



# Sustainable Entrepreneurial Ecosystem: Systematic Literature Review

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**Abstract.** The entrepreneurial ecosystem is currently emerging as a major topic for researchers. An important question in entrepreneurship research, about how ecosystems can contribute in creating entrepreneurs and the sustainability of their businesses in the future. This article was written using a systematic literature review method that analyzed 60 conceptual and empirical articles. Sequenced 1005 documents sourced from ScienceDirect to explore, analyze, and discuss the contribution of the entrepreneurial ecosystem in the literature on the topic of sustainable entrepreneurship. This literature review classifies six keyword clusters of entrepreneurship ecosystem: entrepreneurship and entrepreneurship ecosystem, entrepreneurship education ecosystem, entrepreneurial university, entrepreneurship learning innovation, digital entrepreneurship, and business ecosystem. Where the entrepreneurship education ecosystem and entrepreneurship university are important ecosystems in the beginning of entrepreneurial sustainability. We suggest the existence of learning innovations in entrepreneurship education to support the achievement of sustainable entrepreneurship and link it to the business ecosystem of service companies, trade, and industry.

**Keywords:** Ecosystem Entrepreneurship · Ecosystem Business · Education · Systematic Literature Review

## 1 Introduction

Over the last few decades, the topic of entrepreneurship has been chosen as the core of the research agenda [1–3] because the source of innovation, competitiveness, and economic development is entrepreneurship itself. [4, 5].

Entrepreneurship does not appear suddenly, is not born partially, but in a very complex system with many stakeholders [6]. The term “entrepreneurial ecosystem” has been used to describe the framework within which each entrepreneur interacts with other actors. Previous research has shown that the success of entrepreneurship depends on the actors who support it in its business [7]. Despite the linkage of the external environment with stakeholder support for sustainable entrepreneurship and the existing literature on “entrepreneurship in context” [8], there are only a few studies that examine the factors for achieving sustainable entrepreneurship [9]. These contextual factors may refer to specific legal, institutional, and regulatory frameworks [10] and historical, cultural,

and socio-economic factors [8]. Thus, it is necessary to study whether there are certain factors that support or hinder the achievement of sustainable entrepreneurship.

Previous research has shown that recognizing and implementing opportunities in sustainable entrepreneurship is more appropriate for entrepreneurs than recognizing unsustainable opportunities [11]. Based on the background, it can be assumed that the entrepreneur creates, recognizes, and exploits sustainable opportunities that require special attention and support in achieving successful innovation and entrepreneurial activity in an ecosystem [12–14]. However, it is still unclear whether the current entrepreneurial ecosystem supports sustainable entrepreneurship [15].

The entrepreneurial ecosystem refers to a set of interconnected elements that drive entrepreneurial development [16]. This includes leadership, culture, capital, markets, human skills, and support systems. An ecosystem of supportive businesses has a positive impact on the economy by creating jobs, boosting household income, and growing the economy [17]. According to [18], the ecosystem entrepreneurial approach combines features drawn from various themes of literature, innovation systems, economic geography, social capital, and networks, with some regions of emerging enterprises. It shows why we continue to drive success.

Thus, the entrepreneurship ecosystem, i.e., “an ecosystem that supports entrepreneurship” [19], emerges with multiple dimensions and attributes that are strongly correlated [16] Across six aspects – Politics, Finance, culture, support, human capital, markets – Each dimension contains several elements. Each entrepreneurial ecosystem is unique and different because the different manifestations of these attributes and the ever-evolving relationships between different actors in each entrepreneurial ecosystem have different configurations and properties and cannot be duplicated in this area [20, 21].

Due to the multiple attributes that comprise any entrepreneurial ecosystem, all of which exhibit different characteristics, and the diverse relationships that take place between them, The social networks that are built within these platforms are very important. According to [22] all ecosystems are composed of networks in all cases; thus, the ecosystem approach resonates well with established business network flows. Several authors demonstrate the importance of social networking among different players in any startup ecosystem [23–25].

The concept of an entrepreneurial ecosystem has recently received attention from researchers, practitioners, and policy makers, but there are still significant differences in results in its conceptual, theoretical basis, and application [26, 27].

However, it should be noted that despite the remarkable growth of the literature on this topic [28] the topic’s transformation into a trend [10], There are still gaps in our understanding of how different actors in the ecosystem influence each other, and from the field, it seems that more studies are needed to focus on the relationship between these actors [16, 28], the need for more studies identifying the conditions for successful ecosystem formation and for further study in local contexts, such as cities [29] and in developing countries [30].

Sustainable entrepreneurs need a different ecosystem in providing support from the traditional entrepreneurial ecosystem. There are two reasons why research on the entrepreneurial ecosystem should be carried out and see its relationship with sustainability research. First, neglect of the sustainability aspect of the evolution of entrepreneurial

practice leads to the assumption that businesses are neglecting their responsibility to the environment and society [33].

It is important for communities and stakeholders to systematically support the development of sustainable entrepreneurship [13, 14]. Second, the existing literature pays very little attention to the role of sustainable entrepreneurs in the entrepreneurial ecosystem [15, 34]. So this research was conducted to review studies on the entrepreneurial ecosystem in achieving entrepreneurial sustainability.

## 1.1 Entrepreneurship

Entrepreneurship is a profitable process, and only success can promote economic and social development. That said, successful startups have a significant impact on the startup ecosystem. A startup's success largely depends on its ecosystem - the supportive environment it creates. Public leaders and policymakers have an obligation to design and implement a cycle of virtuous behavior. Successful economic development depends on the success of entrepreneurs, or the ability of these individuals to create and manage successful businesses. [35].

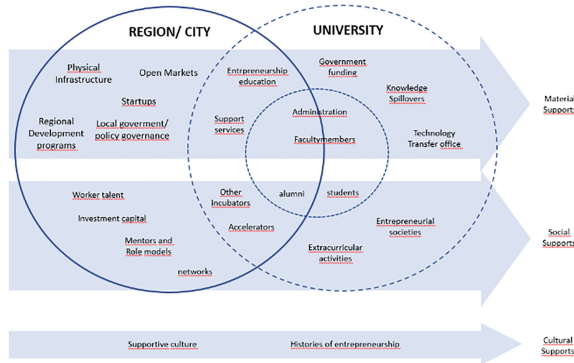
## 1.2 Ecosystem Entrepreneurship

The entrepreneurial ecosystem is a model or strategy for economic development by promoting entrepreneurship, small business growth and innovation [36]. Defining a sustainable entrepreneurial ecosystem requires the intervention of various factors such as politics, finance, markets, culture, human capital and support [16]. The six dimensions proposed by D. Isenberg constitute an independent entrepreneurial ecosystem.

The second dimension concerns the human resources (humans and educational institutions) to implement an ecosystem that promotes entrepreneurship. Achieving the HR goals described in the Isenberg model requires adequately knowledgeable HR individuals with experience in organizational development, structural design, system control, professional committees, and expert advisory board membership. In addition, educational institutions need to take on their responsibilities in the development of human resources in a successful ecosystem.

Financial capital and funds are important to entrepreneurs in the third dimension. To start a business, you'll need private equity funds, venture capital funds, public capital markets, microfinance, angel investors, and debt financing. These may be available at the pre-sale (stage zero) stage. The fourth dimension of entrepreneurship has to do with the market in which the entrepreneur is operating. The presence of potential customers who are willing to speak to entrepreneurs and do business with entrepreneurs in cash is critical to a favorable startup ecosystem.

The fifth dimension involves an ingrained culture in which society tolerates the honest mistakes and honorable failures of entrepreneurs and embraces conflicting mindsets and risk-taking attitudes. The last dimension has to do with the need for ecosystem support from NGOs, infrastructure and professionals. Supporting nonprofits that help entrepreneurs connect, promote products, and forge alliances with their entrepreneurial goals can further enrich a thriving ecosystem. The Boulder paper states that thriving ecosystems have four characteristics: (a) Entrepreneur-led; (b) Inclusive and welcoming



**Fig. 1.** Ecosystem model in Region and Universities adopted by [18, 38]

to all; (c) A long-term (at least 20-year) commitment to the ecosystem by those involved; (d) There are many collection opportunities such as many events [37].

The startup ecosystem is made up of various people or organizations other than potential business owners or entrepreneurs who help them succeed in their businesses. These people or organizations are called stakeholders and can include support organizations, large corporations, research institutes, universities, service providers, funding organizations, governments, private foundations, investors, the private sector, social leaders or employee representatives. The entrepreneur himself is part of the ecosystem, but he is not the driving factor. An ecosystem is a network that works together and consists of many parts.

Based on [38] and Miller and [26], the regional/city and university ecosystems are considered as two interrelated parts of the business environment [18] was used to define an entrepreneurial ecosystem in a region/city consisting of companies, startups, incubators/accelerators and other actors, regional development organizations, investors, and various support services and crimes enabled by these organizations, while the university's core elements include faculty, alumni, students, and administration. As such, university entrepreneurs have influence across a much broader ecosystem than is generally recognized in the business incubation literature (for example, not just a source of innovation to commercialize). Figure 1 shows actors in ecosystems in regions/cities and universities.

### 1.3 Sustainability Entrepreneurship

Sustainable entrepreneurship is an emerging research stream [39–41]. Sustainable entrepreneurship is defined as “the discovery, creation, and exploitation of opportunities to create goods and future services that sustain natural and/or communal environments and provide development benefits to others” [11] This sustainable entrepreneurial activity is generally consistent with the Sustainable Development Goals [42]. Sustainable entrepreneurship is considered an essential contributor to the transition to a sustainable economy [43]. This includes entrepreneurial activities that include the economic, ecological, and social dimensions of sustainability as part of the core business model [14].

## 2 Method

This study used a systematic literature review (SLR) on the entrepreneurial ecosystem as the methodology. SLR research methods are widely distributed across all disciplines and research fields and have experienced tremendous growth and development in recent years [44, 45]. According to [45], A core feature of SLR is its thoroughness and standardized approach, which on the one hand identifies all empirical evidence that meets predetermined criteria to answer the research question, and on the other, minimizes the scope of the study. Influence research and ensure research reproducibility. SLRs show different characteristics depending on the type of topic studied (mature or new) (especially the total number of articles considered, purpose and contribution to the literature) [44–46].

Therefore, in this study, SLR was carried out with bibliometric techniques (combining bibliography and analysis of the emergence of words together) on the theme of ecosystem entrepreneurship, research topics that emerged. The keyword used in searching for literature sources is “ecosystem entrepreneurship,” which is searched through ScienceDirect and Scopus with the help of harshing software in the time range from 2011 to 2022. There are three research questions in this literature study, namely; “Who are the actors who play an important role in the entrepreneurial ecosystem?”; “What is the function of actors in each ecosystem?”; “What is the role of the entrepreneurial ecosystem in sustainable entrepreneurship?” The inclusion criteria for the literature review used are; articles published in 2011–2022; contains the keyword ecosystem entrepreneurship or related keywords; type of research article; and open access. At the same time, the exclusion criteria for unused articles are incomplete meta-data and do not use English. The process of sorting articles is described in the prism model as shown in Fig. 2.

Then the 60 articles were selected based on their abstracts before being analyzed bibliometrically using VOSviewer software (version 1.6.13), which was created specifically for bibliometric mapping [47]. The first analysis applied using VOSviewer is to

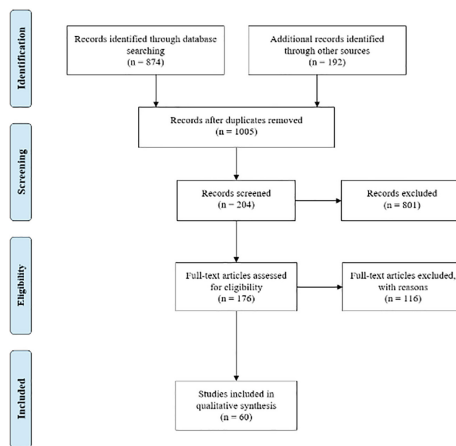


Fig. 2. Prisma Model

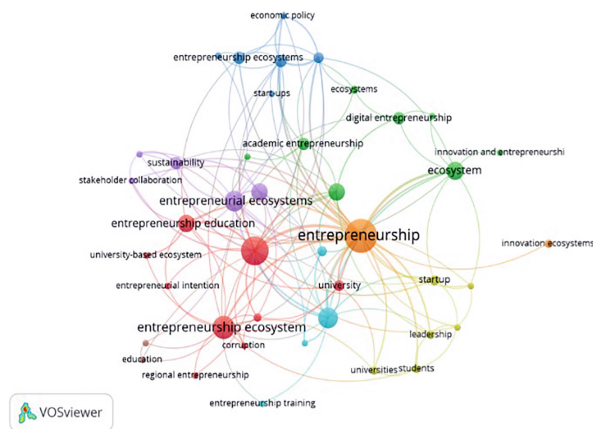
combine all bibliographic documents, then create a map based on the previously collected bibliographic data in RIS format. Next, choose Bibliographic coupling as a type of analysis, with documents as the unit of analysis and full count as the calculation method, has been shown to show better results than bibliographic coupling [47]. To improve the quality of the results of SLR research, the collection of articles certainly needs to be screened again to ensure the quality of the articles analyzed and recommended [44]. Due to the increasing interest in the entrepreneurial ecosystem domain, as evidenced by several studies, this study only applies the criteria for grouping documents with a minimum of two citations.

The goal of this study was to strengthen the insights revealed by the analysis of bibliographic coupling documents, namely, to identify the most important trends on the topic of the entrepreneurship ecosystem, a keyword co-occurrence analysis was carried out.

### 3 Result

Based on a literature search from ScienceDirect using the keyword “ecosystem entrepreneurship” from 2011-to 2021, 60 articles were sorted by year, related keywords, abstract, and open access. Figure 3 shows resulted from processing 60 RIS files using VosViewer based on co-occurrence:

The mapping of the 60 articles resulted in several related keywords and keyword sorting was carried out to form several clusters; the clusters formed from 60 articles with related keywords are shown in Table 1.



**Fig. 3.** Vosviewer mapping results. Source: Vosviewer, 2022 (data processed)

**Table 1.** Keywords and Clusters related to Ecosystem Entrepreneurship

Cluster	Keywords
Entrepreneurship and entrepreneurial ecosystem	Entrepreneurial Ecosystem
	Entrepreneurial Intention
	Entrepreneurship Ecosystem
	Stakeholders
Entrepreneurship Education Ecosystem	Academic Entrepreneurship
	Students
	Ecosystem
Entrepreneurial Universities	University
	University-based Ecosystem
Entrepreneurial Learning toward Entrepreneurial Intention	Innovation
	Start-up
	Universities
	Leadership
	Network
	Human Capital
Digital Entrepreneurship	Digital
	Technology
Ecosystem Business and Innovation Ecosystem	Social Entrepreneurship
	Stakeholders Collaboration
	Business Ecosystem
	Sustainability
	Sustainable Entrepreneurship

Source: VosViewer (data processed), 2021

## 4 Discussion

### 4.1 Entrepreneurship and Entrepreneurial Ecosystem

Entrepreneurship, which Shane and Venkataraman understand that the key to realizing the transformation process envisioned by them is the discovery, evaluation, and exploitation of opportunities to create goods and services in the future. Understanding the importance of supporting ecosystem actors from an entrepreneur's point of view, [48] have developed An analytical model was developed, arguing that the entrepreneurial ecosystem is supported by eight main pillars.

Both in the political and academic fields have identified entrepreneurship as a key driver of transformation towards a sustainable economy [49]. Entrepreneurship is

not only about coming up with new products and services, it's also about questioning established ways of creating value in the market. By redesigning these processes, entrepreneurs can increase efficiency and sustainability.

To be successful in helping entrepreneurs achieve their goals, an ecosystem must include a variety of different actors and institutions [50]. This will provide entrepreneurs with the skills, knowledge and expertise they need to explore and develop new ideas. The entrepreneurial ecosystem is largely self-regulating and driven by an entrepreneurial culture (van Lancker et al., 2016; Ylimartimo, 2018) this culture is characterized by creativity, openness, innovation and a positive attitude towards risk. Entrepreneurial ecosystems reduce the barriers to entry for entrepreneurs, making it easier for them to develop their companies [51], they also offer opportunities to open up the innovation process [52].

The positive impact of the entrepreneurial ecosystem is not only from important actors in the entrepreneurial ecosystem (such as public funding and venture capital), but the entrepreneurial ecosystem itself. The more interrelated actors are, the more diverse abilities are available [53–55].

Based on the research results of [56], creation is the skill of entrepreneurs and project managers to plan and realize successful business models that create new value chains and produce products that have added value. These models are successful in the world market. There are several benefits to the ecosystem – the many opportunities to explore, the availability of sufficient venture funds, and the attractiveness of the area's educated workforce [57].

However, to deliver on its promise, the ecosystem needs to focus on value creation, rather than educating its young entrepreneurs and developing a tolerance for willful failure. There is also a need to solve India's unique problems and ensure the start-up movement is inclusive.

## 4.2 Entrepreneurial Universities

[58] analyzed that universities have recently gained a leading role in the study of entrepreneurship as practitioners and theorists have asked how entrepreneurship education works. Note that entrepreneurship universities not only need to create new science and technology companies, but also make efforts to build entrepreneurship and entrepreneurship as one of the pillars. According to [59] entrepreneurship Entrepreneurship University sees itself as a university that simultaneously carries out three core activities: education, research and entrepreneurship, while at the same time providing an appropriate atmosphere for the university community to explore/exploit ideas, and [60], expects universities to then contribute to the generation of innovative businesses.

In line with [61] universities are Actors in the entrepreneurial ecosystem who have made a significant contribution to the generation of knowledge, development of new technologies, and the further return to society are becoming more relevant in recent years.

For [62, 63] universities make an important contribution to the main role in contributing to social and economic development by providing a pool of skilled workers and knowledge, and by encouraging entrepreneurship [64]. The contribution of universities to the socio-economic transformation of cities/regions/countries raises intersections



that legitimize their important role in the entrepreneurship and innovation ecosystem [65].

Criteria considerations used to identify entrepreneurial universities: (i) promotion of entrepreneurial culture throughout the university community, (ii) independent efforts to develop entrepreneurial ecosystems and encourage innovation/entrepreneurship initiatives, (iii) social and economic impact on the region/nation, (iv) sustainable transition processes and (iv) selected socio-economic actors in decision-making, activities and goals [66].

According to [62], like other developing countries, universities play an important role in the entrepreneurial innovation ecosystem, strengthening political strategies to stimulate economic development through innovation and entrepreneurial initiatives. The core activities of an entrepreneurial university (teaching, research, and transfer/commercialization of knowledge) are oriented to change the mindset, intentions, and actions of the community (students and academics).

Conceptually, for [67] System includes individuals, organizations, industries, and a collection of environmental elements such as leadership, dynamic skills, culture, capital markets, networks, and open-minded customers that gather in complex ways. But in the university context, the university ecosystem of entrepreneurial innovation is integrated by educational programs, infrastructure (incubator, research park, Technology Transfer Office, Entrepreneurship Office, Employment Office), university regulations (regulating entrepreneurship, property rights), university culture (role models, entrepreneurial attitudes), and relations with governments, investors, industries and other socio-economic agents [68].

According to [62, 69] ecosystem support actors are the university community (students, graduates, scholars, staff) in identifying, developing, and commercializing innovative and entrepreneurial initiatives.

### 4.3 Entrepreneurship Education Ecosystem

Entrepreneurship education has a systemic character and is the result of a complex set of actors and variables working together to support commercialization [63].

Entrepreneurship Education Ecosystems can focus on: 'why entrepreneurs act' (i.e., motivation), 'what needs to be done (i.e., knowledge competence), 'how to do it (i.e. entrepreneurship and management competence), 'who should we know' (i.e., network competence), and 'when to act' (i.e., experiential competence). The main focus of Entrepreneurship Education is to increase the dynamic human capital assets of students, in particular, their competencies [70] required to engage in the entrepreneurial process.

Entrepreneurship education is one of the important components that are economically feasible in the commercialization of products. [71, 72]. Understanding how entrepreneurship education emerged, what are the motivators and barriers the challenges researchers face as they move from the early stages of early ideas to the commercialization of viable products have important implications for recognizing the skills and abilities that must be properly developed [69, 73].

[66] The project required changes in the relationships between different actors, in particular, graduates and entrepreneurs. Supporting elements should be designed to facilitate teacher training in areas such as detecting business opportunities and promoting student entrepreneurship [74] argues that the efficacy of the entrepreneurship education ecosystem depends on the interconnectivity of its constituent elements and their collective ability to provide information and resources that are critical to the success of the firm [75].

#### 4.4 Entrepreneurial Learning Innovation

With innovation and support in academics and entrepreneurship, attracting the attention of several government agencies to encourage partnerships to increase innovation. [76–78]. The transformational model and process required so that universities can be characterized as entrepreneurs is suggested by [78].

Recent discussions indicate the need to expand the role and mission of universities aiming at the development of user-related innovations - civil society - and to engage universities in social-environmental actions and efforts aimed at contributing to the promotion of sustainable development [79]. Concerns about the role of universities as agents of community development seek to emphasize that universities play an important role in promoting innovation and entrepreneurship and interacting with society. Facts that characterize engaging universities at the local level in social and environmental protection efforts [77].

#### 4.5 Entrepreneurial Learning Toward Entrepreneurial Intention

The ambitious goal of offering a new program to acquire Entrepreneurial skills have been developed through various co-curricular activities. Concept-based co-curricular activities of “University-Based Entrepreneurship Ecosystem” developed by [80]. This community is dedicated to helping people develop the necessary skills and knowledge needed to become successful entrepreneurs. This includes creating curricula, developing co-curricular activities, and conducting research.

There is a lot of criticism of entrepreneurial learning, but there is little evidence to support whether it actually helps students become more likely to become entrepreneurs [81]. Researchers have addressed this question and now focus on how aspiring entrepreneurs should study in higher education.

Entrepreneurial learning and student experiences will strengthen their entrepreneurial intentions. This study suggests that teaching entrepreneurship should focus on providing students with real-world experience and action. The purpose of this approach is to help students develop a greater sense of purpose and greater entrepreneurial potential by engaging them in a meaningful learning experience [82].

[83] his research found that education and training typically aren't suited for future entrepreneurs, because they focus on concepts that are useful for a particular field of study, but not necessarily applicable to all businesses. Instead of the professors teaching these programs, the facilitators should take on that role of the learning process allows future entrepreneurs to develop a completely different entrepreneurial mentality. The development of educational support and entrepreneurial competence supports the growth

of entrepreneurial intentions in students. The literature suggests that people who see themselves as having more entrepreneurial skills are more likely to feel they can create their own company [84]. The revised literature discusses the main characteristics of new students and graduate/academic entrepreneurs in various higher education systems. In relation to student start-ups, entrepreneurship program design Graduate career patterns influence the entrepreneurial mindset/intentions/actions of students [64].

#### 4.6 Digital Entrepreneurship

Digital entrepreneurship is a type of entrepreneurship that focuses on using technology to create or run a business. According to [85], a unique feature of digital entrepreneurship is that digital entrepreneurship has three interrelated types of entrepreneurship: business entrepreneurship, knowledge entrepreneurship, and institutional entrepreneurship. It is composed of Various features and functions have allowed information technology has allowed for considerable flexibility in the field of digital entrepreneurship, allowing for a variety of innovative and unique business models. These features have helped make entrepreneurship more efficient, which has led to the creation of many jobs [86].

The world's top companies, such as Google, Yahoo, eBay, etc., take a systems view of digital entrepreneurship; that is, they have their own special entrepreneurial ecosystem that is well established and entrenched. The system input is the idea and the output is entrepreneurship. So, it is important to consider the digital entrepreneurship ecosystem, which is made up of different people and levels and note that these components are interrelated and continuous. The definitions presented offer a comprehensive framework for future studies on the digital entrepreneurship ecosystem, as well as the different characteristics of systems such as e-commerce marketplaces, crowdfunding platforms, crowdsourcing initiatives, competition platforms, etc. [87].

[88] There are a variety of types of entrepreneurial projects that require the implementation of a technology entrepreneurship roadmap. These can include independent projects, academic projects, and corporate projects. This article discusses the impact of digital technology and collective intelligence on technological entrepreneurship and the processes of creating new companies. Entrepreneurship driven by the innovative potential of large groups of people who contribute to the development of innovative technology-based solutions.

The digital entrepreneurship ecosystem is a network of individualities, associations, and technologies that support and help grow digital entrepreneurship. Since ecosystems can grease the integration of coffers and supporting rudiments outside the enterprise position, digital entrepreneurship ecosystems are critical to the success of digital entrepreneurship [64]. Explore key aspects such as motivation, cultivating and disseminating knowledge, experimenting with business models, building a team and providing specialized human resources. identify components of the entrepreneurial ecosystem, with a focus on digital entrepreneurship as a series of user-driven entrepreneurial activities. and agents [26].

[89] the comes about give prove of a assortment of unmistakable and intangible resources supporting computerized business. Within the travel of creating its computerized developments, companies have ended up buyers of innovative developments that are drawn and esteemed from their development environment through different connections.

In specific, it obtains intangible resources, such as specialized and industrial information, preparing, upgrades within the generation prepare, and assorted shared encounters through organizing with accomplice companies in joint wanders. Communities, commensal partners of development living spaces, and differing performing artists within the development environment, counting industry pioneers, national industry affiliations and entrepreneurship-focused non-governmental organizations.

As companies advance and move their vital objectives towards being more computerized, there's a more noteworthy require for more resources from environment venture advancement. Hence, the more a company moves towards more prominent digitization of its products/services and the business as a whole, the more embedded it is in the multiple relationships with external actors in its innovation ecosystem, and the more important these relationships become to shape digital entrepreneurship.

Overall, we can refer to some of the features of digital entrepreneurship as follows [90]; speed up speed; improve accuracy; eliminate some administrative corruption; provide the possibility of full-time employment, and provide the possibility of remote cooperation; Reduce system or organizational costs. [91] Digital Entrepreneurship involves venture capital and business transformation by creating digital technologies and effective ways of utilizing these technologies. Currently, many countries are making digital entrepreneurship an important part of the development of the digital economy, and the need for an understanding of digital entrepreneurship.

In the world of tomorrow's technology, everyone can be closer to the standard of this ecosystem through the ecosystem of entrepreneurship digital company and moves to follow the direction of the world community to produce digital entrepreneurship. Developing countries that do not have a systems view of digital entrepreneurship will face many limitations. So, if governments, companies, or organizations base their digital entrepreneurship development on ecosystems, there will be progress in the field of digital entrepreneurship.

By leveraging the network of ecosystems, these companies turn into hyper entrepreneurs and can create several hundred jobs and receive great value. The importance of ecosystem actor support to entrepreneurship has a significant impact on the success of businesses. The proposed ecosystem will improve the quality of life, reduce social anxiety, and lead to economic growth and development. It will also activate efficiency.

#### **4.7 Ecosystem Business and Innovation Ecosystem**

Business ecosystems focus on the key players in a given industry and their relationships with each other. [92]. They typically show how these companies work together to create new products or services [93]. Business ecosystem research centers on understanding how relationships between different players in a business ecosystem work and how those interactions create value. Much of the research has focused on how focus actors, such as individual ecosystem actors, can capture value. The business ecosystem literature identifies various ways in which businesses can capture value (e.g. through new business model innovations) [64, 94, 95].

[96] New startup, infrastructure provider, or intermediary, you can help increase ecosystem entrepreneurship by helping others start and grow their businesses. They

can provide application developers with the necessary tools and support to get their applications into the commercial market.

However, the ecosystem is still in its early stages, so the current actors are not able to identify all the potential partners. Ecosystems create value chains as the different activities of each actor affect one another and entrepreneurship as a whole. Actors can make contracts that can improve cooperation and data distribution between them, without any restrictions. The data quality is low, because the contracts' format is difficult for actors to use. Providers must make sure that actors have the tools they need to use the data and understand it.

The entrepreneurial strategies and activities of an ecosystem can create positive feedback that can lead to innovation [97]. The various business ecosystems in which the company operates such as, Orchestra, Creative Bazaar, Jam Central, and MOD Station each play an important role in their success and failure. The impact of this dynamic interaction in the business ecosystem has a major impact on the success of the organization. Creating, designing, managing, and leveraging this ecosystem requires entrepreneurial skills coupled with strategic thinking. This thinking is evident from how fast and strategic actions are, as well as creativity in the deployment and use of resources.

However, the outcome of this process is difficult to predict and can take time to materialize. The business ecosystem provides its members with the opportunity to cooperate and compete simultaneously through innovative, sustainable practices.

The business ecosystem provides its members with the opportunity to collaborate and compete simultaneously through innovative solutions. Different ecosystems have different organizational and business models, which affects the strategic choices that companies make. This affects the way new businesses can create and change the competitive landscape. The changes that come with competition spur innovation, which in turn alters the ecosystem itself. Companies that are able to take advantage of an ecosystem of innovation, entrepreneurship and strategic thinking are likely to be successful [97].

According to [98] The concept of ecosystem emerged as a central element to enable social interaction among a wide and different community of actors as well as to promote the social and economic valorization of knowledge shared in networks and resolved for the growth of interested communities.

Furthermore [99] say interactive relationships with complements, suppliers, and customers can enhance the ability of a microfinance organization to support commercial transactions, manage financial capital, and educate customers, thereby increasing its ability to facilitate economic development. Companies that are able to use the cycle of innovation, entrepreneurship, and strategic thinking in their ecosystems are likely to be successful.

In a business ecosystem, actors work cooperatively and competitively to create new products, meet customer needs, develop shared capabilities around innovation. There are three critical success factors of a business ecosystem: resilience, productivity, and the creation of specialized markets [100]. Whereas, in the business ecosystem literature, "large" companies (e.g., Microsoft, Google, Cisco, and Walmart are often identified as ecosystem orchestrators. These large companies often have a lot of power in the

ecosystem; can be said that they set the rules for participation and determine or provide shared technical infrastructure [101].

The business ecosystem literature has broadened its view of the survival and growth of ecosystems, to focus on the realization of goals in developing countries. [102, 103]. An ecosystem connects orchestras, auxiliaries, and users. The platform offers a variety of free services and products that make it attractive to users Network Create a fruit. (Ren & Shi, 2018).

In the business and innovation ecosystem, a company's competitive advantage is influenced by its ability to monitor and react to internal and external changes. This dynamic capability affects its ability to stay ahead of the competition [104]. The innovation ecosystem focuses on developing new innovations or jointly realizing a valuable proposition. The innovation ecosystem centers around research on its emergence and evolution, governance, value propositions, relationships and business models [105].

The theoretical approach of Hyytinen underscores the overlapping functions between the institutional fields of universities, industry and government in innovation, the interaction between them in promoting innovation, and the important role of government in facilitating this interaction [106]. Whereas [107] describes the innovation ecosystem as "a collaboration between companies and their customer offerings to create a coherent solution. The diversity of the innovation ecosystem is divided into four main types of indicators: framework conditions, investments, innovation activities and impact.

Based on research [108] Ecosystem innovation stems from the nonlinear complexity typical of the knowledge economy, where new value is interactively co-created in a collaborative network. This is why the complexity of these types of challenges and the inherent uncertainty of finding solutions when envisioning innovation to solve societal problems has increased the need for innovation systems to move towards ecosystem-based design.

So according to [109], the diversity of the national innovation ecosystem is determined using four main types of indicators: framework conditions, investments, innovation activity and impact. New products, meet customer needs and ultimately drive the next round of innovation.

## 5 Conclusion

The entrepreneurial ecosystem is a general context that can help promote entrepreneurship in a specific area. The horizontal network consists of customers and suppliers, while the vertical network consists of competitors and complementaries. There are many helpful resources available to help businesses get started and grow sustainably. Consultants, incubators, and other organizations can provide valuable resources and support. Research organizations (research centers, laboratories, etc.) conduct research in order to improve the quality of life for all people.; and business consortiums (operating enterprises, trade unions and associations, etc.) I'm not sure if I should do this. I am not sure if I should do this.

The entrepreneurial ecosystem seems to be made up of both physical and non-physical elements. Universities are perhaps the most frequently identified actor/institution in the entrepreneurial ecosystem after entrepreneurs themselves, and

most research has focused on universities as the center of that ecosystem [110–113]. Universities are active in the entrepreneurial ecosystem even where they are not considered central [114]. However, all universities are not equal [115, 116]. The most useful type are universities that serve as institutional “nodes” spanning boundaries. This is due to the different regional innovation systems in which these ecosystems are embedded. Various universities have different effects on technology transfer offices, university incubators, and collaborative research centers [63].

The discussion of the seven clusters noted that the support of the entrepreneurial ecosystem is not only important for entrepreneurial activity as a whole but for sustainable entrepreneurship in particular [117, 118]. It can be concluded that the understanding of how the entrepreneurial ecosystem becomes sustainable is based on four aspects that drive a sustainable entrepreneurial ecosystems.

Based on data from several literatures, this study has identified the main contributors to the entrepreneurial ecosystem, namely education and innovation. Where has paid special attention to the processes that create and maintain these ecosystems. Basically the purpose of the entrepreneurial ecosystem is its own innovation, through innovation, this will provide support to the existing entrepreneur ecosystem and resources. Indeed, the existential goal of the entrepreneurial ecosystem is its own renewal, through the formation of new, These include the support of the ecosystem and the resources of existing and existing entrepreneurs. Mature ecosystems will not decline, as new industries replace older ones in localized ecosystems. It is recommended that further research focuses on learning innovation, especially on learning approaches that explain the roles and functions of actors in the business ecosystem and develop learning materials and materials for that approach. In entrepreneurship education which is a driving factor in the entrepreneurial sustainability ecosystem.

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