Journal of Administrative And Financial Sciences

Volume: 08 / N°: 01 (2024), P: 34-46

Sustainability-oriented Incubators: An Overview

BELLOUM Yasmine [1] [*], KHEMILI Farid[2]

[1] University of Oum El Bouaghi (Algeria), Innovation & Financial Engineering Laboratory, Belloum.Yasmine@univ-oeb.dz

[2] University of Oum El Bouaghi (Algeria), Innovation & Financial Engineering Laboratory, Khemili.farid@univ-oeb.dz

Received: *17/04/2024* ***Accepted:*** *28/05/2024* ***Published:*** *30/06/2024*

Abstract:

This paper aims to present a comprehensive overview of Sustainability-oriented Incubators as a vital force in promoting sustainability, as well as their potential to cultivate and support sustainable ecosystems and start-ups. The research relied on qualitative data from various sources to offer valuable insights into Sustainability-oriented Incubators and green start-ups in Germany, as well as the key themes and trends in the approaches embraced by these incubators. The results showed that Sustainability-oriented Incubators have an impact on the overall sustainability landscape and contribute to creating more sustainable ecosystems; furthermore, this type of incubators provide resources, guidance, and mentorship to start-ups that are focused on developing sustainable solutions to address environmental and social challenges.

Keywords: Sustainability; Business incubators; Green Start-up; Environmental Performance.

JEL Classification: Q56; M13; L26.

[*] ***Corresponding author.***

Introduction

Despite the concept of Sustainability Existing for over 20 years, gaining noticeable support in different circles including business, and agreeing to its agenda, there has been no significant tangible progress toward achieving a sustainable ecosystem, on the contrary, there is a constant deterioration.(Clifton, 2012) It is argued that sustainability is vague about what it aims to sustain, and will remain so until we can determine who, what, and why we are using it. (NEWTON & Freyfogle, 2005) It is also noted, that the three dimensions of sustainability can be conflicting to decision-makers, leading to economic performance being prioritized. (Lamberton, 2005) Indeed, Sustainability cannot be defined exactly, which could imply unpredictable changes, surprises, hazards, and innovations; for Holling it is a continued game of maintaining adaptive capability. (Bruckmeier, 2009) Nevertheless, given the dangers we face today, there is an urgent need to work together to move beyond conflict and establish new goals and values that benefit the long-term well-being of the planet, people, and communities before short-term profits for a limited number of people. That means changing our current economic system with one that promotes sustainability. (Seidel, 2011)Businesses can benefit from incorporating sustainability, through Cost savings by improving resource efficiency, reducing waste, and minimizing environmental impact. Secondly, sustainability enhances an organization's reputation and brand image, which attracts environmentally conscious consumers and investors. Thirdly, driving innovation by encouraging businesses to develop new products and processes that are environmentally friendly and socially responsible. Sustainability also helps organizations to comply with evolving regulations and standards related to environmental and social issues. Lastly, Embracing sustainability can foster a positive corporate culture by engaging employees, promoting social responsibility, and contributing to the well-being of society. (Reinhardt, 2000)The importance of sustainability to organizations lies in its potential to address economic, environmental, and social issues in a balanced and long-term way. (De lange et al., 2012) A part of businesses contributing to sustainability is addressing their various activities and re-design to make them more environment-driven, in addition to focusing on reducing harmful outputs like greenhouse emissions, by investing in these aspects organizations are trying to reach the phase of sustaining corporation where the organization is able to fulfill all its social, environmental and financial obligations.(Clifton, 2012)

Since Sustainability requires processes and institutions that can help promote sustainable ecosystems and entrepreneurship. here comes the role

of business incubators (Dovers, 2001) Incubators are progressively being employed as a mechanism for fostering entrepreneurship by fostering nascent enterprises, aiding them in enduring and surviving. (Aernoudt, 2004)

Due to the increasing importance of sustainability in the business world, there is an interest in business incubators that support sustainability-focused ventures and provide them with mentorship and different resources, as a mean to help promote and facilitate sustainability, this paper aims to address the rise of Sustainability-Oriented Incubators as a mechanism to drive sustainability, their impact, effectiveness, and best practices. The following research questions were formulated to guide this study:

- How can business incubators promote sustainability?
- What are the factors that support sustainability-oriented incubators' growth?
- What are the used indicators to measure sustainability-oriented incubator's performance?

These research questions will be explored through a combination of literature review and study cases, and reviewing annual reports from various international organizations. finally, we will reflect on Germany's experience in green start-ups and sustainability-oriented incubators.

This paper is divided into three sections: the first section addresses the concept of sustainability-oriented incubators and their contribution to sustainability in addition to performance measuring indicators, the second section is the methods section, and the third will present the German entrepreneurial ecosystem and its experience with green start-ups and sustainability-oriented incubators.

1- Literature Review

1-1- Business incubators

The first ever incubator dates back to 1959 in Batavia, New York, in the United States. When Charles Mancuso leased space in his Batavia Industrial Centre to small and emerging companies and provided guidance throughout their growth process. This concept remained unique until the 1970s. Previously, incubators focused either on technology or management however, an incubator now combines both elements and more such as innovation. Since the 1970s, business incubators have expanded globally, (Aerts et al., 2007) Business incubators began to gain popularity in the 1980s, primarily as a provider of office space and a portfolio of companies under one roof. Throughout the 1990s, business incubators expanded their value proposition beyond providing infrastructure to provide in-house business support services aimed at accelerating the learning process for new

ventures. (Bruneel et al., 2012) The term "incubator", is frequently employed “as a comprehensive designation for institutions that form or establish a supportive environment that is conducive to the ‘‘hatching’’ and development of nascent enterprises”. (Bergek & Norrman, 2008) business incubators can also be defined “as facilities that provide affordable space, shared office services, and business development assistance in an environment conducive to new venture creation, survival, and early-stage growth”. (Allen & Mccluskey, 1990) Over the course of time, various terms have been utilized to promote Business Incubators that are more or less interchangeable, such as 'Business Accelerators', 'Research Parks', 'Science Parks', 'Knowledge Parks', 'Seedbeds', 'Industrial Parks', 'Innovation Centers', 'Technopoles', and 'Networked Incubators', among others.(Bøllingtoft & Ulhøi, 2005)

1-2- Business incubators Performance

Performance measurement in incubators differs from performance measurement in other organizations. This is because the goals of the stakeholders are very different. (Rathore & Agrawal, 2020) Dimensions utilized for evaluating the performance of business incubators encompass several key aspects. Firstly, the graduation rate of businesses that have successfully completed the incubation process and emerged from the program serves as a pivotal indicator of incubator performance, This metric is recommended by the National Business Incubation Association (NBIA) as a measure of incubator success. Secondly, gauging the accomplishments of businesses that have undergone incubation, including factors such as revenue growth, market share, and profitability, constitutes another crucial dimension in measuring incubator effectiveness. Moreover, the number of job opportunities generated by client businesses plays a significant role in assessing the impact and efficacy of an incubator. Additionally, the salaries disbursed by client businesses can be employed as a metric to measure their expansion and triumph, thereby reflecting the overall effectiveness of the incubator. Lastly, examining the outcomes achieved by businesses following incubation, such as enhanced revenue, market expansion, and sustained growth, also contributes to the evaluation of incubator performance. (AL-MUBARAKI & SCHRÖL, 2011) according to Jardim-Gonçalves, commonly utilized indicators for evaluating the performance of an incubator include the graduation rate and financial measures. An important factor in assessing the incubator's performance is the level of business maturity, which pertains to the growth and development of the companies that are supported by the incubator. An indication of the incubator's performance can be observed through network aspects, including

the strength of connections and collaborations with other stakeholders. Additionally, potential indicators of improved incubator performance are contextual factors such as intense local economic activity and scientific production. (Jardim-Gonçalves, 2017)

1-3- Sustainability & Incubators

Incubators and sustainability have received limited attention in previous research; moreover, there is also differences in the application of the notion of sustainability. This is evident in different types of incubators, sometimes focusing on only one aspect or dimension of sustainability. (Marques et al., 2022) and creating sustainable ecosystems requires the involvement of numerous stakeholders, including incubators, which play a pivotal role in sustainable ecosystems by offering the right support and networks for their tenants. (Simatupang et al., 2015) Incubators play a vital role in promoting sustainability through engaging relevant stakeholders and interactive activities, thereby contributing to the social and economic dimensions of sustainability. They form partnerships with organizations such as universities, business centers, and public research institutions to provide opportunities to promote sustainable business development. Facilitate resource sharing, manage stakeholder interests, coordinate and integrate partner and tenant engagement to support the region's sustainable development. (Hernández & Carrà, 2016) incubators act as change agents in Sustainability transition, as they function as intermediaries that facilitate collaborations and connections among stakeholders thereby contributing to green innovation. Furthermore, they offer external guidance and resources to foster the progression of eco-innovation. By participating in the eco-innovation process, they contribute to the development and implementation of sustainable technologies and practices. This linkage between sustainability behavior to broader system changes accelerates sustainability transitions. (Gliedt et al., 2018) Sharda notes that Incubators promote sustainability through various means, like providing resources and fostering environmental innovation, which encourages the development of environmentally friendly solutions. Incubators also prioritize resource efficiency, waste reduction, and responsible sourcing. Additionally, they facilitate knowledge sharing and collaboration among stakeholders in the sustainability sector. Lastly, Incubators raise awareness and support policy advocacy for environmental conservation. (Sharda et al., 2015)

1-4- Sustainability-oriented Incubators

The emergence of a global sustainability movement dedicated to promoting climate neutrality and sustainable economic activities has led to the establishment of environmentally friendly incubators. These newly

launched incubators target entrepreneurs in clean technology, renewable energy, green enterprises, and more. (Levent, 2013) An emerging concept in the literature is the emphasis placed by certain incubators on tenants with sustainable operations and/or business models. Sustainability-oriented incubators are specialized business incubators that focus on supporting and nurturing start-ups with a sustainability focus, the main goal of these incubators is to attract and develop sustainability-oriented start-ups, with a particular emphasis on sustainable entrepreneurship and activities in sustainability. Additionally, they offer similar support as traditional incubators, including access to specialized networks such as universities, technology clusters, investors, and sponsors. These networks can provide expertise and assistance in areas related to sustainability. (Bank & Kanda, 2016) However, the proportion of sustainability-oriented tenants tends to be lower in sustainability-focused incubators. As a result, the focus on sustainability sometimes acts more like a legitimation strategy than an explicit selection criterion.(Klofsten et al., 2020)

When it comes to assessing the sustainable and environmentally friendly performance of business incubators, a range of dimensions are used: (Fonseca & Chiappetta Jabbour, 2012)

Firstly, the evaluation focuses on Green Building and Facilities, which involves assessing the extent to which incubators meet environmental requirements in terms of their physical infrastructure and facilities. Secondly, the presence of environmental criteria in the selection and recruitment process of companies by incubators is examined, which is known as Green Screening Process. Thirdly, the examination includes the level of implementation of environmental training and awareness programs within the incubators, which is referred to as Environmental Training and Awareness. Furthermore, the initiatives taken by incubators to manage energy consumption, including internal measures and support for companies to adopt energy-saving practices, are assessed under Energy Management. Moreover, the integration of environmental management themes, such as green building, facilities, and energy management, with typical practices and concepts at business incubators is established under Environmental Management Themes. Additionally, the level of proactivity shown by incubator tenants in adopting environmentally friendly practices, known as Tenants with Green Proactivity, is considered. Finally, the evaluation encompasses the overall environmental performance of both the incubators as autonomous organizational units and the incubated businesses as a whole. This is referred to as Overall Environmental Performance.

2- Methodology

This study relied on qualitative data collected through multiple sources like official documents and reporting websites and annual reports on global entrepreneurship and start-ups and sustainability in Germany. The collected data was analyzed to provide valuable insights into the challenges and opportunities faced by entrepreneurs and start-ups in Germany focused on sustainable practices.

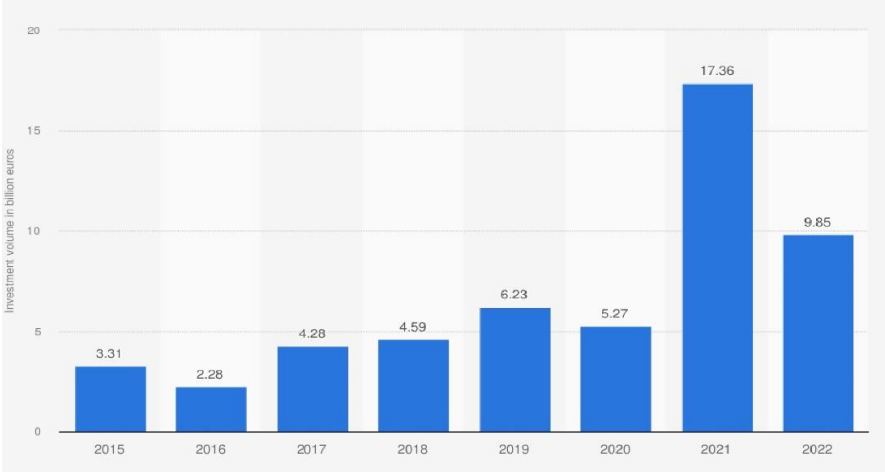
3- Results and Discussion

This section provides the findings of the analysis and discusses them.

3-1-The German entrepreneurial ecosystem

Germany is regarded as one of the top economies in Europe, benefiting from a conducive ecosystem that fosters the success of businesses. Germany is positioned as the seventh-ranked country on a global scale, as disclosed by the 2023 start-up ecosystem report. Moreover, it holds a notable position within the top five European countries, and According to the rankings of Startup Blink, Berlin is the 11th best city in terms of its entrepreneurial ecosystem. (StartupBlink, 2023) According to the German Startup Monitor, the number of startups in Germany had reached 1,976 by 2022. (German Startup Monitor, 2022).

Figure number (01): Investment volume in Germany Startups from 2015 to 2022.

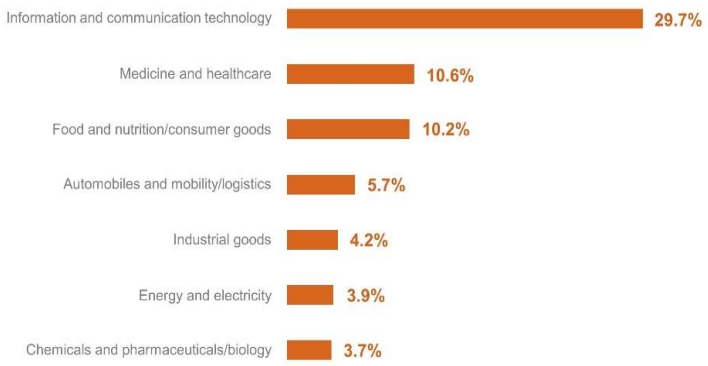


Source: (Statista, 2023)

The volume of Investments in German Startups has experienced a significant rise throughout the past 8 years (as shown in Figure 01), ultimately reaching a value of 17.36 billion euros in 2021. However, it

witnessed a decline in the following year as a consequence of the global COVID-19 pandemic.

Figure number (02): German startups by industry.



Source: (German Startup Monitor, 2022)

As depicted in Figure 02, the predominant sector of start-ups in Germany continues to be information and communication technology, which accounts for three out of ten startups. all the above suggests that the German entrepreneurial ecosystem is a well-developed ecosystem that provides a solid foundation, whether it be in terms of financial support or the necessary infrastructure, to assist start-ups and newly founded ventures.

3-2- Green start-ups and Sustainability-oriented Incubators

The realization of the United Nations' 2030 SDGs holds immense significance for the forthcoming global economy and society. Most economies have displayed commendably high levels of agreement among new or established entrepreneurs, with regards to their unwavering consideration of social and environmental matters when making decisions about their business's future. A significant number of individuals who initiate new businesses or manage existing ones take into account social and environmental considerations when making decisions. Conversely, less than one-fifth of individuals are aware of the Sustainable Development Goals (SDGs) in eight Level C economies, six Level B economies, and four Level A economies. Despite the considerable presence of entrepreneurs, both nascent and well-established, there remains a notable lack of awareness in this regard. A significant number of entrepreneurs seem to be paying heed to social and environmental issues, more so than those who are seeing the potential alignment of their actions with the Sustainable Development Goals (SDGs). (GEM Global, 2023)

In recent years, there has been a growing acknowledgment among organizations of the incorporation of ESG (Environmental, Social, and Governance) metrics in their operations. Nonetheless, numerous individuals in executive positions encounter challenges in effectively directing, overseeing, quantifying, and disclosing sustainability performance, whereas others surpass these obstacles. (ACCENTURE, 2022) Moreover, Germany is among these sustainability-driven economies, Based on a survey conducted by the Global Entrepreneurship Monitor 61.1% of Total Early-stage Entrepreneurial Activity (TEA) Always consider social impact, while 54.5% stated that they consider the environmental impact of their activities in Germany. (GEM Global, 2023) Back to Germany's Green Startups, 46% of startups see themselves as part of the green economy – a significant increase compared to the preceding year. These types of startups combine environmental goals with economic goals such as profitability, gaining market share, and growth. (German Startup Monitor, 2022)

21% of German startups can be classified as green because their products and services make a tangible contribution to environmental and climate protection. These startups are typically less than 10 years old and innovative and Contribute to the environmental goals of the green economy. These green start-ups have an important economic influence. With innovative products and services, they strive to effectively and entrepreneurially address the major sustainability challenges, including the energy transition, climate protection, reducing plastic in the world's oceans, and achieving a sustainable circular economy. (GreenStartupMonitor, 2020) It is worth noting that, Eight out of 10 green startups are digital or hybrid. According to Startup Monitor, green startups are financed by: 84 %Own capital, which also corresponds to the rate for other startups, 40 % Friends and family support, 28 %other startups, and lastly 35 % depend on Government funding, and 20 % on Business angels. In addition, various advisory services and platforms are provided for green start-ups in Germany, through various institutions and platforms and Universities and technical colleges. But a major challenge appears to be a culture clash between green founders and investors. Because Green startups do not expect to turn a profit quickly, sustainability can also mean slower growth, which is why investors view them as risky. (FIAP, 2021)

German green start-ups have shown considerable potential, as key player in addressing environmental challenges and promoting sustainable solutions. These start-ups present a decent percentage of the overall start-up ecosystem in Germany, reflecting the country's dedication to a greener and more sustainable future. Most of these start-ups operate in the information and communication technology sector. Moreover, the entrepreneurial

ecosystem provides resources and support conditions targeting these green start-ups, which contribute to their growth and success, and contributing to the overall sustainable transformation of the country's economy.

When comparing Germany with other European nations in the context of sustainable development, we find that several countries are emulating Germany's approach by establishing sustainability-oriented incubators. For instance, countries like Finland, Sweden, and Denmark have also shown considerable progress in developing sustainability-oriented incubators, with initiatives and programs that aim to promote and support sustainable business practices. According to The 2023/24 SDG Index for Europe, these countries have secured top ranks for sustainable development. (Lafortune et al., 2024)

Notable examples of Sustainability-oriented incubators include the Finnish Cleantech Incubator, the Swedish Sustainable Innovation Accelerator, and the Danish Green Tech Center. Conversely, other European countries such as Spain and Italy have exhibited slower progress in terms of implementing sustainability-oriented incubators.

Table number (01): Examples of Sustainability-oriented Incubators

Impact Factory	Sustainable Aero Lab	Gateway Accelerator	ClimAccelerator
Impact Factory is dedicated to start-ups in the green and socio-economic sectors, providing them with a collaborative space and a network of relevant actors working on future solutions.	This incubator is dedicated to building a sustainable future for aviation. Its program targets startups working to reduce the carbon impact of aviation. The program helps startups transform their ideas into commercially viable businesses with the help and guidance of experts in startups, aviation, and venture capital.	The Gateway Excellence Start-up Center (ESC) at the University of Cologne provides university-affiliated founders with advice and guidance on all aspects of building a startup. They target knowledge and technology-based concepts at every stage from idea to success.	ClimAccelerator is an incubator that seeks innovative climate solutions to create a carbon-neutral, resilient future. They target startups producing climate-impacting goods and services, as well as startups in the clean technology sector. ClimAccelerator provides start-ups with the expert resources; knowledge, network, and funding they need to effectively launch and scale their climate solutions.

Source: (XYZ Lab, 2023)

Table 01 showcases several incubators in Germany that have a focus on sustainability. These incubators aim to attract start-ups that prioritize sustainability in their activities and business models. All of these incubators

offer services and support from experts, as well as the opportunity to leverage their networks for the advantage of the start-ups. The existence of such incubators may help promote a more environmentally and socially responsible economy.

Conclusion

In conclusion, this paper provides an overview of Sustainability-Oriented Incubators and highlights Germany's experience in fostering this type of incubators and supporting green start-ups. a thorough review of existing literature on Sustainability-Oriented Incubators was conducted to provide a comprehensive understanding of the current state of research in this field. Furthermore, the study delved into the impact of these initiatives on the overall sustainability landscape within the entrepreneurial community.

The findings indicate a lack of research in this area of literature, suggesting the need for more research to fully understand Sustainability-Oriented Incubators and other mechanisms that affect and impact their performance. Additionally, Germany serves as a valuable example of a supporting entrepreneurial ecosystem for businesses in general, highlighting the provided government support and the infrastructure. Moreover, the efforts of Germany in raising awareness about the environmental and social impact of businesses have been commendable. Lastly, Sustainability-Oriented Incubators are a key factor in driving the development and growth of green start-ups, as they provide specific support services for the design and development of sustainable solutions.

Regarding the limitations of this study, it is essential to acknowledge that the research scope may be limited by the available literature and access to data sources, as well as the specific focus of the study. Despite these limitations, this study provides valuable insights into the dynamics of sustainability-oriented incubators and highlights the case of Germany as an exemplar.

In terms of future research, it would be beneficial to expand the scope of the study to include other countries and regions, such as developing or emerging economies, to gain a more comprehensive understanding of the effectiveness and impact of Sustainability-oriented incubators in different contexts. It would also be valuable to conduct longitudinal studies that track the progress and outcomes of sustainability-oriented incubators over time. Additionally, future research could conduct a comparative analysis of Sustainability-oriented incubators in different countries to identify best practices and identify critical success factors.

Overall, Sustainability-Oriented Incubators present a promising opportunity for promoting sustainability and helping start-ups that align with their goals to thrive and succeed. However, they may face challenges such as limited funding, lack of awareness and understanding among entrepreneurs and investors, and the need for continuous monitoring and evaluation to ensure their effectiveness

Bibliography

ACCENTURE (2022, January 19). Measuring sustainability. Creating value. *Accenture*. https://www.accenture.com/us-en/insights/strategy/measuring-sustainability-creating-value

Aernoudt, R. (2004). Incubators: Tool for Entrepreneurship? *Small Business Economics*, *23*(02), 127–135.

Aerts, K., Matthyssens, P., & Vandenbempt, K. (2007). Critical role and screening practices of European business incubators. *Technovation*, *27*(5), 254–267. https://doi.org/10.1016/j.technovation.2006.12.002

Allen, D. N., & Mccluskey, R. (1990). Structure, Policy, Services, and Performance in the Business Incubator Industry. *Entrepreneurship Theory and Practice*, *15*(02). https://doi.org/10.1177/104225879101500207

AL-MUBARAKI, H., & SCHRÖL, H. (2011). MEASURING THE EFFECTIVENESS OF BUSINESS INCUBATORS: A FOUR DIMENSIONS APPROACH FROM A GULF COOPERATION COUNCIL PERSPECTIVE. *Journal of Enterprising Culture*, *19*(04), 435–452. https://doi.org/10.1142/S0218495811000842

Bank, N., & Kanda, W. (2016). Tenant recruitment and support processes in sustainability-profiled business incubators. *Industry and Higher Education*, *30*(4), 267–277. https://doi.org/10.1177/0950422216659567

Bergek, A., & Norrman, C. (2008). Incubator best practice: A framework. *Technovation*, *28*(1-2), 20–28. https://doi.org/10.1016/j.technovation.2007.07.008

Bøllingtoft, A., & Ulhøi, J. P. (2005). The networked business incubator—leveraging entrepreneurial agency? *Journal of Business Venturing*, *20*(2), 265–290. https://doi.org/10.1016/j.jbusvent.2003.12.005

Bruckmeier, K. (2009). Sustainability between Necessity, Contingency, and Impossibility. *Sustainability*, *1*(4), 1388–1411. https://doi.org/10.3390/su1041388

Bruneel, J., Ratinho, T., Clarysse, B., & Groen, A. (2012). The Evolution of Business Incubators: Comparing demand and supply of business incubation services across different incubator generations. *Technovation*, *32*(2), 110–121. https://doi.org/10.1016/j.technovation.2011.11.003

Clifton, D. (2012). Sustainable Business: Are We Heading in the Right Direction? *Sustainability*, *4*(4), 586–603. https://doi.org/10.3390/su4040586

De lange, D. E. de, Busch, T., & Delgado-Ceballos, J. (2012). Sustaining Sustainability in Organizations. *Journal of Business Ethics*, *110*(2), 151–156. https://doi.org/10.1007/s10551-012-1425-0

Dovers, S. (2001). *Institutions for Sustainability.* Australian National University.

FIAP. (2021). *Factsheet "Green Startups" in Germany.*

Fonseca, S. A., & Chiappetta Jabbour, C. J. (2012). Assessment of business incubators' green performance: A framework and its application to Brazilian cases. *Technovation*, *32*(2), 122–132. https://doi.org/10.1016/j.technovation.2011.10.006

GEM Global. (2023). *Global Entrepreneurship Monitor 2022/2023 Global Report: Adapting to a "New Normal"*. the Global Entrepreneurship Research Association.

German Startup Monitor. (2022). *German Startup Monitor 2022.*

Gliedt, T., Hoicka, C. E., & Jackson, N. (2018). Innovation intermediaries accelerating environmental sustainability transitions. *Journal of Cleaner Production*, *174*(1), 1247–1261. https://doi.org/10.1016/j.jclepro.2017.11.054

GreenStartupMonitor. (2020). *GreenStartupMonitor2020.*

Hernández, R., & Carrà, G. (2016). A Conceptual Approach for Business Incubator Interdependencies and Sustainable Development. *Agriculture and Agricultural Science Procedia*, *8*(1), 718–724. https://doi.org/10.1016/j.aaspro.2016.02.054

Jardim-Gonçalves, R. (Ed.). (2017). *"Engineering, technology & innovation management beyond 2020: New challenges, new approaches": 2017 International Conference on Engineering, Technology and Innovation (ICE/ITMC) : Conference proceedings*. IEEE. http://ieeexplore.ieee.org/servlet/opac?punumber=8269762

Klofsten, M., Lundmark, E., Wennberg, K., & Bank, N. (2020). Incubator specialization and size: Divergent paths towards operational scale. *Technological Forecasting and Social Change*, *151*(10), 119821. https://doi.org/10.1016/j.techfore.2019.119821

Lafortune, G., Fuller, L., Kloke-Lesch, A., Koundouri, P., & Riccaboni, A. (2024). *European Elections, Europe's Future and the Sustainable Development Goals. Europe Sustainable Development Report 2023/24.* https://doi.org/10.25546/104407

Lamberton, G. (2005). Sustainable sufficiency - an internally consistent version of sustainability. *Sustainable Development*, *13*(1), 53–68. https://doi.org/10.1002/sd.245

Levent, T. B. (Ed.). (2013). *Knowledge commercialization and valorization in regional economic development*. Edward Elgar.

Marques, S. C. d. A., Saba, H., Winkler, I., & Filho, A. S. N. (2022). Business Incubators and Sustainability: A Literature Review. *International Journal of Advanced Engineering Research and Science*, *9*(9), 471–482. https://doi.org/10.22161/ijaers.99.51

NEWTON, J. L., & Freyfogle, E. T. (2005). Sustainability: a Dissent. *Conservation Biology*, *19*(01), 23–32.

Rathore, R. S., & Agrawal, R. (2020). Measuring Performance of Business Incubators: A literature review and theoretical Framework Development. *E-Journal - First Pan IIT International Management Conference – 2018.* Advance online publication. https://doi.org/10.2139/ssrn.3765641

Reinhardt, F. (2000). Sustainability and the Firm. *Interfaces*, *30*(3), 26–41. https://doi.org/10.1287/inte.30.3.26.11667

Seidel, P. (2011). To Achieve Sustainability. *World Futures*, *67*(1), 11–29. https://doi.org/10.1080/02604027.2010.532466

Sharda, A., Goel, A., Mishra, A., & Chandra, S. (2015). Green Entrepreneurship in India: Global Evaluation, Needs Analysis, and Drivers for Growth. In M. J. Manimala &

K. P. Wasdani (Eds.), *Entrepreneurial Ecosystem* (Vol. 22, pp. 261–282). Springer India. https://doi.org/10.1007/978-81-322-2086-2_11

Simatupang, T. M., Schwab, A., & Lantu, D. (2015). Introduction: Building Sustainable Entrepreneurship Ecosystems. *SSRN Electronic Journal*, *43*(3), 476. https://doi.org/10.2139/ssrn.3161598

StartupBlink. (2023). *Global startup ecosystem Index 2023.*

Statista. (2023). *Statista*. https://www.statista.com/statistics/1332120/start-up-investment-volume-germany/#:~:text=Investment%20volume%20in%20startups%20Germany%202015%2D2022&text=In%202020%2C%20investment%20volume%20amounted,compared%20with%20the%20year%20before.

XYZ Lab. (2023). *Top 70 Startup Accelerators & Incubators in Germany*. https://www.xyzlab.com/post/startup-accelerators-incubators-in-germany.