

BUSINESS INCUBATOR MANAGER ROLES: A SYSTEMATIC LITERATURE REVIEW FROM LITERATURE BETWEEN 2001 - 2024

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ABSTRACT

Business Incubator has already evolved from only providing resources, to becoming a place to develop the entrepreneur. This change creates a lot of tasks that should business Incubator provide and makes managers' roles more important than before. Even though, is much research about the success of incubator and startup but the roles of manager still need to be explored more. This systematic review aims to investigate the roles and the responsibilities of the business Incubator managers, their impact for the startup and incubator itself, and how can the managers align it with the long-term incubator goals. A systematic review was conducted using PRISMA framework and reported with the guidance of PRISMA2020 Checklist. Search from the publication that Examined incubator business manager published from 2001 -2024, From 129 article that found from the 129-article identified, 35 used for the final review. This Research found that Manager has a key role in facilitating mentees / incubates to access resources and networks, mentoring, and managing the incubator operations. Suggest the managers to become proactive for the success of the mentee / incubates. The study concludes that the role of incubator managers is crucial to fostering entrepreneurship, key factor for the success of incubator, it recommends for them to enhance managerial roles to adapt on the dynamic environments.

Keywords: *Incubator Business, Manager Incubator, Manager Roles, Leadership*

Article history: Submission date October 28th 2024 Accepted date January 7th 2025

To cite: Syahputra, W, Agustina, T.S. (2024). Business Incubator Manager Roles: A Systematic Literature Review From Literature Between 2001 - 2024. *Jurnal Manajemen*, 21(2), 184-199.

1. INTRODUCTION

Since the beginning when incubator business come out, the incubator has proven that they can improve the economics of the regions (Wiggins & Gibson, 2003). Incubators always evolved to adjust

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the needs of the stakeholders and the environment (Aernoudt, 2004) from gives the spaces and physical services to become focused on the incubates (Hackett & Dilts, 2004). In 2001, Incubator business give more services that help incubates growth their business such as business support programs (Bruneel et al., 2012; Theodorakopoulos et al., 2014). Services like mentoring & coaching also networking are become more crucial and important for the incubators. This need makes someone who running the incubators must be proactive, especially the managers, he has multifaceted role, from resource allocation and mentoring to build the network with the stakeholders while aligning the goals between incubates and the organizations. Despite the importances of incubator managers, still has challenges in understanding how their practices will have an impact for the success of the incubated startups.

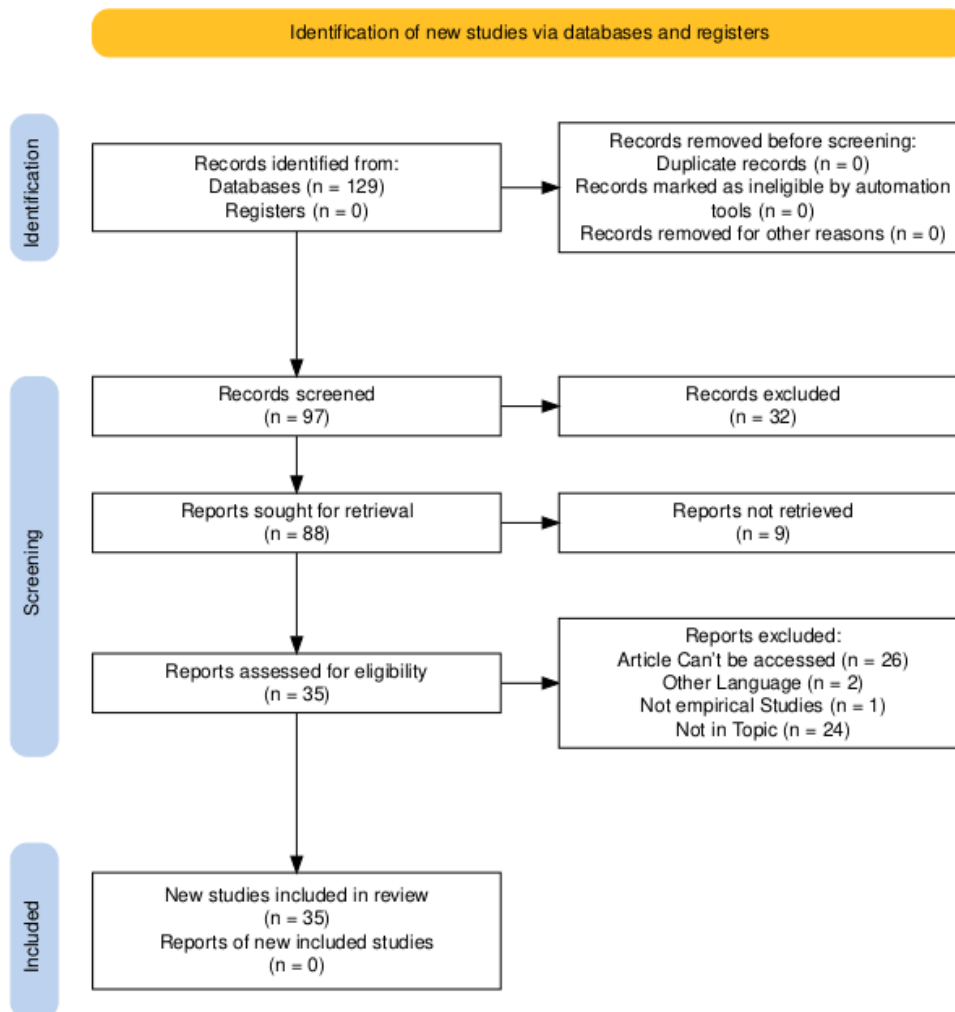
Several studies have already highlighted the relations between the business incubators and their managers. Incubator business manager becomes the part of success factor in the incubator business (Adriansyah & Rimadiaz, 2023; Dániel & Porkoláb, 2021; Gozali et al., 2020; Pellegrini & Johnson-Sheehan, 2021). Skills and commitment from the managers will have a significant impact on the incubating results (Kim & Ames, 2006; Peters et al., 2004). They must have a good understanding with the business of incubates (Ding et al., 2023; Theodorakopoulos et al., 2014) demonstrated the proactive managers will give the direct impact for the incubates. Similarly, Vaz et al. (2023) showed the informal mentoring that managers give will improve the entrepreneurs' outcomes. Studied by Pellegrini & Johnson-Sheehan (2021) and Ahmad & Thornberry (2018) emphasize that the need for managerial alignment with long-term goals of the incubators. However, the specific dynamics of managerial behavior, incentive structures, and cross-cultural differences remain underexplored.

Therefore, rarely studies that focus on exploring the incubators managers. Kakabadse et al. (2020) explored the role of incubator managers based on their own perspective, the results are they should act as a collaborator not as a transactional manager that focused on the administrative tasks, but not described the challenges that they faced and how to handle it. This study indicates that gaps should be explored, especially on how managerial incentives align with the long-term goals.

In addition, Literature review research already conducted by Cantarino & De Araujo (2022) related to technical, behavior and competences from the leaders or managers in general. Even though this research was carried out more broadly, according to the researchers, they have limitation on the database and the validity from the literature that be used give the spaces for the next research. They also suggest need more specific research should be conducted to give more specific details on the object. It means there is still room for this research to explore the role of incubator business managers.

This research focuses on systematically analyze the roles of business incubator managers from previous literature during the period 2001 -2024 and seeks for the answer from following

questions: what does empirical evidence suggest about the roles and responsibilities of business incubator managers and what does empirical evidence suggest about skills and competencies of business incubator managers should have. The outcome of this study will provide insights for incubator managers to adapt to the changing entrepreneurial environments. It also will give the stakeholders a good understanding about the responsibilities of the managers, especially in Indonesia, who need a lot of incubator business managers in the process to create a new incubator business to follow the new policy, there are at least 1 incubator business every province or city (PP 7 TAHUN 2021, 2021).



Picture 1. Prisma Flow Diagram

Source: Author

2. METHODOLOGY

Systematic review chooses as method to answer the questions. Systematic review is an adequate method to synthesize all the available evidence to provide a robust evidence base to guide policy and practice (Victor, 2008). During the process, we follow the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Guidelines (Moher et al., 2009) and the checklist (Page et al., 2021). The stages of this systematic literature review are depicted in the PRISMA flow diagram (Picture. 1), Picture created by tools that developed by Haddaway et al. (2022), starting with the number of references initially found and moving on to the papers that were excluded and, finally, the papers that were included.

Search Strategy

To find credible literature, this study uses literature that is listed on Scopus Database. Scopus databases more than 18,000 articles that have high accuracy search (Supriharyanti & Sukoco, 2023). The keywords that used in search string are combination of words “Manager*” and “Incubator* Busines*” with several combinations that limited to studies published between 2001 and 2024. We searched for the terms in titles, abstract, and keywords, yielded 129 articles

Study Selection

Study selection was based on 5 criteria (Table 1.). 129 articles were screened through reading the titles and abstracts, the articles that are not mentions about manager or leader, or published in other language than English, excluded. Based on this exclusion, 32 studies do not meet these criteria. Several studies excluded because of the link to the article are broken, 9 articles and 26 articles excluded because of the limited access. 2 articles excluded because after retrieve the full text, the articles text written on other languages than English.

Table 1. Exclusion Criteria

	Criteria	Description
1	Not on Topic	The article addresses another topic
2	Article Can't be accessed	Link to the article does not give any articles or has a limited access
3	Other Language	Article written other than English
4	Not Empirical Studies	Studies not showing any empirical studies methodology, theory construct
5	Not give Impact for topic	detailed analysis of the text showed the empirical study not give an impact for the topic.

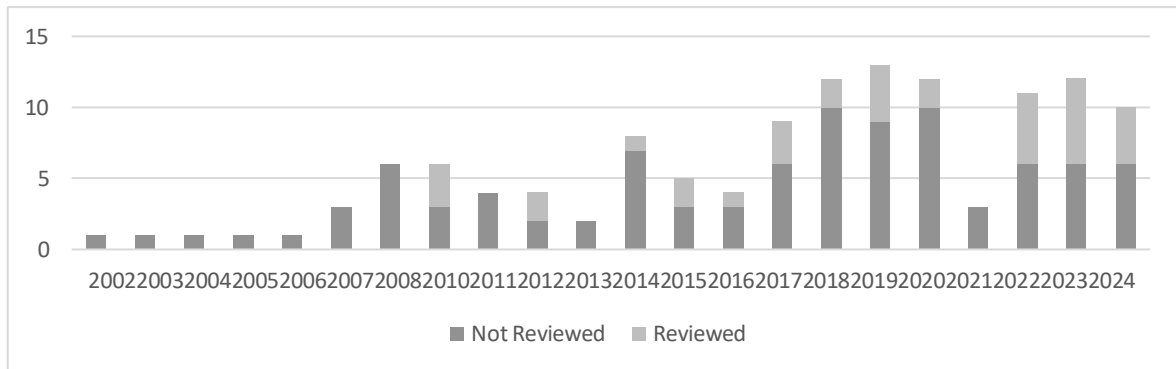
Source: Author

The full-text analysis was conducted in remaining studies, excluded articles that are not empirical research. And the studies should give an impact for the topic, the articles should have an

answer for the research questions that already define. The articles that do not give an impact are excluded, and the article that can answer the research questions selected for the literature review. 25 articles excluded and 35 articles included for the literature review.

Data Extraction and Analyses

Data were extracted from the 35 selected articles, recorded key information about the studies then written in the spreadsheet. Information at the sections of Findings, Discussions, and Conclusions were analyzed, NVivo apps used to help mapping the information and answer the research questions.



Picture 2. Publications and hits
Source: Author

3. RESULT AND DISCUSSION

We included 35 studies for the qualitative synthesis. All studies were published in peer-reviewed journals between January 2001 and August 2024. Picture. 2 presents an overview of the hits of publications found per year. All studies included are original empirical studies. In accordance with the inclusion and exclusion criteria, this review focuses on papers that research about Incubator Business manager roles and explicitly discuss about the Incubator Business manager roles in their empirical part. From 35 Studies examined, always involve incubator business manager as a source of information. The Studies were conducted in over 19 different countries and spread a long all continent (e.g., Australia, Brazil, Canada, China, Denmark, Egypt, France, Germany, India, Indonesia, Iran, Ireland, Japan, Lithuania, Netherlands, Portugal, South Africa, Taiwan, Thailand). Since all the studies have been indexed to Scopus and the vast majority are in the high quartile Scopus (See. Table 3.), it can also be claimed that they are all high quality and valid.

Table 3. List of Journal

Scopus Index	Journal Name	Number of Articles
Q1	Technovation	4
	Journal of Small Business and Enterprise Development	2
	International Entrepreneurship and Management Journal	2
	Journal of Technology Transfer	2
	Asian Journal of Business Research	1
Q1	IEEE Transactions on Engineering Management	1
	Innovation and Management Review	1
	International Journal of Emerging Markets	1
	Journal of Business and Industrial Marketing	1
	Small Business Economics	1
	Technological Forecasting and Social Change	1
	Technology Analysis and Strategic Management	2
Q2	Baltic Journal of Management	1
	Benchmarking	1
	Business Strategy and the Environment	1
	International Journal of Gender and Entrepreneurship	1
	Journal of Business Research	1
	Journal of Cleaner Production	1
	Journal of Organizational and End User Computing	1
	Management Decision	1
	Management Research Review	1
	Service Industries Journal	1
	Sustainability (Switzerland)	1
	Q3	European Journal of Innovation Management
Journal of System and Management Sciences		1
R and D Management		1
Southern African Journal of Entrepreneurship and Small Business Management		1
Uncertain Supply Chain Management		1

Source: Process Result

What does empirical evidence suggest about the roles and responsibilities of business incubator managers?

According to our findings, 33 Studies identified mention about roles and responsibilities that incubator business have. 18 Roles and responsibilities are mentioned in the studies, with 5 responsibilities can be explore deeper in the part manager maintain and build the networking and relationship the details studies are explained in the Table 4.

Table 4. List of References of Roles & Responsibilities

	Number of Studies	Studies Reference
Networking & Relationship	17	Azadnia et al. (2022) Bibeau et al. (2024) Cooper et al. (2012) Ding et al. (2023) Ding & Li (2023) Gstraunthaler (2010) Kiran & Bose (2020) Lai & Lin (2015) Lin et al. (2012) Man et al. (2024) Rubin et al. (2015) Redondo & Camarero (2017) Redondo & Camarero (2019) Treanor & Henry (2010) Wann et al. (2017) Wu et al. (2020) Wu et al. (2023)
Funding Organizations	5	Azadnia et al. (2022) Gstraunthaler (2010) Lai & Lin (2015) Redondo & Camarero (2019) Rubin et al. (2015)
Incubates	4	Cooper et al. (2012) Kiran & Bose (2020) Man et al. (2024) Redondo & Camarero (2017)
Stakeholders	3	(Bibeau et al., 2024; Gstraunthaler, 2010; Redondo & Camarero, 2019)
External Support	2	Ding et al. (2023) Ding & Li (2023)
Personal Networks	2	Bibeau et al. (2024) Redondo & Camarero (2019)
Programme Planner	15	Ahmad & Thornberry (2018) Azadnia et al. (2022) Ding et al. (2023) Ding & Li (2023) Wann et al. (2017) Eldering et al. (2023) Hakim et al. (2024) Hou et al. (2022) Karahan et al. (2022) Kiran & Bose (2020) Man et al. (2024) Monsson & Jørgensen (2016) Mrkajic (2017) Theodoraki et al. (2022) Vaz et al. (2023)
Mediator	11	Bibeau et al. (2024) Ding et al. (2023) Ding & Li (2023) Kiran & Bose (2020) Miranda & Borges (2019) Redondo & Camarero (2017) Fukugawa (2018) Redondo & Camarero (2019) Gstraunthaler (2010) Trethewey-Mould & Moos (2023) Vaz et al., 2023)
Decision Makers	8	Ahmad & Thornberry (2018) Azadnia et al. (2022) Chan et al., (2022) Ding & Li (2023) Hong et al. (2019) Miranda & Borges (2019) Wann et al. (2017) Somsuk & Laosirihongthong (2014)
Mentor	8	Fukugawa (2018) Gstraunthaler (2010) Xu (2010) Hou et al. (2022) Man et al. (2024) Wu et al. (2023) Redondo & Camarero (2017) Treanor & Henry (2010)
Proactive Behaviours	7	Bibeau et al. (2024) Chan et al. (2022) Xu (2010) Redondo & Camarero (2019) Ding & Li (2023) Treanor & Henry (2010) Ding et al. (2023)
Immerse with Incubates	6	Karahan et al. (2022) Lai & Lin (2015) Xu (2010) Monsson & Jørgensen (2016) Treanor & Henry (2010) Wann et al. (2017)
Supportive Behaviour	5	Bibeau et al. (2024) Hakim et al. (2024) Hou et al. (2022) Kiran & Bose (2020) Treanor & Henry (2010)

			Continued
Evaluator	4	Azadnia et al. (2022) Eldering et al. (2023) Karahan et al. (2022) Redondo & Camarero (2019)	
Incubates recruiters	4	Azadnia et al. (2022) Bibeau et al. (2024) Hong et al. (2019) Treanor & Henry (2010)	
Gatekeepers	3	Miranda & Borges (2019) Redondo & Camarero (2017) Wu et al. (2023)	
Facilitator	2	Ding et al., (2023) Trethewey-Mould & Moos (2023)	
Goals Setter	2	Ahmad & Thornberry (2018) Mrkajic (2017)	
Positive behaviours	2	Ahmad & Thornberry (2018) Bibeau et al. (2024)	
Community Builder	1	Ahmad & Thornberry (2018)	
Motivator	1	Cooper et al. (2012)	
Negotiator	1	Bibeau et al. (2024)	
Organization Business Development	1	Treanor & Henry (2010)	

Source: Process result

What does empirical evidence suggest about skills and competencies of business incubator managers should have?

Based on 35 Reviewed Studies, we investigated at least 17 Skills and competencies that studies mention Incubator business should have. Skills and competencies that are mentioned in the studies and the reference on the studies can be found in Table 5.

Table 5. List of References of Skills & Competencies

Variable	Number of Studies	Studies Reference
Analysing Skills	8	Ahmad & Thornberry (2018) Azadnia et al. (2022) Bibeau et al. (2024) Hong et al. (2019) Karahan et al. (2022) Wann et al. (2017) Monsson & Jørgensen (2016) Somsuk & Laosirihongthong (2014)
Effective Managerial Skills	6	Ahmad & Thornberry (2018) Cooper et al. (2012) Ding & Li (2023) Fukugawa (2018) Lin et al. (2012) Wann et al. (2017)
Marketing Skills	5	Hakim et al. (2024) Hou et al. (2022) Treanor & Henry (2010) Wann et al. (2017) Wu et al. (2023)
Networking Skills	5	Redondo & Camarero (2017) Lai & Lin (2015) Redondo & Camarero (2019) Wu et al. (2020) Lin et al. (2012)

Continued

Experienced Managers	3	Covin et al. (2024) Fukugawa (2018) Kiani Mavi et al. (2019)
Problem Solver	3	Ahmad & Thornberry (2018) Cooper et al. (2012) Hakim et al. (2024)
Trusted Person	3	Bibeau et al. (2024) Redondo & Camarero (2019) Xu (2010)
Communication Skills	2	Ahmad & Thornberry (2018) Vaz et al. (2023)
Incubators or Incubation Knowledges	2	Kiani Mavi et al. (2019) Redondo & Camarero (2019)
Motivating Skills	2	Bibeau et al. (2024) Cooper et al. (2012)
Specialization Skills & Competencies	2	Fukugawa (2018) Redondo & Camarero (2017)
Academic Background	1	Redondo & Camarero (2017)
Social Science Background	1	Redondo & Camarero (2017)
Technological Background	1	Fukugawa (2018)
Business Experience	1	Redondo & Camarero (2017)
Entrepreneurial Experience	1	Redondo & Camarero (2017)
Financial Skills	1	Bibeau et al. (2024)
Leadership	1	Ahmad & Thornberry (2018)
Mentoring Skills	1	Xu (2010)
Time Management	1	Treanor & Henry (2010)

Source: *Process Result*

Discussion

Incubator managers already known that they have an impact on the success of the incubator business (Adriansyah & Rimadiaz, 2023; Gozali et al., 2020; Pellegrini & Johnson-Sheehan, 2021). Their skills and commitment to the incubator business will have a significant impact for the incubating results (Kim & Ames, 2006; Peters et al., 2004). This study also emphasizes that business incubator managers have a complex and multifaced role. They must maintain several relationships, from the landlord to the shareholder (Ahmad & Thornberry, 2018). They would influence the success of the organizations and the incubates (Redondo & Camarero, 2017).

Incubator managers have wide responsibilities including resource allocation, mentorship, and fostering networks, which contribute to the organization's performance and success of incubates. Incubator business stakeholders should consider or at least know that a manager has a big impact and is not an easy job. However, incubation managers' numbers may negatively impact incubation performance, especially in technology sectors, and when working with incubates in the nascent stage (Fukugawa, 2018), a higher number of managers does not necessarily correlate with incubated performance. The problems of the nascent stages incubate face are diverse but have

similarities among other incubates. Rather than adding more managers to handle the incubates, the focus should be on improving the quality of engagement between managers and incubates (Redondo & Camarero, 2017), ensuring that managers have the right skills and experience to provide tailored support to each startup. While the research does not identify the number of ideal managers, it does underline the significance of striking a balance between quality and quantity to cover up the needs of incubates.

Another finding of the study is manager proactive behavior, behavior that shows them to act beyond their formal task and their incubated businesses outside of official standards (Redondo & Camarero, 2019). Managers who take a proactive approach are more likely to facilitate the success of incubated startups (Bibeau et al., 2024; Chan et al., 2022; Xu, 2010; Redondo & Camarero, 2019; Ding & Li, 2023; Treanor & Henry, 2010; Ding et al., 2023). Proactive managers not only help startups navigate the challenges of early-stage development but also ensure that they are well-prepared for the scaling phase. Incubators should actively interact and immerse themselves with their incubates, assisting them in connecting with stakeholders, networks, and funding sources. In their early phases they do not have access to networks, resources, or knowledge that can aid in decision-making. During later stages, incubates are frequently more self-sufficient and focused on increasing their operations, shifting to strategic decision-making and long-term planning, requiring less rigorous management assistance. This finding also supports previous research by Bruneel et al., (2012), who noted that modern incubators have shifted from providing basic infrastructure to offering more comprehensive, knowledge-based services that are heavily dependent on the proactive involvement of managers. Furthermore, the study highlights the importance of networks and relations that managers build and maintain. Adriansyah & Rimadiah (2023) show incubators that give their access to their network like their partners and events that can be used for startup showcase, will improve the success of the startup. The incubator business network is also one of the success factors of incubator performance (Gozali et al., 2020). It means, the managers should actively build and maintain networks for their incubates, connecting them with investors, mentors, and other entrepreneurs, which will significantly enhance the chances of incubate success (Azadnia et al., 2022; Bibeau et al., 2024; Ding et al., 2023; Ding & Li, 2023; Gstraunthaler, 2010; Lai & Lin, 2015; Lin et al., 2012; Rubin et al., 2015; Redondo & Camarero, 2017; Redondo & Camarero, 2019; Treanor & Henry, 2010; Wann et al., 2017). To fully utilize incubator network resources, incubator managers should concentrate on building both internal and external networks and employ network embeddedness to impact new venture performance (Wu et al., 2020, 2023). They must assist incubates in accessing networks so they can utilize the services included in incubation networks (Kiran & Bose, 2020). The managers also must have a deeper understanding of the incubates, follow the incubates needs (Redondo & Camarero, 2017), lower the age gap with the incubates (Hou et al.,

2022), and help them to have a relationship and learn from seniors or authoritative actors, like external experts, government, etc. (Man et al., 2024). These actions will help the success of the incubates and will reflect the success of the organizations, effectiveness of how managers do that will be related to the managers' experience and background. There are also obstacles that hold the managers to do a good networking, Time limitations, Lack of information, and lack of trust are the obstacles should managers consider to perform good networking (Cooper et al., 2012).

With all the responsibilities managers have that we already discussed before, like resource allocation to fostering networks of incubators, incubator managers also have new challenges, they must adopt the increasing adoption of digital tools and platforms which give another new form of incubator, digital incubators. Managers are required to adapt their traditional management practices to a digital environment (Vaz et al., 2023). In hybrid incubators, which combine physical and virtual support, managers must leverage digital tools to facilitate remote collaboration, access to global networks, and digital mentoring (Chan et al., 2022). These developments present opportunities for managers to expand the scope of their services but also require new competencies in digital management and remote engagement.

Overall, all the findings that we find are that incubator managers have complex and multifaced roles, maintain several different relationships, have a wide responsibility, have proactive behavior, and must adopt the newest form of incubators. Managers of incubators must adapt their duties to the changing demands of stakeholders and startups, especially as entrepreneurial ecosystems change. The study emphasizes the need for managers to actively interact with their incubates by offering guidance, efficiently running their businesses, and making necessary networks and resources accessible. This flexibility guarantees managers will remain responsive to shifts in startup expectations, market demands, and technology adoption. As the findings discuss, incubator managers play a critical role in bridging the gap between the objectives of the incubator and startup success.

We suggest incubators reconsider how they hire and train managers, incubators should put more effort into creating a smaller group of highly qualified and experienced managers who can offer specialized support and promote long-term success for startups than they should into hiring more full-time managers. Future studies should examine the specialized skills incubator managers require to succeed in the quickly evolving world of entrepreneurship, especially when it comes to hybrid and digital incubation models. The creation of performance measures for incubator managers that account for their role in sustained entrepreneurial success should also receive more focus.

4. CONCLUSION

This research is a systematic literature review to find out Incubator business managers roles. The results show that very wide roles and responsibilities that managers should maintain. A key component of success is proactive managers, in which managers actively mentor, interact with incubates, and always try to maintain and build networks and relationships, especially to find funding for the incubates. Incubators need to reconsider how they hire and train managers, creating a more specialized, smaller workforce that can offer excellent, proactive support. Future studies should focus on the skills of managers in dynamic environments, as well as how they contribute to long-term business success through performance measures.

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