties have become an integral part of the social fabric in China, serving as a widespread mechanism for acquiring information in the context of entrepreneurial endeavors. The transition of China from a strategic economy to a market-oriented economy raises a significant concern about the impact of network linkages on the acquisition of expertise by new businesses. From a social capital standpoint, the increasing competitiveness of emerging markets emphasizes the significance of network relationships. These relationships enable companies to sustain their position by fostering favorable connections with exchange partners or by establishing political ties with governments.

The existing body of research on trust has emphasized the significance of establishing networks or other connections for new initiatives, as well as its impact on the nature and frequency of information and knowledge exchanges. Trust may be conceptualized as the inclination of an individual or entity to expose themselves to potential risks or vulnerabilities. This notion has significant significance in the context of acquiring information. Too far, there has been little understanding of the impact of trust levels among network members on the association between a firm`s knowledge-based resources and social network size. Furthermore, there is a dearth of research examining the impact of varying degrees of trust on network interactions.

Incubators are designed to enhance the accessibility of equity money for new ventures, including seed investment, diverse fundraising methods, and non-monetary forms of financial assistance. The provision of physical and digital infrastructure is a frequently used intervention, including physical infrastructure, technical assistance, and research and development facilities. Monitoring incubation activities is an additional intervention that encompasses several components, such as milestone programs, management support for incubation, services for business help, and support for administrative tasks. Training and coaching services play a vital role in enhancing capabilities and skills via many means such as market development, business skills, coaching, business plan workshops, human resource management, commercialization of innovations, entrepreneurial training, digital capabilities, and counseling services. Incubators use a systematic approach to assess and provide assistance to startups, using well-defined selection criteria that include market features, owner traits, product characteristics, and financial prospects.

The quantity and variety of interventions supplied within each form of incubation service, as well as their evaluation during the incubation process, are factors that determine the type of incubator used. It is vital to analyze how the provision

of these services impacts the performance of incubates, the stakeholders like (university or corporate incubators), and the surrounding community. This connects the third body on resources of literature with the 2nd body of literature on the incubator effects. There is a significant knowledge gap pertaining to the underlying reasons for implementing a particular intervention and determining the optimal timing for its implementation. Understanding the factors influencing the decision-making process of incubator managers in selecting one service over another, determining their portfolio of interventions, and the criteria used for selecting and monitoring incubatees is of significant importance.

Mechanisms

Mechanisms play a crucial role in the synthesis of research findings, as they provide a fundamental theoretical framework for understanding the underlying reasons behind the emergence of certain outcomes. Mechanisms play a crucial role in the incubation process, serving as the underlying purpose or influential factors that drive the overall progression of incubation. The fourth literary stream encompasses the representation of individuals via incubation performance and information transmission. The phenomenon of incubation is manifested via the implementation of specific treatments and the attainment of predetermined outcomes. Within the scope of our study, a comprehensive analysis of many scholarly articles revealed the existence of four distinct mechanisms that actively propel the process of business incubation and exert influence on its overall performance. These mechanisms include commercialization, innovation support, entrepreneurial culture advancement, societal impact creation, and expansion.

Incubators that place a premium on innovation, say the authors, are committed to easing the arduous procedures involved in developing and marketing brand new products. The major goal of these incubators is to aid in the advancement of new ideas and businesses by providing access to funding and other resources. Private incubators, corporate incubators, and science parks are only some of the examples of incubators that have been studied in connection to their wider environment and intervention. Mentoring, arranging for funding, setting up connections, giving advice on safeguarding intellectual property, helping with prototypes, and so on are all examples of methods that fall under this category. The overarching goal of these procedures is to accelerate the process of developing novel products and encouraging innovation while simultaneously giving metrics by which their effectiveness can be judged.

Additional mechanisms used during the incubation phase aim to foster the formation of societal effect, including the facilitation of both social and economic growth. Furthermore, these mechanisms also serve to promote activities that contribute to sustainable development. University incubators and socially oriented primarily emphasize this mechanism by implementing significant interventions, including infrastructural assistance, networking support, and facilitating access to coaching, capital, and training. On the output side, the focus is directed towards achieving certain outcomes, such as the establishment of social ventures and the long-term viability of fledgling enterprises.

The emergence of an entrepreneurial culture development is identified as a mechanism, which entails the cultivation and advancement of an entrepreneurial culture. While the existing body of research on entrepreneurship does not extensively address cultural factors, it has gradually reached a consensus that culture significantly influences entrepreneurial activities in a given community. One may posit that the personalities and behaviors of people, as well as political or legal systems, economic situations, and social mores, are derived from the national culture in which they are situated. Hence, Stuetzer et al. [28] have put up the idea of developing a complete framework for understanding entrepreneurship within a cultural context. However, Bogan and Darity [29] in their comprehensive literature review on empirical research investigating the relation between entrepreneurship and national culture, identified some conceptual and methodological challenges that remain unresolved. Despite the growing empirical interest in the subject, there are evident limits in evaluating the correlation between cultural values and entrepreneurship.

In the majority of research studies, a notable challenge arises from the limited availability of aggregated data, hence posing difficulties in accurately evaluating the concrete impact of cultural determinants on entrepreneurship. However, it is crucial to consider the cultural context while seeking to comprehend the mechanisms and motivations behind entrepreneurship, as well as the individuals that engage in it. Therefore, in order to gain insight into the actions and decisions of people within a society and effectively influence their preferences, it is essential to examine both the population and its cultural dynamics. University incubators and general business incubators have a primary objective of fostering entrepreneurial culture mechanisms. This is achieved through various interventions, including providing networking support and facilitating connections with successful entrepreneurs, particularly for alumni and expert networks. Additionally, these incubators facilitate access to financial resources, as well as offering training and coaching opportunities. The objectives often pursued via this technique include the evaluation of startup success and the promotion of entrepreneurial development.

Technology transfer offices and incubators at universities work toward the commercialization and expansion of R&D initiatives. With this approach, we might examine the recent research on the commercialization and effectiveness of knowledge. The major interventions addressed by this mechanism are the establishment of program entry standards, the provision of infrastructure assistance and networking support after admission, and the provision of training and coaching to improve transfer and appropriation of knowledge. This framework's goals include, among others, the assessment of startups' and incubators' effectiveness.

A. Outcomes

The results in the CIMO evaluation pertains to the body of scholarly work that examines the effects resulting from the incubation process, which are brought about by particular processes. This article has extensively examined the advancement

of entrepreneurs from many perspectives, encompassing the establishment of novel enterprises and the cultivation of entrepreneurial individuals via the incubation procedure. The studies that examine the effect of incubators on the innovation and development of new products are primarily centered around output measures and the cultivation of a learning culture, as well as investments in creativity and innovation. Additionally, these studies investigate the innovative performance of firms, the investment level in R&D (research and development), and the influence of entrepreneurial networks on innovative performance.

The literature on the outcomes of incubators for startups primarily focuses on various indicators of increased performance. These indicators include employment growth and the creation of new jobs, orientation towards growth and the achievement of profit growth, sales growth, return on assets and returns on investment, access to entrepreneurial finance, loan repayment capacity, business expansion, and the protection of innovation through patents. The measuring and evaluation of corporate performance is rooted in the disciplines of management, accounting, and economics. The primary aim of performance evaluation is to assess the effectiveness and efficiency of an organization's operations and management practices based on predetermined standards and criteria. A more comprehensive perspective of the idea guarantees that the interests of the organization's stakeholders are considered, with the efficiency and effectiveness being noted as the two major performance elements.

According to Henri [30], a system of performance measurement may be defined as the systematic process of assessing an organization's effectiveness and efficiency. According to Vincent, Gribonval, and Févotte [31], performance measurement refers to the systematic value assignment process to things or occurrences in a manner that accurately represents quantities, characteristics, or categories of a certain attribute. Historically, the assessment of organizational success has mostly relied on financial metrics, including factors such as yearly revenue, annual profit, customer base, and growth rate, among other aspects. On the other hand, components of the multi-objective training posit that performance evaluations have to integrate various organizational stakeholders, hence adopting a systemic view. According to Abdel-Maksoud, Dugdale, and Luther [32], financial performance measurements are mostly retrospective in nature and provide little insight into future performance. They argue that these measures tend to promote short-term decision-making and are primarily focused on internal aspects, neglecting external factors such as rivals and consumers. Contemporary performance assessment methods have therefore been extended to include a range of financial and non-financial factors, hence acquiring a multidimensional character.

Both the literature on the impacts of incubators and the literature on the transfer of information and incubator performance are crucial to understanding the incubation process outcomes. The vast majority of these studies are quantitative cross-sectional analyses of the elements that affect the incubation process and the outcomes for incubatees, firms, regions, and nations. Numerous scholarly investigations delve into the probability of entrepreneurial exit strategies, startup failure, and survival, and the innovation of novel goods.

V. CONCLUSION

Based on the conducted study, it can be inferred that business incubation serves as an efficacious strategy for enabling the formation and expansion of small and medium-sized firms (SMEs). Incubation programs provide a diverse array of services and resources to aspiring entrepreneurs, aiding them in surmounting obstacles and enhancing their prospects for success. The research conducted in this study has successfully identified many categories of incubators, like university business incubators, general business incubators, technological incubators, and social incubators. Although social, virtual, and corporate incubators have received little academic attention thus far, this emerging field of study has great promise. Incubators play a vital obligation in the incubation process via the interventions they provide, including as infrastructure support, monitoring, and selection, access to money, and training. There are several mechanisms that drive the process of incubation forward, such as encouraging invention, creating social impact, fostering an entrepreneurial culture, and easing the path to commercialization and expansion. There are many positive outcomes that can be attributed to business incubation, including but not limited to increased entrepreneurship, innovation, performance, sustainability, spin-off creation, and social enterprise development. Business incubation often has positive results for the incubates, the enterprises, the communities, and the countries involved. However, greater investigation is necessary to comprehensively examine its whole range of capabilities and efficacy within diverse settings.

Data Availability

No data was used to support this study.

Conflicts of Interests

The author(s) declare(s) that they have no conflicts of interest.

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