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# Welcome to the (Entrepreneurial Ecosystem) Jungle

*Navigating the Stockholm Entrepreneurial Ecosystem*

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## **Abstract**

In recent years, the Entrepreneurial Ecosystem literature has gained traction in Entrepreneurship circles, however, it has been argued that the phenomenon lacks proper empirical research. Consequently, this thesis aims to contribute to the Entrepreneurial Ecosystem field by conducting an empirical qualitative study examining Stockholm using the EE literature adapted by Wadichar et al. (2022) as a theoretical framework. The interview sample consists of public, and private actors that, in different ways, contribute to facilitating entrepreneurial activity in Stockholm. Through this study, we were able to identify that even though Wadichar et al.'s (2022) adaptation can be used to a large extent to explain the entrepreneurial hub that is Stockholm, contextual- and personal factors as well as events, are missing from the model. The empirical data also found some challenges in regards to Stockholm's Entrepreneurial Ecosystem hence, the study suggests some practical implications aimed at both policy and other elements of the Stockholm ecosystem to enhance its functionality.

**Keywords:** Entrepreneurship, Entrepreneurial Ecosystem, Stockholm

**Supervisor:** Rhiannon Pugh

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## List of Abbreviations

EE	Entrepreneurial Ecosystem
SME	Small & Medium-sized Enterprises
VC	Venture Capital
ROI	Return on Investment

## Glossary

Actor	Active participant in an action or process
Entrepreneur	A person who sets up a business or businesses, taking on financial risks in the hope of profit
Entrepreneurial activity	The enterprising human action in pursuit of generation of value.
Angel investor	A high-net-worth individual who provides financial backup for small startups or entrepreneurs, typically in exchange for ownership equity in the company
Deep tech	A classification of organizations that work with technology that is based on tangible engineering innovation or scientific advances, and discoveries.
Sustainability tech	Refers to clean energy sources and systems that minimize environmental impact.
Incumbent firm	Businesses already established in each market or industry.
Entrepreneurial recycling	The fluidity of resources like people, skills, knowledge, and capital that move between different firms within an ecosystem.
Bootstrapping	The process of using only existing resources, such as personal savings, personal computing equipment, and garage space, to start and grow a company.
Incubator	A program that gives very early-stage companies access to mentorship, investors, and other support to help them get established.
Accelerator	A program that gives developing companies access to mentorship, investors and other support that help them become stable, self-sufficient businesses.
Science park	An area devoted to scientific research or the development of science-based or technological industries.
Holding company	A company created to buy and own the shares of other companies, which it then controls.
Venture capital	Capital invested in a project in which there is a substantial element of risk, typically a new or expanding business.
Return on investment	A performance measure used to evaluate the efficiency or profitability of an investment or compare the efficiency of several different investments.

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## 1. Introduction

Stockholm, the vibrant capital of Sweden, has in recent years emerged as a hub for entrepreneurial activity, earning a reputation as the ‘unicorn factory’ with companies such as Klarna, Kry, and Skype in its portfolio (Björner & Zetterberg, 2019). From fintech to biotech, Stockholm’s ecosystem is as diverse as it is dynamic, with a wide range of cutting-edge companies calling the city their home.

Sweden has emerged as one of the leading economies in both Europe and the world with its strong business climate, focus on innovation, and great language capabilities (OECD, 2018). The nation’s development has been greatly influenced by its free-market economy and highly developed educational system as well as the great governmental support for innovation and growth through various agencies and infrastructure investments (Doing Business, 2020; Balawi & Ayoub, 2022). They spend over 3% of their GDP on innovation and research (SCB, 2021) and in recent years, Sweden has had the highest number of innovative businesses valued at over 1 billion USD in Europe (Steigertahl & Mauer, 2023).

Innovation-driven and productive entrepreneurship are the backbones of job creation, increasing competitiveness, and eventually economic development (Wennekers et al., 2005). Numerous studies have been made throughout the years aiming to understand the elements behind successful entrepreneurs and Entrepreneurial Ecosystems. Although a lot has been learned, there is yet much to uncover about the way these evolve, operate, and impact the wider economy. Hence, this paper seeks to investigate and deep-dive into the existing literature regarding Entrepreneurial Ecosystems with the hopes of adding new dimensions to the existing empirical research conducted on the subject, with Stockholm as the focal point.

Whether you are an entrepreneurship researcher, an aspirational business student, or someone interested in the latest developments in the business world, this paper will provide new insightful perspectives on Entrepreneurial Ecosystems as well as the Silicon Valley of Sweden - Stockholm, and what makes it tick. The structure of the thesis reads as follows. In the second part, we conduct a literature review by looking at related fields and previously conducted literature related to Entrepreneurial Ecosystems. Based on the current gaps in the literature we formulated our research questions. In the third part, we establish our theoretical framework which will be used for the remainder of the paper before setting the scene for the case that is

Stockholm in part four. In the fifth part, we go through the methodological approach used to answer our research questions. Subsequently, we present and analyze our empirical findings before discussing them in relation to our theoretical model in part seven. Part eight concludes and answers the research questions. Lastly, the suggested future research and limitations of the study will be presented.



## 2. Literature Review

*This chapter aims to present literature related to the Entrepreneurial Ecosystem as well as a basis for the theory itself together with different researchers' conceptual definitions. Furthermore, prior research related to Stockholm as an innovation hub will be presented.*

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### 2.1 Related Literature to the Entrepreneurial Ecosystem

The current conceptualization of Entrepreneurial Ecosystems can be regarded as an outcome of advancements in a number of interconnected fields of literature, primarily focusing on the contextual aspects of entrepreneurship. This includes research related to industrial districts, national systems of innovation, learning regions, the Triple Helix, regional clusters, and regional innovation systems (Wurth et al, 2022; Spigel, 2017; Lopez-Rubio et al, 2020); As well as research on entrepreneurship context, entrepreneurial environments, economic geography, social capital, networks, and business ecosystems (Wurth et al, 2022; Spigel, 2017). Marshall's (1920) studies relating to the factors that facilitated the growth of businesses in certain regions, commonly referred to as industrial districts, can be seen as the early roots of what has later been developed into the concept of Entrepreneurial Ecosystems. Scholars have since then developed and built upon Marshall's initial concept, first through early conceptualizations on national systems of innovation, learning regions, and the Triple Helix model, which later on led to the more commonly known research on regional clusters, and regional innovation systems (Wurth et al, 2022).

Although the above-mentioned approaches differ in their goals and methodologies, they are unified by the shared belief that external factors outside the boundaries of the firm, rather than within an organization, play an important role and contribute to the competitiveness of firms and new ventures (Spigel & Harrison, 2018; Spigel 2017). Additionally, the related research leading up to the Entrepreneurial Ecosystem literature emphasizes three important regional aspects which contribute to elevated growth and entrepreneurship (Spigel 2017):

- (1) Mutual cultural understandings and an environment that eases interfirm collaboration as well as highlights firm mobility and knowledge sharing.
- (2) Social networks which enable knowledge spillover between universities and firms, connect financiers and entrepreneurs, and increase awareness regarding entrepreneurial opportunities.

- (3) Universities and governmental policies that support and reinforce the culture and networks by abolishing institutional barriers, funding support programs, and training skilled entrepreneurs and workers.

In contrast to these affiliated ideas, the Entrepreneurial Ecosystem places the entrepreneur at the center of attention and focal point, instead of the entire firm. The approach further focuses on the relational, institutional, and social aspects of the ecosystem actors. (Stam 2015; Brown & Mason, 2017; Alassar, 2021). Furthermore, it is an important concept currently adopted by policymakers where, for example, the OECD has been working with Entrepreneurial Ecosystems by developing indicators to measure entrepreneurship as well as by organizing workshops on the topic (Mason & Brown, 2014). It should be noted that the Entrepreneurial Ecosystem is not the only ecosystem idea that has become popular, other related ideas such as Innovation Ecosystems and Business Ecosystems have also popped up. However, in this thesis, we are focused on the Entrepreneurial Ecosystem due to its popularity and focus on the entrepreneur as the key actor.

## 2.2 Previous Research on the Entrepreneurial Ecosystem

### 2.2.1 Basis for the Theory of Entrepreneurial Ecosystems

Entrepreneurs and entrepreneurial activities are critical to economic development (Audretsch et al., 2007), and they do not exist in a vacuum but rather are products of a multifaceted, linked system (Cowell et al., 2018). The phrase "Entrepreneurship Ecosystem" was introduced to describe the nuanced interactions between startups, entrepreneurs, and other stakeholders and the structures which govern these relationships (Audretsch et al., 2007).

Isenberg (2010) can be argued to be one of the founding, and most commonly known, researchers within the topic of Entrepreneurial Ecosystems<sup>1</sup> who aimed to address some of the most prominent problems which governments stumble upon when trying to recreate the next Silicon Valley; Confronting the inadvertent undermining of entrepreneurs' ambitions and aversion of finances, lack of public priority, and ambiguity of strategic objectives related to entrepreneurship. Isenberg (2010) additionally presents an evaluating framework used to assess the elements in the EE to enable governments to know where to focus their efforts (see

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<sup>1</sup> From now on also referred to as EE

Appendix 1). On a similar note, Stam (2015) disclosed that the focus of regional policies has shifted from quantity of entrepreneurship to instead boost quality; A transition where the EE approach is a helpful framework. This is further stressed by Isenberg (2010) through the “law of small numbers” which underlines that a few successful entrepreneurial ventures can have a major positive impact on the ecosystem as a whole, especially in terms of spillover effects. Role models, serial entrepreneurs, angel investors, venture capitalists, board members, advisers, and mentors are just a few examples of the beneficial spillover effects that can occur.

Other researchers, such as Brown & Mason (2017) and Balwi & Ayoub (2022), highlight the basis for the Entrepreneurial Ecosystem theory by clarifying that the success of entrepreneurship does not only depend on firm-specific attributes but also depends on the context within which they develop and operate. Hence, the significance of entrepreneurship on economic results across nations is more reliant on the institutional context than the number of present entrepreneurs (Lafuente et al., 2020). Additionally, as highlighted by Brown & Mason (2017), EE’s are subject to significant path dependence and are shaped by their institutional and historical trajectories. As a consequence, each ecosystem is unique and built upon its idiosyncrasies which are culturally, spatially, and historically embedded.

### 2.2.2 Conceptual Definitions of the Entrepreneurial Ecosystem

There is an absence of a single agreed-upon definition of the Entrepreneurial Ecosystem (Wadichar et al., 2022), other than that “the Entrepreneurial Ecosystem is a set of interdependent actors and factors coordinated in such a way that they enable productive entrepreneurship” (Stam, 2015). Therefore, a list is displayed below to highlight different researchers' similar, yet somewhat different definitions:

- Isenberg (2010): *“The entrepreneurship ecosystem consists of a set of individual elements that combine in complex ways. In isolation, each is conducive to entrepreneurship but insufficient to sustain it. Together, however, these elements turbocharge venture creation and growth.”*
- Mason & Brown (2014): *“A set of interconnected entrepreneurial actors, entrepreneurial organizations, institutions, and entrepreneurial processes which formally and informally coalesce to connect, mediate and govern the performance within the local entrepreneurial environment.”*

- Autio (2016): *“EEs are interaction systems that consist of hierarchically independent yet mutually dependent ecosystem actors.”*
- Spiegel (2017): *“Ecosystems are the union of localized cultural outlooks, social networks, investment capital, universities, and active economic policies that create environments supportive of innovation-based ventures.”*
- Maroufkhani et al. (2018): *“A conceptual model or a strategy that is designed to nurture economic development by promoting entrepreneurship, small business growth, and innovation.”*

These definitions commonly emphasize how elements such as firms, venture capitalists, universities, and public sector agents work together and interact, frequently through networks, to create cultural norms that encourage entrepreneurship. For visualization of the EE concepts, see Figure 1 on page 18.

Despite EE's extensive application in entrepreneurship policy, study, and practice, it is still a subject of criticism. Alvedalen & Boschma (2017) identified several limitations of the current Entrepreneurial Ecosystem research. According to the authors, the current EE literature lacks a clear analytical framework that makes explicit what is cause and what is effect. Furthermore, while being a systemic concept, the EE has not yet fully exploited insights from network theory, and it is not always clear in what way the proposed elements are connected in an EE. Additionally, Alvedalen & Boschma (2017) argues that it remains a challenge how institutions, and at what spatial scale, impact the structure and performance of Entrepreneurial Ecosystems. Studies have often focused on the EE in a single region or cluster, but lack a comparative and multi-scalar perspective (Alvedalen & Boschma, 2017). Finally, according to the authors, some entrepreneurship research has treated entrepreneurial opportunities as exogenous, not considering the creation of opportunities as part of the entrepreneurial process (Alvedalen & Boschma, 2017). Based on these limitations, Alvedalen & Boschma (2017) argue for the need for more empirical research on how different components of the Entrepreneurial Ecosystems interact with each other. Although this thesis will not examine all these limitations, further empirical research related to how various components within the ecosystem interact with each other will be explored.

### 2.3 Existing Studies on Entrepreneurial Ecosystem in Cities

It is not possible to create a ‘one-size-fits-all’ model within this theoretical field as every Entrepreneurial Ecosystem consists of a unique combination of attributes as well as depends on the cultural, spatial, and historical context in a specific region (Brown & Mason, 2017); Thus, several scholars have made research on the EE within a specific region such as Waterloo, Edinburgh, Lancaster, Munich, Singapore and Silicon Valley (Spigel & Vinodrai, 2020; Spigel, 2016; Pugh et al., 2019; Hubner et al., 2021).

Spigel & Vinodrai (2020) found the city of Waterloo, one of the world’s top Entrepreneurial Ecosystems, interesting due to its strengths within technology, quantum computing, and wireless communications. They researched the recycling of people, capital, and ideas in an EE after an anchor firm collapsed using career history data to track recycling into ecosystems (Spigel & Vinodrai, 2020). Edinburgh was used as a research subject to explore the role of entrepreneurship support organizations and how they contribute to the development of successful Entrepreneurial Ecosystems using websites and other public materials as an analytical base (Spigel, 2016). Pugh et al. (2019) conducted a mixed-method case study of Lancaster to investigate the role of learning within an EE and particularly, how universities may act as a catalyst for creating and sustaining high-growth entrepreneurial ventures in a region. Hubner et al. (2021) compared three ecosystems, all successful in comparably large cities but contrasting in terms of location, culture, and structure, using an exploratory, qualitative research design; To find ecosystem-specific narratives indicating what is common, successful, and appropriate in each ecosystem as well as understand the specific success factors and suggested strategies in each EE.

### 2.4 Previous Related Literature on Sweden and the Nordics

Balwi & Ayoub (2022) recently conducted a study assessing Sweden’s Entrepreneurial Ecosystem by comparing it to Finland and Norway, primarily focusing on the role of governance and policy in enabling entrepreneurial activity. The report concludes that in terms of globalization and technological use, Sweden surpasses Norway and Finland, but current barriers must be addressed through policy actions, most notably by investing in human capital. The recommended policy improvements for Sweden include promoting postsecondary education and designing curricula to foster entrepreneurial skills amongst potential

entrepreneurs to increase the population's perception of startup skills (Balawi & Ayoub, 2022). Moreover, as technology inevitably has an impact on business development and innovation, Sweden should enhance investments in the training of its labor force to provide all employees with technology-driven abilities. Balwi & Ayoub (2022) also advises that the state take steps to streamline the regulatory environment as well as introduce new laws in order to increase transparency and encourage and simplify the development of new firms.

Another relevant study about the EE has been focusing on the Nordics and especially the talent transformation as a key process. Steigertahl & Mauer (2023) conclude that the social context, business environment, and accessibility to higher education together have an important impact on the Entrepreneurial Ecosystem. Informally formed networks serve as the main entry point into the Nordic entrepreneurial environment. Due to the small population and geographic concentration of innovation hubs, experts have observed a general openness to newcomers and minimal entry barriers to networks and communities in both Nordic national and Entrepreneurial Ecosystem cultures. This social context is additionally influenced by the 'backflow' of talent in the technology and innovation sectors, where experienced business owners return as mentors and experts after leaving their ventures (Steigertahl & Mauer, 2023). The established culture of trust is another important and distinctive feature of the Nordic EE. The business environment in the Nordic countries also plays an important role in the ecosystem, most prominently due to the accessibility of both private and public capital. For example, Sweden attracts national and foreign capital through tax reductions for angel investors. In addition, many public universities are less expensive compared to private institutions and are renowned for their entrepreneurship programs. Steigertahl & Mauer (2023) conclude their research with a recommendation that the Nordics, to ensure relevance and applicability during the construction of the policy program, must collaborate with universities and entrepreneurial education programs.

Finally, Pocek (2022) conducted an empirical study that analyzed the complex dynamics and interactions of EEs in the Lund University ecosystem using an institutional theory framework. The article highlights that prior research on Entrepreneurial Ecosystem has overlooked the impact of interactions between different actors upon the ecosystem dynamics. Although the study was made using a Nordic ecosystem, the paper does not provide any specific findings related to the Lund University ecosystem but instead implies that its findings may not apply elsewhere. Pocek (2022) argues that policymakers need to consider the effect on interactions

and dynamics in the EE that their policies may have. Furthermore, they should strive to establish an environment that encourages integration rather than disintegration. For entrepreneurs to succeed, they should comprehend the institutional context and its effects on interactions and resource utilization within the ecosystem. This would allow them to leverage the ecosystem's resources to achieve their goals.

## 2.4 Research Gap & Research Questions

### 2.4.1 Research Gap

Several shortcomings related to the present state of the Entrepreneurial Ecosystem literature can be discussed, some of which will act as a base for the research gap of this thesis. Entrepreneurial Ecosystems can be explained as a hierarchically independent yet mutually dependent set of ecosystem actors, and Alassar (2021) argues that the EE literature underestimates the role of these actors. Hence, further studies exploring the interplay among actors in the external environment are needed (Alassar, 2021; Alvedalen & Boschma, 2017). Brown & Mason (2017) highlight that each Entrepreneurial Ecosystem is unique and its composition is attributed to its historical, spatial, and cultural context. This is further emphasized by Maroufkhani (2018) who stresses the importance of additional empirical research identifying the special features of a single ecosystem. Spigel (2017) makes similar suggestions for future research in identifying the specific attributes of EE's and their relationships. Additionally, zooming in on Stockholm as the focus of this thesis is motivated by the lack of prior research targeting this sole ecosystem. Unlike previous research on Sweden and the Nordics as an ecosystem, this study will take a more holistic approach rather than focusing on policy, governance, and the talent transformation process (Balawi & Ayoub, 2022; Steigertahl & Mauer, 2023).

### 2.4.2 Research Questions

Based upon the current research gap in the EE literature as well as lacking empirical research focusing on Stockholm, this study takes a standpoint in further analyzing Stockholm's Entrepreneurial Ecosystem. This will be done by examining whether the chosen EE adaptation, presented in the following chapter, is enough to explain this specific ecosystem through the following research questions:

- 1. What are the characteristics of Stockholm seen as an Entrepreneurial Ecosystem?*
- 2. a. What challenges do the involved actors perceive and what can be done to overcome them?*
- 2. b. What are the policy implications of these perceived challenges?*

This study aims to contribute to the Entrepreneurial Ecosystem literature by providing empirical research on a single ecosystem and exploring the unique historical, spatial, and cultural context. Furthermore, we aim to uncover how these elements operate and work together, as well as their empirical implications to ensure the future of this specific ecosystem.



### 3. Theoretical Framework

*After defining the purpose of this study and previous related literature on the topic, this chapter aims to introduce the chosen theoretical framework underlying the study and its various components.*

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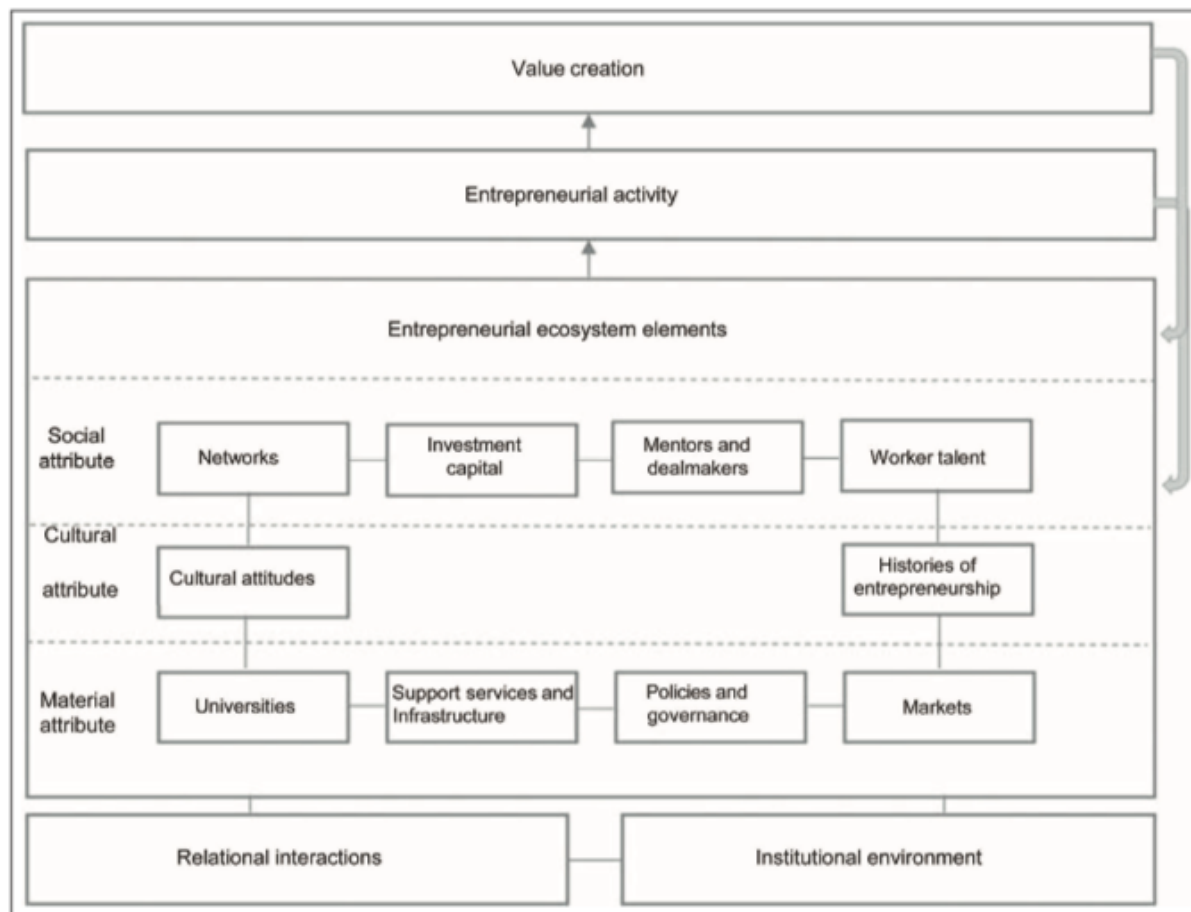
As previously mentioned, scholars have yet to agree on a shared universal definition of Entrepreneurial Ecosystems, other than that it involves independent actors and factors working together to enable productive entrepreneurship (Stam, 2015). For this thesis, the following definition by Stam (2015) is used:

*“An EE is a collection of interconnected players and circumstances that work together to enable fruitful entrepreneurship. As a result, entrepreneurship takes place in a community of autonomous actors, with the ecosystem’s heart being formed by networks of entrepreneurs, leadership, funding, talent, information, and support services. The ecosystem’s success is determined by the presence of certain constituents and their interactions.”*

In general, scholars emphasize three key regional resources that improve entrepreneurship and growth. The first one is the shared cultural and institutional environment that promotes inter-firm cooperation as well as facilitating knowledge sharing and firm mobility or acts as protective barriers to this kind of activity (Spigel, 2017). The second one is social networks that work within regions that promote knowledge spillovers between universities and firms, help distribute information regarding entrepreneurial opportunities, as well as link entrepreneurs with financiers (Spigel, 2017). The third and final regional resource is government policies and universities that can support cultures and networks through the removal of institutional barriers to entrepreneurship, train skilled workers and entrepreneurs and provide funding for specific support programs including networking events and incubation facilities (Spigel, 2017).

The theoretical framework chosen for this study consists of a model explaining the Entrepreneurial Ecosystem’s composition and relationships which is an adaptation by

Wadichar et al. (2022) of two of the most prominent EE scholars, Stam's (2015) and Spigel's (2017) research.



**Fig. 1.** The Entrepreneurial Ecosystem's Composition and Relationships

**Source:** Wadichar et al. (2022) adapted from Stam (2015) and Spigel (2017).

The chosen model consists of social, cultural, and material attributes (Wadichar et al., 2022). The different elements are beneficial for entrepreneurs as they supply them with various resources which in turn create entrepreneurial activity and thus value creation. Between these elements, the Entrepreneurial Ecosystem is complemented by relational interactions and the institutional environment as additional layers relevant to the framework to better grasp the interrelationships and ecosystem composition (Wadichar et al., 2022).

The various attributes and elements do not exist in isolation, instead, the attributes are overlapping and they are sustained and reproduced through their relationships with other attributes (Spigel, 2017). Unique configurations of the Entrepreneurial Ecosystem arise from

the various ways the elements within an ecosystem interact with each other (Alvedalen & Boschma, 2017). Brown & Mason (2017) argues that given the pervasive heterogeneity of Entrepreneurial Ecosystems, there is unlikely to be a ‘one-size-fits-all’ policy prognosis for developing different types of ecosystems.

Normalizing and legitimizing support for entrepreneurs within the EE contributes to the creation of dense networks among entrepreneurs, investors, and advisors (Spigel, 2017). The government can not develop the ecosystem on its own, it must involve the private sector early on in the process as the private sector possesses incentives to create self-sustaining, profit-driven markets (Isenberg, 2010). According to Edquist (2019), activities that are important for the ecosystem should only be performed by public organizations if they are not, or cannot be, carried out by private organizations. Private initiatives furthermore enable governments to act quicker and more effectively (Isenberg, 2010). Additionally, certain elements within the ecosystem may have conflicting or different goals and motivations as well as perceive attributes differently (Wurth et al., 2022).

In low-density EE’s, certain elements are more dominant, driving the other elements; For example, a strong market in an Entrepreneurial Ecosystem can support the inflow of opportunities. In high-density EEs, the elements instead support one another in a more balanced manner (Spigel, 2017). By extending their actions beyond their expected realm, actors within an ecosystem can increase connectivity and provide required resources, including accelerators, government initiatives & policy interventions, and universities (Wurth et al., 2022). However, there are also instances of EEs that lack one or more of these elements (Spigel, 2017). One of the most critical challenges for governments in building a successful Entrepreneurial Ecosystem is to customize their approach to suit their own local entrepreneurship dimensions, style, and climate (Isenberg, 2010).

### 3.1 Social Attributes

#### 3.1.1 Networks

Networks tend to be focused within a region and support entrepreneurs in gathering market- and technological knowledge, the acquisition of resources, and gaining access to customers and suppliers. The most dense networks are created by frequent face-to-face interactions

(Spigel, 2017). Dynamic EEs are characterized by their strong informal and formal networks that facilitate the sharing of tacit knowledge and help reduce resource deficiencies in new ventures (Brown & Mason, 2017).

### 3.1.2 Investment Capital

New ventures secure financing and advice from institutional investors including venture capitalists, angel investors, or the entrepreneurs' personal network of family and friends. Local investors within a region with deep connections to the local entrepreneurial community are essential to catalyzing the growth of startups (Spigel, 2017). Brown & Mason (2017) also emphasizes entrepreneurial recycling, where entrepreneurs who have sold off their business seek to re-invest locally in new promising ventures, acting as business angels, and providing financial support and advice. According to Isenberg (2010), new ventures must be exposed to the rigors of the market early on, it is therefore a mistake to flood them with easy money. To ensure that entrepreneurs develop toughness and resourcefulness, governments should instead 'stress the roots' of startups by dispensing money more carefully. Additionally, if resources are scarce, Isenberg (2010) argues that programs should prioritize the high-potential entrepreneurs focusing on growth who target large potential markets. This as the wealth creation, power to inspire other startups, labor force enrichment, and reputational value is much greater in large rapidly globalizing operations compared to a large number of micro-financed operations.

### 3.1.3 Mentors & Dealmakers

Mentors' presence within a region supports the overall creation of new firms and increases survival rates (Spigel, 2017). Dealmakers are characterized as actors with high levels of social capital who build connections between entrepreneurial actors to improve firm creation and growth within a region (Spigel, 2017). The interactions between entrepreneurs help inspire the next generation of entrepreneurs hence entrepreneurship has a cumulative self-perpetuating effect on future levels of entrepreneurship (Brown & Mason, 2017). Entrepreneurial recycling is also detectable in the mentors and dealmakers element, where previous successful entrepreneurs provide hands-on support to new ventures (Brown & Mason, 2017).

### 3.1.4 Worker Talent

Worker talent includes employees with specific skills suited for the demands of the startup, both technical workers and experienced managers (Spigel, 2017). The match between workers

and entrepreneurs is enabled through networks, hence adding to the value of dense social networks within a region (Spigel, 2017).

## 3.2 Cultural Attributes

### 3.2.1 Cultural Attitudes

Cultural attitudes that normalize outlooks of entrepreneurship, to make it seem like a normal part of an individual's career path, enable a fostering environment that promotes the creation of new ventures as well as encourages others to support startups that involve high levels of risk (Spigel, 2017). Isenberg (2010) also recognized the role of culture and, specifically, positive societal norms towards entrepreneurship as a key component of Entrepreneurial Ecosystems. To further encourage entrepreneurs to follow in the footsteps of successful entrepreneurs, governments should celebrate thriving entrepreneurial ventures; This can be done through media events, highly publicized awards, and praise in government literature, speeches, and interviews (Isenberg, 2010).

### 3.2.2 Histories of Entrepreneurship

Success stories of entrepreneurship within a region can encourage and inspire other individuals to choose a similar path (Spigel, 2017). Brown & Mason (2017) emphasizes the role of large existing firms in configuring the Entrepreneurial Ecosystem. Large incumbent firms attract skilled labor, enhance their managerial skills and provide them with business opportunities by linking them with global customers (Cho et al., 2021). The employees' experiences and knowledge stemming from these large firms are likely to foster new spinout ventures, mostly through the development of variants of the core product. This process will over time increase the heterogeneity in the EE making it more competitive long-term (Cho et al., 2021). According to Isenberg (2010) it has become evident in recent years that even a single success can have remarkably stimulating effects on the Entrepreneurial Ecosystem, and one success can inspire others to follow. Isenberg's (2020) 'law of small numbers' can help reduce the perception of entrepreneurial barriers and risk and instead highlight the rewards of successful entrepreneurship.

### 3.3 Material Attributes

#### 3.3.1 Universities

Universities support the development of human capital in a region as well as nurture students' entrepreneurial mindsets, which encourage them to start new ventures or work for startups. Entrepreneurs also gain access to the knowledge of universities by hiring university graduates (Spigel, 2017). Regional universities appear to be central to the area of high technology and innovation as they are fostering talents with sufficient knowledge to work in the entrepreneurship sector (Steigertahl & Mauer, 2023).

#### 3.3.2 Support Services & Infrastructure

Support services and infrastructure include specialized services for startups such as accountants, patent lawyers as well as human resource advisors who are familiar with the common challenges faced by entrepreneurs. These provide the entrepreneur with capabilities they do not themselves possess. This also includes incubators, accelerators, co-working facilities, and science parks that support startups by providing office spaces, networking support, and advice (Spigel, 2017).

#### 3.3.3 Policies & Governance

The policies and governance element include laws and directives that create publicly funded support programs that encourage entrepreneurship. This is done through tax benefits, investment of public funds, or reductions in bureaucratic regulations (Spigel, 2017). Governments should focus on removing administrative and legal barriers to entrepreneurship (Isenberg, 2010).

#### 3.3.4 Markets

Open markets provide opportunities in the EE through the presence of local customers with specialized needs. The entrepreneur identifies these opportunities through interacting with local potential customers and can thus easily test their new product offerings. Markets hence act as catalysts for Entrepreneurial Ecosystem development (Spigel, 2017).

#### 4. Setting the Scene: Introduction to Stockholm

*The purpose of this chapter is to introduce the chosen geographical focus of this thesis, Stockholm, and some facts relating to its entrepreneurial success.*

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The choice to conduct a study focusing on Stockholm is supported by several factors. Firstly, Stockholm is the largest urban area in Scandinavia and also one of the fastest-growing metropolitan areas in Europe (SCB, 2022). Additionally, among the cities with the most global headquarters, Stockholm is ranked number three in Europe, housing more Global headquarters of multinational corporations than major cities including Madrid, Moscow, and Dublin (Invest Stockholm, 2020). Furthermore, in 2021 Stockholm was ranked as the most innovative region in Europe by the Regional Innovation Scoreboard (European Commission, 2021). It is also the home to some of Europe's leading business- and technical schools such as Stockholm School of Economics and KTH Royal Institute of Technology as well as great incubators and accelerators such as Sting and KTH Innovation. Stockholm also hosts different tech events such as STHLM Tech Fest, and co-working spaces such as Epicenter as well as venture capital firms such as Creandum. The Swedish government also supports entrepreneurship by offering assistance for companies in their startup phase as well as through favorable legislation (Kristensen et al., 2023).

The city holds a strong competitive position in the financial service sector and has a long history of actor engagement and public-private cooperation within the life science, information and communication technology, and production management sectors (Kristensen et al., 2023). According to OECD (2021), 24,9% of Stockholm's total employment is concentrated in knowledge-intensive services and high-tech sectors. Sweden ranked 10th out of 190 economies in terms of ease of doing business in the Doing Business Report from 2020. Several efficient mechanisms facilitate business creation including online complaint systems for registration, taxes, permits, and property transfer (World Bank, 2021).

The Stockholm startup scene also places a lot of focus on solving key sustainability challenges worldwide, and in 2020, Stockholm startups raised 18% of all capital raised by purpose-driven companies in Europe (Invest Stockholm, n.d). According to Invest Stockholm (n.d), Sweden ranks 2nd globally based on the achievement of the Sustainable Development Goals. As of

April 2022, there are 240 impact startups in Stockholm focusing on everything from solar cells to AI-driven education (Invest Stockholm, n.d).



## 5. Methodological Approach

*This chapter aims to walk the reader through our methodological choices and chosen approach throughout the study by going through (1) the research approach and design, (2) data collection, (3) data analysis, and (4) trustworthiness criteria.*

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### 5.1 Research Approach & Design

Numerous choices have been made throughout the course of this study in order to achieve a fit between the chosen area of research and the theoretical model, research design, data analysis, and study findings. The thesis uses an abductive research approach which consists of a combination of the deductive and inductive approaches. The abductive research typically starts with empirical observations but grants some theoretical preconceptions and includes iteration between empirical observations and theory (Alvesson & Sköldbberg, 2017). This also includes that the researcher can reconsider theoretical choices if necessary after initial empirical observations. This thesis started off with an observation and our interest in the phenomenon that is Stockholm's startup sphere and the history of entrepreneurship which led us to research potential theories suitable to explain it. After thorough research about entrepreneurship, innovation, and Stockholm, the Entrepreneurial Ecosystem theory was deemed to have the strongest theoretical fit. This initial phase using an abductive approach allowed for the creation of research questions which subsequently laid the foundation for the theoretical framework. Based on the theoretical background and pre-study consisting of three interviews, the study entered the data collection phase. Constant comparison of findings was made during this stage, moving between the theoretical concept and empirical observations (Bryant & Charmaz, 2007). This iterative process allowed us to describe and explain the unique ecosystem in Stockholm as well as contribute to the broader Entrepreneurial Ecosystem field (Flick, 2014). Two additional articles were used in the theoretical discussion of the findings. These were not included in the literature review nor the theoretical framework as we were unaware that these would be needed to explain the Entrepreneurial Ecosystem in Stockholm, and they are not currently directly linked to the EE theory. Hence, these were not used as a basis for the initial research, instead, they were used to explain the emerging findings.

As we are concerned with understanding in what way certain attributes are related to one another and intertwined into an ecosystem, a qualitative approach was deemed appropriate to

ensure methodological fit (Bell et al., 2019). Furthermore, an exploratory qualitative study was considered suitable as the research is concerned with understanding the complex emerging patterns, concepts, relationships, and themes in the partly unexplored research area that is Stockholm in relation to Entrepreneurial Ecosystems (Gioia et al., 2013; Maxwell, 2012; Yin, 2015). This approach was especially useful in this scenario which has limited standardized metrics to assess the effectiveness or structure of Entrepreneurial Ecosystems. It is also useful when conducting studies that aim to facilitate theory development rather than theory generation (Spigel, 2017; Dubois & Gadde, 2002).

## 5.2 Data Collection

### 5.2.2 Interview Sample

Due to the exploratory nature of this study, we decided to conduct a qualitative study in order to, on a more in-depth level, capture the different nuances and perspectives regarding the ecosystem in Stockholm. The data for this qualitative study consists of three pre-study interviews and 21 main interviews. The interviews were conducted with various actors currently operating in the Stockholm Entrepreneurial Ecosystem, including public and private actors as well as entrepreneurs. The snowball sampling method was used to find potential interviewees where an initial group of participants was identified through discussions with our supervisor in combination with internet searches (Bell et al., 2019). When conducting interviews with the initial group they were asked to identify other potential actors which culminated in a list of actors that all play a role in Stockholm's Entrepreneurial Ecosystem. The snowballing sampling technique enabled for better identification of knowledgeable actors as well as allowed us to better get access to interviewees through personal networks. We wanted to interview Norrskén as they are one of the few private support service organizations in Stockholm, but despite extensive efforts, they were unwilling to participate. Regardless, we still got some information about their role in the ecosystem as several other interviewees highlighted their work. With the exception of Norrskén, after conducting 24 interviews, we concluded that we had collected enough data representing different perspectives to make a proper evaluation of the Stockholm ecosystem and hence, be able to answer the two research questions.

In order to improve the generalizability of the thesis, the decision was made to narrow down the scope of entrepreneurs and focus on young sustainability tech startups founded in Stockholm. The selection of this sector was influenced by Stockholm's proven success within the field, with companies such as Northvolt and Einride in its roster. The companies were identified and selected based on region, company size and the year it was founded using The Swedish Climate Startup Map (2023) and Swedish CleanTech (2023). We purposefully selected companies founded after 2016, with less than 50 employees, founded in Stockholm in order to capture the current entrepreneurial context as accurately as possible. The full list of interviewees was classified into the following categories: public actors, venture capital companies, government agencies, universities, private investors, incubators, and startups (see list in Figure 2 below). See Appendix 3 for details about each actor's work and responsibilities.

Pre-Study	ID	Actor	Date	ID	Actor	Date
	1	Stockholm School of Entrepreneurship (SSES) University	14/2	13	Swedish Government Offices (Regeringskansliet) - Government	2/3
	2	City of Stockholm - Public	15/2	14	SUP46 - Incubator	6/3
	3	Swedish Companies Registration Office (Bolagsverket) - Government agency	17/2	15	Business Angel (private investor - Investment Capital)	15/3
	4	Invest Stockholm Business Region - Public	20/2	16	NxNano - Entrepreneur	16/3
	5	Invest Stockholm Business Region - Public	21/2	17	Sting - Incubator	20/3
	6	Nyföretagarcentrum - Public	21/2	18	DTR-1 - Entrepreneur	20/3
	7	Business Sweden - Public	22/2	19	Almi - Public	24/3
	8	Business Sweden - Public	22/2	20	Blixt Tech - Entrepreneur	24/3
	9	Knowledge Foundation (KKS) - Public	22/2	21	Swedish Incubator & Science Parks (SISP) - Incubator	28/3
	10	Vinnova - Public	23/2	22	KTH Innovation - Incubator	31/3
	11	Swedish Agency for Economic and Regional Growth (Tillväxtverket) - Government agency	24/2	23	Almi Invest - Investment Capital	31/3
	12	Swedish Agency for Economic and Regional Growth (Tillväxtverket) - Government agency	24/2	24	Bright Day Graphene - Entrepreneur	4/4

**Fig. 2.** List of Interviewees

**Source:** Compiled by the authors

### 5.2.3 Interview Design

Semi-structured interviews were conducted to collect the qualitative data for this thesis (Bell et al., 2019). The standardized questions ensured comparability for analytic purposes whilst the follow-up questions enabled more in-depth discussions by enhancing the apprehension of the interviewees' answers which allowed us to capture real-time experiences of the Stockholm EE phenomenon (Bell et al., 2019). The interview questions (see Appendix 1) were based on the

extensive literature research that took place prior to the interviews. The same interview guide was used when interviewing the public and private actors, with one additional question being asked to the public actors. When interviewing the entrepreneurs a different interview guide was used to better capture their personal experiences. We used the interview guide in a semi-strict manner, meaning that it provided the base for every interview and constituted the vast majority of asked questions. However, all interviews also included a few questions not included in the guide, usually as a result of something that came to mind whilst listening to the interviewee. At the end of each interview, the interviewees were asked to comment on the theoretical model on which this thesis is based, to see if they found it sufficient to describe the Entrepreneurial Ecosystem in Stockholm. This was purposely done at the end of the interview to ensure that the interviewee had already explained the phenomenon in their own words during the initial questioning and thus avoid being influenced by our theoretical model when describing the ecosystem.

The interviews lasted approximately 45-60 minutes and were mainly conducted using video calls. The interviewees were asked to consent to the interview being recorded and each recording was transcribed within 48 hours; This in order to eliminate subjective tendencies, such as only remembering the aspects in line with the study's purpose, as suggested by Bell et al. (2019). Both authors were present during each interview and this is, according to Bell et al. (2019), preferable when conducting semi-structured interviews because the interviewers can alternate between an active and passive role, which contributes to a more relaxed atmosphere that promotes in-depth responses and discussions. Having two interviewers present, also known as researcher triangulation, further improves the objectivity of the thesis, as the discussions and follow-up questions are less affected by the subjective tendencies of a single interviewer (Bell et al., 2019). From an ethical perspective, the decision was made to anonymize the interviewees only using the organization they work for, or in one case a description of their occupation, to categorize their answers. This was communicated to the interviewees prior to the interview.

### 5.3 Data Analysis

For the data analysis, the Gioia coding method was combined with an abductive approach where the pre-conceptions of the EE theory constituted the base for the coding of the

first-order concepts (Gioia et al., 2013; Dubois & Gadde, 2002). Thus, a process of systematic alternation between the empirical data, the previous literature, and the theoretical framework was performed (Dubois & Gadde, 2002). Gioia's method of coding constitutes of three rounds, the initial coding involves breaking down the data into first-order concepts that represent distinct themes found in the data, usually emerging inductively. The second round of coding results in second-order themes as the researchers group similar concepts together to form larger themes. The last round of coding results in aggregated dimensions that highlight the main findings of the data (Gioia et al., 2013).

Our first round of coding was performed with a preliminary scheme based on the Entrepreneurial Ecosystem elements gathered from the adaptation by Wadichar et al. (2022) of Stam's (2015) and Spigel's (2017) research. During the coding process, the abductive approach was accompanied by influences from grounded theory in order to see the material from a different angle, using a bottom-up approach to find new themes, without being limited by the theoretical framework when reading through interview notes and transcripts. During this process, new themes that described the Entrepreneurial Ecosystem in Stockholm emerged inductively; Therefore this round of analysis could be seen as a combination of a data-driven and theory-driven approach. This first round of coding resulted in the first-order concepts seen in Figure 3 on page 32. In the second round of coding, abstract themes that described the Stockholm Entrepreneurial Ecosystem were established, which required shifting between analysis and theory (Dubois & Gadde, 2002). This step led to the second-order themes as seen in Figure 3. The third step included categorizing the second-order themes into aggregated dimensions found in Figure 3 (Gioia et al., 2013). We performed each step of the coding process together; This decision was based on the notion that we, as a pair, are good at questioning each other in order to spark more in-depth discussions and thus arrive at more nuanced conclusions. The qualitative coding was performed using the Nvivo 12 software.

#### 5.4 Trustworthiness Criteria

As suggested by Lincoln & Guba (1985), 'trustworthiness' will be applied in order to evaluate the quality of the study using four criteria: credibility, transferability, dependability, and conformability (Bell et al., 2019).

#### 5.4.1 Credibility

Credibility refers to the extent to which our representation of reality and results appear to be correspondent to the reality as perceived by the interviewed actors (Lincoln & Guba, 1985). The credibility of this study has been enhanced through a large interview sample with various actors within Stockholm's ecosystem; This captures the phenomenon through the actors' different perspectives and perceptions of reality. Furthermore, the credibility has been assured through working closely with and being guided by previous EE research. As already mentioned, the study used triangulation as both authors were present at every interview and thus were able to discuss them with one another to assure everything was understood the same way in order to minimize misunderstandings (Kvale & Brinkmann, 2014). Respondent validation was used as a technique to improve the credibility of our results which included returning the quotes to the participants via email to check for accuracy and resonance with their experiences, allowing them to provide feedback (Birt et al., 2016). This process was especially important since the interviews were conducted mainly in Swedish, enabling us to ensure that the experiences of the respondents were properly communicated even though their responses had been translated from Swedish to English.

#### 5.4.2 Transferability

As explained by Lincoln & Guba (1985) and Bell et al. (2019), it is not the responsibility of the researchers conducting qualitative research, such as this study, to make any precise claims about the transferability of findings to different contexts or scenarios. The authors made sure to give in-depth explanations of both the situation and the phenomenon being investigated. This enables readers who might want to extrapolate the findings to do so according to their own standards of transferability (Lincoln & Guba, 1985; Bell et al., 2019).

The pre-study interviews revealed that the behavior of support services and the availability of investment capital for entrepreneurs is dependent on which industry you examine. Taking this into consideration, along with the time constraints of this study, the decision was made to choose one industry to focus on. By looking solely at sustainability tech entrepreneurs we could create a better understanding of the premises of their industry which could then potentially be applied to other industries with similar conditions.

### 5.4.3 Dependability

In order to increase dependability as well as ensure that the research process is well documented, traceable, and systematic, the researchers used an auditing approach as suggested by Lincoln & Guba (1985). This was made possible through keeping complete records of all phases in the research process, and the use of our supervisor who verified our research process and examined the study in two phases (Bell et al., 2019).

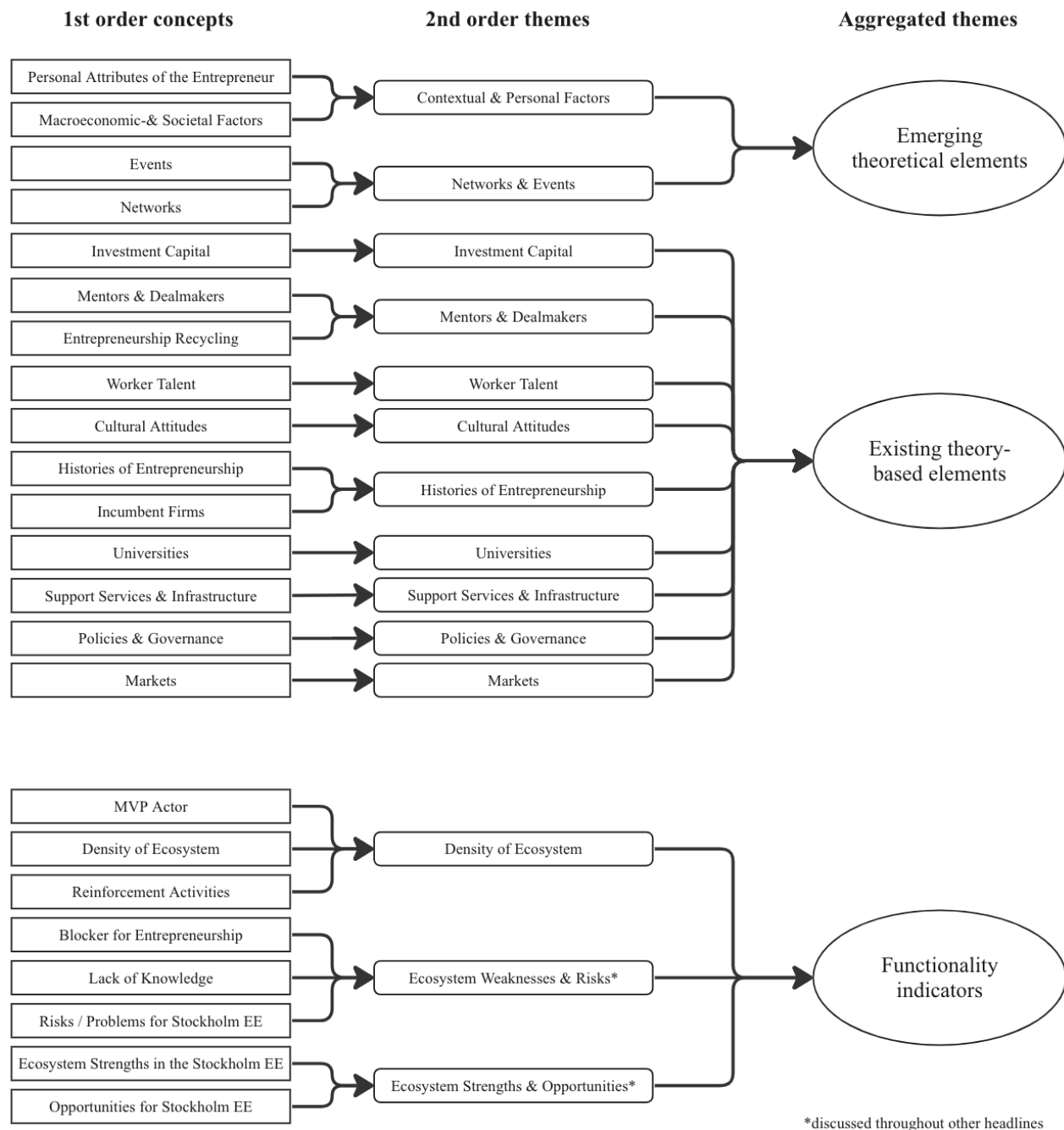
When investigating Entrepreneurial Ecosystems, which depend on cultural, spatial, and historical context in a specific region (Brown & Mason, 2017), one might argue for its dependability. We, on the other hand, argue that our research still contributes to the overarching research within the field of Entrepreneurial Ecosystems by testing a theory and providing much-needed empirical knowledge, thus providing broader insights even though the focus is Stockholm during 2023. This way of conducting empirical research is common in the Entrepreneurial Ecosystem field where you study small places but large issues.

### 5.4.4 Conformability

Researchers must take into account the extent to which their study's conclusions can be verified by other researchers and safeguard against theoretical or personal biases interfering with data collection, interpretation, and analysis (Bell et al., 2019). Thus, reflexivity was practiced in order to improve this quality element, known as conformability. Reflexivity is used during and after the course of the research as opposed to reflection, which occurs afterward (Bell et al., 2019). Most notably, reflexivity “requires a fundamental questioning of what is knowable in a given context” (Riach, 2009, p.359). This required keeping a constant line of communication open with one another during the entire study, taking into account our roles as authors and making an effort to understand how we might affect the research. The presence of biased interpretations was further reduced when researcher triangulation was used (Lincoln & Guba, 1985). Additionally, in order to provide a better understanding of why and how decisions were made, transparent descriptions of the reasons for choices relating to the theory, methodology, and analysis have been included.

## 6. Empirical Findings & Analysis

*In this chapter the empirical findings and quotes from the interviews will be presented and analyzed.*



**Fig. 3.** Coding process of empirical data

**Source:** Compiled by the authors



The coding process was performed using the elements found in the adaptation by Wadichar et al. (2022), however, we did come across some additional themes such as contextual- and personal factors, events, the density of the ecosystem, ecosystem weaknesses and risks, and ecosystem strengths and opportunities. The emerging theory-based elements found in the aggregated themes shown in Figure 3, contextual- and personal factors and events, were categorized as such due to their theoretical relevance in explaining the Stockholm ecosystem, not being covered by the existing theory-based elements. The second-order themes will be used as headlines throughout the following two chapters with the exception of “Ecosystem weaknesses & risks” and “Ecosystem strengths & opportunities”. These were deemed suitable headlines in order to be coherent with the theoretical framework which facilitates our ability to answer the first research question. “Ecosystem weaknesses & risks” and “Ecosystem strengths & opportunities” will instead be used throughout the other headlines to help answer the second research question and evaluate the functionality of the ecosystem elements.

The following presentation of empirical findings and analysis will first go through the emerging theoretical elements, contextual- and personal factors, and events. The rest will be presented according to the order in which the existing theory-based elements are presented in the theoretical framework in Chapter 3.

## 6.1 Contextual- & Personal Factors

A number of contextual factors as well as personal attributes of the entrepreneur which contribute to the overall functionality of the ecosystem were identified through the interviews. During a majority of the interviews, societal- and macroeconomic factors were discussed in relation to Stockholm’s entrepreneurial successes. The societal- and macroeconomic factors mentioned were: cultural diversity; high digital literacy and mobile penetration; high English proficiency; being early adopters of new technology; a norm of paying it forward; culture of IPOs and people investing in the stock market; flat corporate hierarchies; good international reputation; high educational level; political and economic stability; good infrastructure.

*“Stockholm is a multicultural city... this is important as it facilitates a global network. It is easy to reach out globally and also have that global mindset from the start compared to other regions in Sweden.” - KTH Innovation*

Apart from societal- and macroeconomic factors, a majority of the interviewees highlighted personal characteristics as essential for entrepreneurial activities and value creation; These traits include curiosity, creativity, responsibility, an acquired taste, punctuality, humbleness, the willingness to get “down and dirty” as well as having a problem-solving mindset. Even if the ecosystem is well-functioning this does not necessarily mean that an entrepreneur will succeed; Their success also depends on their personal attributes and abilities as an entrepreneur.

*“The only thing that stands in your way is yourself if you're not willing to meet different people so you can move past your challenges and get to wherever you want to be.” - SSES*

Thus, an entrepreneur's ability to succeed is connected to the individual and their ability to relate to the ecosystem in which their venture operates, something which is also highly dependent on contextual factors. Additionally, five of the interviewees stressed the importance of the team behind the entrepreneur as a determining factor for their business' success.

*“You need to have a team with different competencies. A diverse team is extremely important in the early stages of entrepreneurship to make things happen.” - Swedish Government Offices*

Various risks, problems, and opportunities were also identified in connection to the contextual- and personal factors of Stockholm's ecosystem. Firstly, the geographic location of Stockholm was identified by some of the interviewees as a potential risk; Being located on the outskirts of Europe, Stockholm is less accessible for travelers and the poor weather conditions in comparison to other European cities were viewed by City of Stockholm and Sting as factors that might negatively affect the overall ecosystem in Stockholm. Secondly, the housing situation in Stockholm was identified by a majority of the interviewees as a potential risk. Although Stockholm and its closeby areas are characterized by well-functioning infrastructure, the housing shortage and expensive prices can negatively impact the ecosystem. If talents, both domestic and international, wish to live in near proximity to their workplace the current situation in Stockholm can prevent talent from relocating to a business located in Stockholm, thus hurting the ecosystem in general when losing potential talent.

Thirdly, Invest Stockholm, Business Angel, and Sting all shed light on another prominent risk related to the contextual factors, namely the increase of gang-related crimes in Stockholm. The escalation of gang-related criminal activity poses a challenge to Stockholm's reputation as a functioning welfare state and raises concerns regarding the perceived safety, potentially affecting worker talent's decision to relocate.

*“If a lot of people are under the impression that it's no longer safe in Stockholm due to increasing crime rates, people might not want to move here. This is not only true for the startup sphere but the overall business climate.” - Business Angel*

Fourthly, Almi, Swedish Companies Registration Office, and Nyföretagarcentrum mentioned the increased inflation and the Riksbank<sup>2</sup> increasing the policy rate as a significant macroeconomic risk. According to the Swedish Companies Registration Office, the increasing interest rates harm small businesses as it could result in them being unable to repay their loans and subsequently becoming bankrupt. Fifthly, Invest Stockholm identified the long lead time of receiving your Swedish personal number as a potential problem since it is needed in order to register a new venture. The last problem, identified by Invest Stockholm, in relation to contextual factors was the energy crisis.

On a more positive note, a number of opportunities in regard to contextual factors were identified. Firstly, both Invest Stockholm and SSES expressed that Stockholm's ecosystem has the possibility to solve big societal issues. Invest Stockholm attributed this to the strong environmental awareness in Stockholm, making it prone to solve environmental problems while SSES attributed this to the political stability and lack of corruption. Secondly, KTH Innovation mentioned that even though the current economic state might hinder entrepreneurship, deep tech companies can use the unstable economic conditions as an opportunity to build their businesses and increase their market readiness level before the economy recedes.

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<sup>2</sup> Sweden's central bank

## 6.2 Networks & Events

A majority of the interviewed actors identified networks as an important element in Stockholm's ecosystem, saying that networks are important when finding partners, getting access to best practices, office spaces, financing, employees, customers, suppliers, and advisors. Both informal and formal networks were discussed during the interviews and viewed as equally important.

*“There are both formal and informal networks, everybody knows everybody [in Stockholm]. There are 100 people at the core, and they have formed a network.” - Vinnova*

The City of Stockholm, Invest Stockholm, KKS, and NxNano emphasized the role of informal networks in Stockholm. These informal networks originate from attending school, personal connections, or the entrepreneurs' hometown. Nyföretagarcentrum also highlighted the importance for entrepreneurs to have a local network.

*“Stockholm is a close-knit community with different indirect collaborations that facilitate network creation and communication between each other.” - Almi*

Furthermore, networks are affiliated with both incubators and the financing element of the ecosystem in Stockholm. Incubators facilitate connections between the entrepreneur and individuals that could potentially be useful for their business. Similarly, SISP highlighted that connecting with financiers through the entrepreneurs' own network is important.

DTR-1 expressed that there comes a point when an entrepreneur can no longer rely on their own personal network and the need to expand their network arises. Business Sweden expressed on a similar note that network expansion can be enabled by going abroad to build connections and exchange knowledge before returning. We identified, along with a few of the interviewees that, due to the networks' significance, support services and events are needed in order to facilitate the expansion of the entrepreneurs' existing network.

*“You have, let's say, developers. In their study path, they might mostly meet developers, but for a well-rounded product or business, they need a designer, a*

*business developer, and maybe more. They're going to have a tough time meeting these people unless they know a friend who knows a friend. Most likely, the biggest challenges that they have are most easily solved by the people that are least like them. So for me, it's meeting, meeting, meeting, having the opportunity to meet different people who can help solve big challenges with you.” - SSES*

Events, as explained by a number of the interviewees, are important for the ecosystem as it allows entrepreneurs to showcase their products as well as connect with potential financiers, business partners or customers, in other words, expand their network.

*“Events are important because that is where people meet.”- Swedish Government Offices*

According to Blixt Tech, the Stockholm network is well-functioning due to the pay-it-forward culture and lacking a sense of competition. However, Bright Day Graphene expressed that they have to reach outside of Stockholm to find the right network for their business and industry since it cannot be found within the city. Another issue related to the network in Stockholm, somewhat contradictory to Blixt Tech’s opinion, is that according to the City of Stockholm, the Swedish population is generally reluctant to invite people into their personal networks.

### 6.3 Investment Capital

Upon discussion regarding investment capital available for entrepreneurs in Stockholm, a long list of actors were mentioned: university holding companies, private networks of risk capitalists, angel investors, Almi, Almi Invest, Vinnova, Energimyndigheten, Industrifonden, ERUF, venture capitalist firms, Nordic Angels, Sting, Norrsken, the Swedish Agency for Economic and Regional Growth, and Wallenbergstiftelsen. Additionally, the pay-it-forward culture in Stockholm was recognized in the interviews in relation to investment capital, where people who have had a successful startup journey invest their money back into the ecosystem in new ventures.

Availability of capital is a prerequisite for success according to DTR-1, meaning that it is difficult for a business to boot-strap if they want to achieve growth, something which the

Business Angel agreed on. The Swedish Government Offices mentioned that during the 1990s in Sweden, a prosperous venture capital movement emerged which led to the early development of venture capital funds. This development was a crucial factor in enabling the creation of greater funds, and it has ever since been high levels of capital within the system. The interviewed actors however, had disagreements regarding the amount of available capital within the Stockholm region. KKS, City of Stockholm, and Sting argued that there is a lot of capital available, with KTH Innovation claiming that the availability of risk capital is better in Stockholm compared to other cities in Sweden. On the contrary, several interviewees argued that the competition for financing in Stockholm is tough. Vinnova stated that there is too little capital available in relation to the potential and that there are too many companies in the region in relation to the resources available for public funding. KTH Innovation emphasized that capital is, and has been, a challenge for many startups, especially for tech-related ventures, and even though there have been good access to capital in Stockholm previously, it is more uncertain in today's more unstable economy.

Being a publicly funded actor, Vinnova claimed that they often represent the first instance for new ventures searching for capital, hence taking the most risk. Vinnova continued by saying that for the sake of the social economy, governments should make the most risky investments as these have the possibility to benefit the entire society if successful. They further emphasized that private risk capitalists and angel investors are more interested in profits, making them more likely to get involved only when the company has reached a higher level of maturity. Blixt Tech, however, emphasized that private investors need to take more risk since there is currently no proper government-funded support system in place to support these high-level innovations in the early stages. SISP stated that the financing potential is what attracts startups to enroll in incubator programs. KKS and Invest Stockholm brought attention to the need for better organization of the public financial support functions for startups in order to make use of public resources more efficiently.

Many of the interviewees agreed that it is difficult to get funding in the early stages. The difficulty in receiving funding in the early stages is especially true for deep tech companies that often require large up-front payments with long ROIs. The interviewees had two different explanations for the reluctance to invest in the early stages of a new business: risk aversion and lack of knowledge. The initial stages of a new business are often characterized by a lot of risk.

According to interviewees, many venture capital firms are risk averse, hence investing in safe cards instead of bolder, more innovative projects.

*“One of the biggest challenges in the ecosystem is that venture capital firms today mostly invest in traditional tech such as e-commerce solutions, fin-tech, and gaming with a limited time to market. The high-risk deep tech projects that have growth potential, but require more time is not as prioritized. The ecosystem needs more venture capital that has a longer investment horizon and is more risk tolerant.” - Swedish Government Offices*

Lack of knowledge was identified as the second explanation as to why there is a reluctance to invest in the early stages, not just in deep tech but any business. Individuals employed at publicly funded organizations sometimes lack the adequate knowledge to properly evaluate businesses seeking to receive funding, as they are more generalists according to Invest Stockholm. On the contrary, Almi states that their employees are experts with years of experience evaluating the businesses and that they “trust their gut”. A few of the interviewed startups mentioned that maybe there is a need to employ individuals possessing personal experiences of entrepreneurial journeys themselves to evaluate these new ventures instead of the current politically appointed employees.

*“If you look at Vinnova, Almi, SUP46... You have an idea for a new business and get a spot at an innovation hub, then you get a coach from example Almi, and the people behind this are employed by the government and have usually little or no hands-on experience in entrepreneurship, deep tech, or venture capital. If you are going to work with high-level innovations you need to have the proper competence available in the investment network and also encourage investments that are not from the government.” - Blixt Tech*

Sting also brought up the notion of tech-related businesses, saying that there is more capital available for digital innovations compared to hardware or material innovations. This could be attributed to the former success within this field, the smaller need for large upfront investments, and quicker ROI, leading to risk aversion amongst investors.

*“It is more difficult for deep tech, research-heavy companies that have a long way to go before they reach the market, to raise capital.” - Sting*

DTR-1, a company that provides a sustainability tech software solution, said during the interview that it was “almost too easy” for them to receive funding, this is in line with what Sting argued; Even if sustainability tech can be classified in the same category as deep tech, software solutions, compared to hardware solutions, are more prone to receive funding. According to KTH Innovation, the U.S. is investing more in deep tech today compared to Sweden.

*“The U.S and the rest of Europe are better at pre-seed investments.” - Bright Day Graphene*

As of today, both NxNano and Bright Day Graphene expressed that they have needed to look for funding outside of Stockholm, as the proper system for their types of innovation is not in place. This is somewhat contradictory to Stockholm’s profile, portraying itself as the “Home of Impact”. However, in regards to deep tech, Vinnova and KTH Innovation mentioned that even though there is today no proper solution in place, an initiative focusing on these types of ventures will be announced, hopefully making it easier for deep tech businesses to receive funding.

Vinnova explained that their strategy is to support and provide funding to many different innovations and business experiments; Since it is more effective and cheaper to give as many businesses the opportunity to verify their ideas compared to providing more money to a few large projects. Throughout the interviews, it was identified that even though it is difficult for many businesses to receive funding or raise capital, startups can also receive too much funding implying that the amount of funding you receive is a balancing act.

Discussions on how macroeconomic factors affect the investment capital system in the Stockholm ecosystem arose during many of the interviews. Sting mentioned that both private and public VC companies might be more vigilant to make large investments due to the economic uncertainty stemming from increasing policy rates and high inflation. On a similar note, Almi expressed that startups are sensitive to higher interest rates on their innovation loans which occurs when the policy rate spikes.



## 6.4 Mentors & Dealmakers

The previously mentioned pay-it-forward culture also relates to mentors and dealmakers as these individuals can share their knowledge and provide support for new ventures as explained by Invest Stockholm. This phenomenon was also recognized by the Business Angel, the Swedish Government Offices, and KTH Innovation. Furthermore, the Swedish Government Offices emphasized the role of mentors in making businesses grow.

*“Mentors are important to get access to. They can help you avoid making the same mistakes as they did.”* - Swedish Companies Registration Office

However, Bright Day Graphene had to look outside of Stockholm in order to find suitable mentors for their product as the local mentors lack experience within their field. This is an indication that the mentor network in Stockholm might not be sufficient in providing the proper support for all industries.

Many of the interviewees mentioned key individuals who have had an impact in creating the ecosystem for entrepreneurship in Stockholm, for example, Pär Hedberg, Jan Stenbäck, Julia Delin, Daniel Ek, and Jacob de Geer.

*“There are key people who have made an impact, for example, Pär Hedberg from Sting who have made Sting what it is today and help connect new ventures with the people needed to grow their business.”* - SISP

However, The Business Angel also recognized the challenge of key individuals leaving the ecosystem for different reasons along with SISP. As recognized in the network section (6.2), informal connections between people is also true for the mentor community, it could hence be argued that in order to avoid losing knowledge when a person leaves the ecosystem, there should be fewer informal connections between individuals and their tacit knowledge should be conceptualized.

*"People and relationships are really important, and there's a chance that these passionate folks might quit. So, it's crucial to build long-lasting relationships that help the community thrive in the long run." - SISP*

## 6.5 Worker Talent

A majority of the interviewees mentioned that it is difficult for entrepreneurs to find new talent. KTH Innovation stated, on the contrary, that there are a lot of workers in the Stockholm region who want to join startups instead of the large incumbent firms, arguing that Stockholm has good access to talent; Instead claiming that the problem lies in redirecting people to complex, innovative startups. DTR-1 and SISP emphasized the importance of having the right people on board in order to scale.

*"Skill supply is an important question, affecting different parts of society"* - Swedish Government Offices

When discussing the access to worker talent the interviewees disagreed on the level of available talent as well as the type of talent. On the one hand, SSES argued that the talent currently located in Stockholm possesses excellent design capacity in combination with a large pool of tech developers. The Swedish Companies Registration Office, on the other hand, argued that even though there is a high concentration of competent people in Stockholm, the demand for IT, developers, as well as women in the tech sphere is larger than the supply. Vinnova agreed with the Swedish Companies Registration Office that it is difficult to find highly specialized competence. Similarly, KKS stated that there is a lack of competence across all industries. The Swedish Government Offices explained that if companies cannot find talent, there is a prominent risk that they will move abroad since many companies today are agile and non-dependent on their location.

*"Stockholm is a destination for international talent within tech, engineering, design, and other important areas, which has created a job market with a high concentration of knowledge and competence."* - Vinnova

Looking at why workers seek employment in Stockholm several factors were listed. One reason, as stated by KKS, is the large amount of capital in circulation in the region. According to SSES, the incumbent firms in Stockholm also attract talent into the Stockholm ecosystem since some of these individuals move on to working for startups. The IT bubble bursting in the early 2000s was recognized by SSES, Sting, and Invest Stockholm as a significant event underlying the availability of worker talent in Stockholm's ecosystem. During that time, large incumbent firms had to let go of talents, some of which started their own businesses or started working for existing new ventures. Furthermore, the Business Angel stated that the universities in Stockholm are important for attracting talent.

*“A startup ecosystem depends on international talent. The most successful companies have a global ambition from the start and recruit international talents from the start to build the culture and product to become a global company. When you think ‘global first’, you also need people from different cultures that contribute to this global mindset.”* - Swedish Government Offices

Many of the interviewees touched upon the surrounding aspects of not only attracting worker talent but how to make them stay, especially when it comes to attracting international talent. For these, it is important that their partner finds a suitable occupation and that there are international schools available for their kids. The Swedish Government Offices further explained that Sweden is one of few countries that have the same migration policies regardless of educational level. However, SISP stated that tech startups have a ‘fast track’ solution at Migrationsverket. KKS raised the issue of right-wing politics making it more difficult to import talent. Furthermore, contextual factors, such as the housing market and gang-related crime rates, are also important aspects of the talent attraction possibilities in Stockholm. Thus, attracting international talent is subject to political- and contextual changes making it harder to ensure long-term attractiveness in a region.

*“Talent attraction is not the only challenge regarding international talent. We also need to secure that international talent that moves to Sweden wants to stay. Regions need to focus on integrating international talents and their families into society, securing housing and school, etc. It is not only about attracting talent to Sweden but also about making them stay.”* - Swedish Government Offices

According to Swedish Government Offices there is a need to further strengthen the support structure to help the accompanying families of worker talent in Stockholm. These need to work more strategically in order to make the international competence and their families stay. A number of factors hindering talent attraction were recognized by the interviewees including the increasing gang-related crimes, the housing market, and the geographic location of Stockholm. Another factor highlighted by the City of Stockholm is that for newcomers it can be difficult to fully integrate into Swedish society due to the attitudes and values of Swedes.

## 6.6 Cultural Attitudes

During the interviews, most interviewees highlighted the positive entrepreneurial culture in Stockholm that underlies the ecosystem. According to Blixt Tech and Vinnova, this culture is partly due to the general curiosity of the Swedish people, where it is encouraged to question the status quo, and partly due to the fact that ideas can flow freely which enables new projects to take shape. Nyföretagarcentrum explained that since the burst of the IT bubble in the 2000s, it has been popular to become an entrepreneur.

*“There is a Björn Borg effect - everybody wants to become entrepreneurs” -*  
Business Angel

*“Swedes take pride in our entrepreneurship” - Almi Invest*

It is, however, important to continue to have companies that further reinforce this culture and overall continue to enhance collaboration between the different elements of the ecosystem through a strong entrepreneurial culture, according to the City of Stockholm. The Swedish Government Offices stressed that the culture should not be taken for granted and need constant reinforcement which could be done for example through uplifting positive examples of entrepreneurship.

## 6.7 Histories of Entrepreneurship

The presence of incumbent firms in relation to Stockholm's ecosystem, such as Ericsson, IKEA, H&M, Tele2, Saab, and Volvo, became evident during several interviews. According to

Invest Stockholm, these companies have paved the way for the Stockholm ecosystem and helped attract international investments, which in turn has increased tax revenue and job opportunities. Some interviewees, including Swedish Companies Registration Office, Bright Day Graphene, and the Swedish Government Offices highlighted a few incumbent firms that collaborate with startups and help them gain traction and try out their ideas.

*“Even though not all incumbent firms are good at working with startups they are still important for many startups. Their most important role is as a first friendly customer that can contribute to the fine-tuning of the product and business model, but they also contribute with technical, managerial and market competence.”* - Swedish Government Offices

Notably, none of the entrepreneurs said that they had been inspired by other successful entrepreneurs when deciding to start their own business. They instead highlighted their personal drive and habit of questioning things in their surroundings, leading to entrepreneurial ideas, sometimes as a spinoff from previous experiences and sometimes as something completely new in the hunt for doing something different. These motives behind entrepreneurship are thus more closely related to the entrepreneurs' personal attributes and the overall low hierarchy and societal culture in Stockholm where people dare to question the unknown. However, most interviewees expressed that Stockholm has a number of successful histories of entrepreneurship. This indicates that the entrepreneurs could see this as positive examples of how it is possible to succeed in the region and they also contribute to the overall reputation and positive spiral of Stockholm as an entrepreneurial hub and ‘unicorn factory’.

*“We’re kind of standing on the shoulders of these giants who have already accomplished so much in the Swedish startup ecosystem.”* - SSES

Even though SUP46 recognized the positive impact the founder of Skype, who started investing and helping other entrepreneurs, has had on the ecosystem in Stockholm, other negative examples were mentioned as well; Blixt Tech argued that Stockholm is great at getting startups going through public initiatives but they lack the necessary commercial prerequisites and access to capital. Blixt Tech stated that recycling entrepreneurs' knowledge is generally good but it is needed on a larger scale and in more areas such as sustainability tech,

hardware, and deep tech. Without enough knowledge recycling, there is a risk of losing innovation power.

Another risk mentioned by Invest Stockholm is that Stockholm can get stuck on their old success stories instead of finding solutions for the problems of tomorrow. Furthermore, Stockholm is in a vulnerable position with only a few companies in their portfolio according to Business Sweden.

*“We need to find solutions for the problems of tomorrow and save the world” -*  
Invest Stockholm

NxNano and Vinnova emphasized that one way to enhance entrepreneurship and the creation of new strong businesses is by increasing collaboration between large established firms and startups. This would additionally decrease the risk emphasized by NxNano, of small firms being acquired by incumbent firms and instead allow them to thrive on their own. Ignite<sup>3</sup> is an example of an initiative working for this exact cause, matching startups with large firms and the public sector which helped Bright Day Graphene.

*“Incumbent firms should create standalone initiatives which are not directly in their business. There is right now a fear amongst employees of these firms that if they do something wrong they will lose their job and thus they do not dare to risk it even if they believe in it. It is important that this becomes an external initiative from the firm and that you invite risk capital etc.” - Blixt Tech*

## 6.8 Universities

The universities present in Stockholm were pointed out by various interviewees as the most important actor in the ecosystem, mostly due to their fostering and creation of new innovation and businesses.

*“It’s about preparing people for uncertainty, and one of the most significant ways to do this is through entrepreneurship. I think it starts at the very beginning,*

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<sup>3</sup> Ignite Sweden is a non-profit initiative that aims to foster innovation by connecting startups to large companies and public organizations.

*which is putting people in the right mindset of what problems to solve and how to think about problems. That starts in academia. 100%.” - SSES*

The City of Stockholm also highlighted that universities have an important role in connecting partners from both the public- and private sectors. Many interviewees additionally emphasized the fact that higher education is free as an important contributor to why there is generally a high level of education in Stockholm. Apart from educating individuals who then become entrepreneurs, a handful of universities also have their own incubators and holding companies. These play an important role in helping ideas become businesses, as well as helping businesses become successful. They provide entrepreneurs with for example advisors, connections to people and networks, and capital, all of which are essential to the survival of any firm; Thus being true enablers for entrepreneurship other than solely fostering potential entrepreneurs in school.

One potential risk affecting the future quality of education is related to the arguably poor quality of Swedish lower education, hence the Business Angel argued for the need to increase the quality throughout the entire education system. Apart from this, Invest Stockholm claimed that universities have the possibility to ensure future worker talent and create future entrepreneurs by being attentive to the current needs of the ecosystem. KKS stated on a similar note that entrepreneurial thinking is needed in researchers and students, and that researchers should be taught how to apply for patents in order for them to not lose innovations and ideas to others.

According to Business Sweden and the Swedish Government Offices, another opportunity for universities becomes evident once looking at other ecosystems such as the ones in Silicon Valley and Stanford. Here it is common to have a strong collaboration between academia and business where companies arise from the universities and many entrepreneurs also act as professors, equipping the entrepreneurs of tomorrow with the right toolkits.

*“In the US it is more common with individuals that move between academia and start-ups and the other way around. This is a very efficient way to secure that education is relevant to the tech ecosystem and that the tech ecosystem gets access to the latest research.” - Swedish Government Offices*

Increased collaboration between academia and other actors present in the Stockholm ecosystem would enhance the prerequisites and survival rates for companies whose ideas appeared through research, as well as nudge more students into becoming entrepreneurs. Coming directly from academia, many lack knowledge about the reality of business and need help from experienced professionals in order to avoid classical mistakes. Students can become more equipped for reality through increased collaboration with individual entrepreneurs, having them become guest professors or partnerships with larger firms.

## 6.9 Support Services & Infrastructure

The compiled empirical findings show that there are a lot of available support services and infrastructure present, several of which are publicly funded. According to Bright Day Graphene, these actors all contribute to entrepreneurship in various ways with different kinds of resources in terms of advisors, capital, network access, finding partner companies, and matchmaking with incumbent firms for projects, and events.

*“You want to add different types of resources - money, experience, contacts, and community - this creates a place where entrepreneurs can meet and share their experiences and support one another.” - Sting*

Bright Day Graphene and SSES stated that over the years, the concentration of support services in the form of accelerators, incubators, and science parks has increased in volume and become more granular where they now focus on different areas. Apart from the fact that these can offer support through various resources, they can also act as a sign of quality for their affiliated entrepreneurs and startups according to Bright Day Graphene.

Similarly to the availability of investment capital, it was highlighted in interviews that there is a need for more support in the early stages of entrepreneurship. Interviewed startups also mentioned that they got bad coaching and information at the start of their new business. One underlying reason for this was argued by Blixt Tech who pointed out that these coaches do not possess adequate experiences and/or knowledge within some of the more advanced fields such as deep tech.



*“If you want to start a company and look at for example Vinnova, Almi, SUP46 who provide coaches. All these people are employed by the state and have usually little or no hands-on experience of entrepreneurship, deep tech or venture capital.” - Blixt Tech*

Interestingly, when talking to actors who work for some of these mentioned public support services they instead emphasized that their advisors are very good and knowledgeable. As previously discussed in 6.3, Almi mentioned that some decisions are based on the advisors' “gut feeling” which is argued to, at most times, be correct in the end. One potential solution to this dilemma could be that these publicly funded support services hire more experienced entrepreneurs as their advisors in order to close the gap between them. Additionally, it was recognized during the interviews that the presence of private support services such as Norrskan, foster efficiency and more innovative ideas as the public actors are increasingly challenged to improve in order to measure against the private actors.

## 6.10 Policies & Governance

When talking to the interviewees, it became evident that policies and governance play an important role in making the ecosystem what it is today. Historically, a number of laws and policies together with a political willingness and support from decision-makers were mentioned by the majority of interviewees as important factors laying the foundation for what would then become an entrepreneurial hub. These include amongst others early and wide internet access, broadband policies, computer subsidization, and public schooling.

*“There is a political willingness and support from decision-makers, as well as a positive attitude towards risk-taking and new ideas which have been important for Stockholm’s success.” - Swedish Companies Registration Office*

Another important underlying factor enabling entrepreneurship recognized by several actors is the Swedish social security system. According to Sting, this is important as it encourages entrepreneurs to take a leap as there is a public ‘safety net’ in place. SSES also mentioned the fact that people have the legal right to take a leave of absence to start a business or go back to school and come back within a certain period of time as a contributing factor. Social security is

an interesting phenomenon alleged to have a prominent effect on entrepreneurship where people feel trust in society and leverage this in order to pursue their entrepreneurial dreams. However, looking out at the world at other successful ecosystems, a lot of them are located in countries without this widespread social security, but people still feel secure enough to start new businesses. So perhaps social security is not as important as we want to believe it is.

*"The innovation support system is part of the secret sauce that has shaped Stockholm into what it is today." - SISP*

According to the Swedish Agency for Economic and Regional Growth, there has been an ambition to create a seamless ecosystem from a policy perspective. Stockholm is characterized by low corporate tax, no wealth- or inheritance tax, and it is overall easy to make money on capital as explained by KKS. A majority of the actors agreed that it is easy to start a business from an administrative perspective, for example, the publicly funded Swedish Companies Registration Office with the mission to make reporting more simplified. There are additionally a lot of publicly funded support programs and organizations for innovation and entrepreneurship, several of which were interviewed in this study. However, Almi expressed a desire to map the ecosystem and its elements in order to decrease overlaps and make it clear to the entrepreneur where they can turn for help depending on their specific needs.

Many of the actors pointed out that policies and laws are highly dependent on national and international policymakers who prioritize entrepreneurship, innovation, and SMEs in the budget, making them vulnerable to change. The Business Angel mentioned that changes in for example tax legislation may affect the incentives to become an entrepreneur. Another policy indirectly affecting entrepreneurship is those concerning international worker talent, something which is currently tricky as recognized by both the Swedish Government Offices and Nyföretagarcentrum. Changes in legislation and policy affecting entrepreneurial activities are important to consider as negative changes might push people out of Stockholm, especially today when businesses are digital and not as location dependent as they previously were.

Although there is widespread social security in place and policies and laws which are meant to foster entrepreneurship, there are still areas which have been highlighted as problematic. Blixt Tech emphasized that Stockholm is good at public initiatives to get projects going but unfortunately, not many of these projects make it as companies. Blixt Tech then continued to

explain that a lot of the public capital is, as previously mentioned in section 6.3, invested in large incumbent corporations instead of in smaller companies as they often include more risk, prominently if you look at the deep tech sector. According to the Swedish Government Offices, Stockholm is not as mature from a policy perspective concerning deep tech where they lack the knowledge and act risk averse.

*“Stockholm markets themselves as ‘Home of Impact’ but they need more things in place than just marketing, they need to do it for real.” - KTH Innovation*

A conflicting dynamic was found between interviewees regarding what role and level of involvement governments should have. On the one hand, it was mentioned by the Business Angel and SUP46 that the government should stay out of the ecosystem and instead let private actors run it. This is because too many regulatory policies may hinder innovation and entrepreneurship. On the other hand, Vinnova claimed that governments should get more involved and make riskier investments in more long-term R&D solutions, arguing that this could benefit society as a whole, as they do not require profitability from their investments in the same way private actors do. If not enough R&D investments are made, Stockholm will not be globally competitive as both the US and China invest more in deep tech according to Business Sweden. KKS brought up another important aspect to consider for the future of Stockholm’s ecosystem, namely that public actors need to increase collaboration.

What is interesting in this conflicting view of the government’s involvement is that the actors who argue for an increased level of involvement are publicly funded themselves whilst the ones advocating for less involvement are partly private. This dilemma is complex where different actors are bound to have conflicting opinions in the matter. However, by increasing collaboration between actors the government could potentially gain more crucial knowledge and thus be able to make decisions that might benefit all parties within the ecosystem. Increased knowledge would also allow for better public investments and further benefit entrepreneurial ventures and innovation as well as the overall society.

## 6.11 Markets

Upon discussion with several interviewees, Stockholm was argued to be a well-functioning market for entrepreneurs looking to test their new ventures, acting as a sort of test market. According to SUP46, the important underlying factors to this is the high English literacy of the population as well as many individuals being tech-savvy and early adopters of new innovations.

*“Sweden being a small market and having a very high English literacy rate means that Stockholm is kind of an incubator in itself. You start a company and test it out. If it succeeds, then you’re ready for your big ‘first’ market.” - SSES*

Stockholm has, compared to other markets in the world, a small home market that forces entrepreneurs to think globally from the get-go according to many interviewees. This, in combination with international connections, makes companies more prepared for the larger international markets. The Swedish Agency for Economic and Regional Growth expressed that the international connection is underlying Stockholms' success, and numerous companies use Stockholm as a hub in Europe.

*“No one builds companies solely for Stockholm or Sweden, they often launch directly in English, making them ready for the big international markets from the start.” - SUP46*

According to SUP46, Stockholm as a hub is today more globally connected and less dependent on its home market than ever before. Hence, companies can easily reach a lot of customers without being locally present, making the number of potential customers infinite. Even though this is beneficial for the companies it can be seen as a risk for Stockholm as an ecosystem. Global markets and digital products make it effortless for companies to switch locations and thus leave Stockholm which could negatively impact the ecosystem.

Looking forward, Business Sweden and DTR-1 expressed that Stockholm should work to collaborate even more internationally with other ecosystems. Sweden holds the presidency of the Council of the European Union during the first half of 2023, and SUP46 expressed how this is an excellent opportunity to open discussion and stimulate companies to be

entrepreneurial and work across borders with customers throughout Europe. This could furthermore enable a better collaboration on governmental and policy-related issues in order to foster and incentivize innovation and entrepreneurship on a larger, international scale.

## 6.12 Density of the Ecosystem

Stockholm is characterized by high density between its ecosystem actors with numerous reinforcing activities. Most interviewees highlighted the unique combination of actors in Stockholm and furthermore, how they cannot work in isolation, they are dependent on each other to create value for entrepreneurs. The pay-it-forward culture was frequently mentioned as an essential aspect behind Stockholm's success as an entrepreneurial hub, where actors provide one another with tips, contacts, capital, and partners. This in combination with an abundance of initiatives and joint ventures, both within and stretching over different realms, allows Stockholm to punch above their weight as explained by SSES.

*“Everyone has their function, so they don't compete with one another. It's a close-knit ecosystem with a pay-it-forward culture.”* - Invest Stockholm

Another aspect enhancing the density of the ecosystem concerns Stockholm's modest geographical size and population. Some of the interviewees argued that the small size of the ecosystem entails that everyone knows each other, one way or another, either through formal or informal connections.

*“The ecosystem in Stockholm isn't very big after all.”* - KTH Innovation

Although the ecosystem actors are close-knit and all work together, some interviewees pointed out specific actors as imperative for Stockholm. Both SISP, SSES, the City of Stockholm, Invest Stockholm, and Business Sweden mentioned the universities as the most valuable actor in Stockholm's ecosystem, while SISP, the Business Angel, and the Swedish Government Offices recognized Sting.

Even though SISP stated that actors want to see each other succeed and create something bigger than their own business, some conflicts of interest between actors were acknowledged

when asked about it. Conflicts such as competition for capital, investors having conflicting goals, or the absence of patents resulting in idea thefts can negatively affect the density of an ecosystem. Business Sweden declared how publicly funded organizations and initiatives to a certain extent ‘compete’ for resources, leading to inefficient use of government money. This conflict could be limited through clear-cut responsibilities and handovers between public actors. On a similar note, KKS suggested that there is an overlap between actors in the ecosystem, making it hard for entrepreneurs to know who to turn to in different scenarios. This implies that although density, collaborations, and joint ventures lead to well-functioning ecosystems it also creates inefficiencies and confusion to some extent.

### 6.13 Summarizing Table of Empirical Findings

6.1 Contextual- & Personal Factors	<ul style="list-style-type: none"> <li>• Societal-, macroeconomic- &amp; personal factors were identified as factors needed to explain Stockholm as an entrepreneurial hub. For example, high digital literacy, mobile penetration, high English proficiency, political and economic stability, curiosity, creativity, and acquired taste.</li> <li>• The risks connected to this theme include geographic location, the housing situation, gang-related crimes, policy rate increase, and long lead time to receive a Swedish personal number.</li> </ul>
6.2 Networks & Events	<ul style="list-style-type: none"> <li>• Informal and formal networks were identified as an important element in Stockholm’s ecosystem. Events are important as they allow entrepreneurs to showcase their products and connect with potential financiers, business partners, and customers.</li> <li>• The Stockholm network is well-functioning due to the pay-it-forward culture and lacking sense of competition.</li> <li>• The risks connected to this theme include the need for some businesses to reach outside of Stockholm to find the right network and that the Swedish population is generally reluctant to invite people into their personal networks.</li> </ul>
6.3 Investment Capital	<ul style="list-style-type: none"> <li>• There is a lot of investment capital available in Stockholm, but not for all industries and stages of a business’ life cycle. The competition for financing is tough, and there is too little capital in relation to the potential. Lack of knowledge and risk aversion was identified as explanations for the reluctance to invest in the early stages.</li> <li>• Governments should make the most risky investments as these have the possibility to benefit the entire society, but private investors also need to take more risk.</li> <li>• The risks connected to this theme include the need to look outside of Stockholm to receive funding, macroeconomic risks, and more capital available for digital innovations.</li> </ul>
6.4 Mentors & Dealmakers	<ul style="list-style-type: none"> <li>• Mentors provide support for new ventures when sharing their knowledge and experiences. The pay-it-forward culture was recognized in relation to mentors and dealmakers.</li> <li>• Key individuals have been important to the creation of the Stockholm ecosystem.</li> <li>• The risk connected to this theme is key individuals leaving the</li> </ul>

	ecosystem.
6.5 Worker Talent	<ul style="list-style-type: none"> <li>• Finding the right talent is crucial for entrepreneurs but Stockholm lacks people within highly specialized areas such as IT, developers, and women in the tech sphere.</li> <li>• The risks connected to this theme include attracting international talent and their families and getting them to stay in Stockholm.</li> </ul>
6.6 Cultural Attitudes	<ul style="list-style-type: none"> <li>• There is an underlying positive cultural attitude towards entrepreneurship in Stockholm.</li> <li>• The risks connected to this theme include the continuing need to reinforce the existing culture.</li> </ul>
6.7 Histories of Entrepreneurship	<ul style="list-style-type: none"> <li>• Stockholm houses several large incumbent firms and histories of successful entrepreneurship.</li> <li>• Histories of entrepreneurship were claimed not to underlie the entrepreneurs' urge to start their own ventures.</li> <li>• The risks connected to this theme include entrepreneurial recycling needed on a larger scale, getting stuck on old success stories, and incumbent firms acquiring startups instead of collaborating.</li> </ul>
6.8 Universities	<ul style="list-style-type: none"> <li>• Universities with their educational role, holding companies, and incubators were argued to be one of the most important actors in the ecosystem.</li> <li>• The risks connected to this theme include the poor quality of Swedish lower education and the need for increased collaboration between academia and businesses.</li> </ul>
6.9 Support Services & Infrastructure	<ul style="list-style-type: none"> <li>• There are a lot of available support services and infrastructure in Stockholm.</li> <li>• Support services have increased in volume and become more granular, acting as a form of quality assurance for entrepreneurs' ventures.</li> <li>• The risks connected to this theme include getting support in the early stages of entrepreneurship and lacking knowledge of public support services.</li> </ul>
6.10 Policies & Governance	<ul style="list-style-type: none"> <li>• Policies and governance together with the Swedish social security system have played an important role in making Stockholm what it is today.</li> <li>• It is easy to start a new business administratively.</li> <li>• The risks connected to this theme include policies vulnerable to change, public initiatives inadequate in getting projects to become successful businesses, and capital not invested in small companies.</li> </ul>
6.11 Markets	<ul style="list-style-type: none"> <li>• The Stockholm market was argued to be well-functioning. Stockholm has a small home market compared to other markets in the world which forces entrepreneurs to think globally from the get-go.</li> <li>• The ecosystem has a lot of international connections, and high English proficiency which contributes to the globally connected home market.</li> <li>• The risk connected to this theme was that the global mindset of companies makes it easy for companies to change location and leave Stockholm, negatively impacting the ecosystem.</li> </ul>
6.12 Density of Ecosystem	<ul style="list-style-type: none"> <li>• There is a high density between the ecosystem actors in Stockholm with numerous reinforcing activities. The actors are dependent on each other to create value for entrepreneurs.</li> <li>• The pay-it-forward culture and the size of the region were identified as factors enhancing the density.</li> <li>• The risks connected to this theme include conflicts of interest and</li> </ul>

	overlaps.
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## 7. Discussion

*This chapter will discuss the empirical findings in relation to the theoretical framework for this study. To improve the comprehensibility, the structure will follow the one from the previous chapter. Furthermore, the suggested additions to the theory will be illustrated as an adaptation of Wadichar et al.'s model from the theoretical framework.*

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### 7.1 Contextual- & Personal Factors

Although Brown & Mason (2017) briefly highlight that an ecosystem depends on the cultural, spatial, and historical context in a specific region, it is not given enough space in the general Entrepreneurial Ecosystem literature. Additionally, the societal- and macroeconomic factors highlighted during our interviews did not fit the existing elements gathered from the theoretical framework which underlines the significance of adding it to Wadichar et al.'s (2022) theoretical model. Since these factors cannot be found in the so-called 'general' Entrepreneurial Ecosystem literature, the need to include influences from other related fields in the entrepreneurship literature is deemed necessary. Upon this realization, when spanning the entrepreneurship field, research concerning the contextualization of entrepreneurship as well as dominant entrepreneurial attributes was found. This research seemed appropriate to explain the emerging findings where the theoretical framework is currently lacking. Welter's (2011) and Yangailo & Qutieshat's (2022) research will be presented below as part of the theoretical discussion.

According to Welter (2011), the context has a significant impact on entrepreneurship, arguing that understanding the context in which entrepreneurship occurs is crucial for understanding when, how, and why it happens and who becomes involved. During the interviews, it became evident that the context of Stockholm's Entrepreneurial Ecosystem was deemed an important aspect needed to describe Stockholm's entrepreneurial hub. A number of contextual factors underlying the other elements in the model were recognized by the interviewees. These include the pay-it-forward culture, global mindset, high digital and English literacy, being early adopters of technology, political stability, flat corporate hierarchies, well-functioning infrastructure, and the 2023 economic state with high inflation, and increasing policy rate.

The context of Stockholm impacts the availability of resources, influencing cultural norms and values, legal and regulatory frameworks, and shaping social networks which is in line with Welter's (2011) research. By including the notion of omnibus<sup>4</sup>- and discrete<sup>5</sup> contexts in the existing theoretical model by Wadichar et al. (2022), it can more sufficiently be used to capture and analyze the entrepreneurial phenomenon of Stockholm. Isenberg (2010), also argues that governments need to customize their approach to suit the local entrepreneurship dimensions, style, and climate when building a successful EE. This is more easily facilitated if the contextual factors are included in the model. Adding the contextual factors as a component of analysis will thus enable us to gain a more comprehensive understanding of the interplay between individual agency and contextual factors in shaping entrepreneurial outcomes (Welter, 2011).

Furthermore, the importance of personal factors which was emphasized by the interviewees in explaining the Stockholm ecosystem should also be included in the theoretical model. According to Yangailo & Qutieshat (2022), it is necessary to recognize the specific characteristics of entrepreneurs to better understand the factors that contribute to successful entrepreneurship. In the chosen model adapted by Wadichar et al. (2022), the entrepreneur is recognized as the focal point, and by not analyzing the specific traits of the entrepreneur in question the understanding of the ecosystem is limited. Even in a well-functioning Entrepreneurial Ecosystem with high-density connections between the various elements, there is no guarantee that entrepreneurial activity leading to value creation will occur. By not including the personal attributes of the entrepreneur, the EE theory adapted by Wadichar et al. (2022) is insufficient in explaining the Stockholm ecosystem and potentially explaining other ecosystems as well.

In conclusion, the contextual- and personal factors should be included in Wadichar et al.'s (2022) theoretical model to more accurately be able use the model to explain the Stockholm EE as suggested in Figure 4 on page 67. The contextual factors are needed in the foreground of the existing model, since this is underlying the functionality of the ecosystem, infiltrating the other existing elements. Even though the entrepreneur is the focal point of the existing adaptation by Wadichar et al. (2022), their personal attributes do not get the proper

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<sup>4</sup> Omnibus context refers to a broad perspective, drawing attention to who, what, when, where, and why, often considered as a "lens" (Welter, 2011).

<sup>5</sup> Discrete context refers to specific contextual variables, often considered as a "variable" (Welter, 2011).

representation; Thus, visualizing this in the EE theory will allow the model to recognize these essential aspects. Brown & Mason (2017) emphasize that there is no ‘one-size-fits-all’ when it comes to Entrepreneurial Ecosystem theory due to the heterogeneous nature of different ecosystems. Therefore our theoretical suggestions might not fit other ecosystems although it is necessary to add to explain the case of Stockholm’s ecosystem.

## 7.2 Networks & Events

The network found in the Stockholm region is described, by the interviewees, in a similar way as it is described in the theoretical framework chapter (3). As explained by Brown & Mason (2017), dynamic Entrepreneurial Ecosystems are characterized by their strong informal and formal networks that facilitate the sharing of tacit knowledge and help reduce deficiencies in new ventures, and from the empirical finding, we know this to be true about the Stockholm EE as well. According to the interviewees, the network in Stockholm is important since it enables entrepreneurs to gain insight into best practices, resources, customers, and suppliers, in line with Spigel’s (2017) definition of the network element. Similarly to the research conducted by Steigertahl & Mauer (2023) on EEs in the Nordics, we found that the small population and geographic concentration of the Stockholm ecosystem lead to openness to newcomers and minimal entry barriers to networks and communities. On the other hand, it was also found that the Swedish population is argued by one of the interviewees to be reluctant to invite new people into their personal networks.

Another aspect of the network element that Spigel (2017) emphasizes is that the densest networks are created by frequent face-to-face interactions. However, events that arguably act as a facilitator of face-to-face interactions, do not get proper recognition in the current Entrepreneurial Ecosystem literature nor the chosen theoretical model. When examining the Stockholm EE, the network element in the adapted theoretical model was not sufficient to explain the network situation in Stockholm due to the strong emphasis on events in the empirical findings. Therefore, we argue that the network element in the theoretical model should be expanded by including events due to its significance in the Stockholm ecosystem as illustrated in Figure 4.

### 7.3 Investment Capital

Spigel (2017) emphasized the role of local investors in a region to facilitate the growth of startups. The same significance regarding the availability of capital was also recognized by the interviewees. This highlights that the investment capital element is necessary to describe the ecosystem in Stockholm. Furthermore, the empirical discussion on whether it is possible to receive too much funding is also recognized in the EE literature. According to Isenberg (2010), new businesses must be exposed to the rigors of the market early on, hence they should not be flooded with money. This is something that several interviewees agreed on to a certain extent, however, they simultaneously argued that the availability of capital early on is crucial for the success of innovative ventures, especially within deep tech.

Another association with the literature is the mention of people who have sold off their businesses and reinvested back into the ecosystem. In the empirical findings, this was recognized as an example of the pay-it-forward culture in Stockholm, but in the literature, this is recognized by Brown & Mason (2017) as entrepreneurial recycling, where successful entrepreneurs are seeking to reinvest locally.

According to Edquist (2019), activities that are important for the ecosystem should only be performed by public organizations if they are not, or cannot be, carried out by private organizations. This is an example of why Vinnova is needed to make early-stage investments because the private investment capital system is insufficient. However, the level of sufficiency of the public funding institutions is questioned by the interviewed startups, instead arguing for the need for more private investment in the early stages. If resources are scarce, Isenberg (2010) argues that financial support should be provided to the high potential startups focusing on growth who target a large potential market instead of spreading it among several bottom-of-the-pyramid startups. With this statement in mind, one could argue that the decision of the investment capital element in Stockholm, focusing on the so-called 'safe cards' that can reach the market faster, makes sense. This is, however, inconsistent with Vinnova's strategy to provide monetary support to as many businesses as possible. Vinnova's strategy is also contradictory to Stam's (2015) statement saying that the focus of regional policies has shifted from quantity of entrepreneurship to instead boost quality.

Additionally, macroeconomic factors were also recognized during the discussions about investment capital, speaking to the need to include it in the chosen theoretical model as previously discussed in section 7.1.

#### 7.4 Mentors & Dealmakers

During the interviews, it was identified that mentors play a significant role in the success of prominent startups in Stockholm, which is in line with Spigel's (2017) definition of the element. The recognition of the pay-it-forward culture in terms of mentors is another example of entrepreneurship recycling, as emphasized by Brown & Mason (2017). The key individuals that were identified by the interviewees and their significance to the ecosystem could be compared to that of dealmakers (Spigel, 2017). The individuals identified as mentors or key individuals in the Stockholm ecosystem by the interviewees establish that this element is needed to describe the Entrepreneurial Ecosystem in Stockholm.

#### 7.5 Worker Talent

The importance of the worker talent element for the entire Entrepreneurial Ecosystem in Stockholm was prominent during the interviews, which is highlighted in Wadichar et al.'s (2022) theoretical adaptation. According to Isenberg (2010), governments should focus on removing administrative and legal barriers to entrepreneurship. This is of utter importance in terms of international worker talent, even though it is more of an indirect barrier to entrepreneurship. This follows what was argued about the need to improve the support system for the accompanying families of workers as well as Migrationsverket's policies; Governments should aim to simplify the process of bringing international talent to Stockholm and making them stay.

Furthermore, increasing gang-related crimes, the housing market and the geographic location of Stockholm affecting the worker talent element is another factor as to why it is important to include the contextual element in the chosen theoretical model.

## 7.6 Cultural Attitudes

The cultural attitudes found in Stockholm enhance entrepreneurship as they foster and encourage people to become entrepreneurs and normalize the outlooks of entrepreneurship, which is in accordance with Isenberg (2010). Interviewees have further expressed that it is normalized to have free-flowing ideas which then form projects. This can be seen in line with Spigel's (2017) ideas of an environment fostering the creation of new ventures which involve high levels of risk. Additionally, Isenberg (2010) emphasizes that in order to further encourage entrepreneurship, governments should celebrate thriving entrepreneurial ventures, something which the Swedish Government Offices also argued for.

## 7.7 Histories of Entrepreneurship

Although the success of previous entrepreneurs and Stockholms' reputation as a 'unicorn factory' was highlighted in several interviews, none of the entrepreneurs in this study included it as a motive behind the start of their entrepreneurial journey. This somewhat contradicts the importance of previous success stories as an inspiration for entrepreneurship in the theory (Spigel, 2017). The entrepreneurs instead highlighted personal attributes such as curiosity, drive, and habit of questioning things. This is further in line with the previously made discussion in section 7.1 about the need to include personal attributes in the theoretical model.

During the interviews it became evident that incumbent firms play an important role and moreover that they can potentially play an even bigger role in the Entrepreneurial Ecosystem in the future if there is an increased collaboration between incumbent firms and startups. Although this is somewhat highlighted in the theory where Cho et al. (2021) discusses large incumbent firms in attracting skilled labor, enhancing their managerial skills, and fostering spinout ventures amongst other things, we argue that incumbent firms should receive higher importance than they currently possess.

## 7.8 Universities

As highlighted in the adapted model by Wadichar et al. (2022) universities support the development of human capital and nurture students' entrepreneurial mindsets, something which seems to be working very well in Stockholm. The universities present in this area play

an important role in fostering talents with sufficient knowledge, in line with Steighertahl & Mauer (2023). They also enable entrepreneurship as several of them have their own incubators and holding companies and thus directly enhance entrepreneurship apart from teaching students. Steigertahl & Mauer (2023) highlight that universities play a particular role relating to high technology and innovation as this kind of firm requires worker talent with a high level of knowledge, something which was emphasized by several interviewees when talking about deep tech. This finding is additionally in line with Balawi & Ayoub's (2022) who concluded that Sweden should promote postsecondary education and design curricula which fosters entrepreneurial skills amongst potential entrepreneurs.

## 7.9 Support Services & Infrastructure

There is a high density and variety of support services and infrastructure actors in Stockholm who all contribute to entrepreneurship by providing entrepreneurs with different specialized services, most commonly through different kinds of advisory. The way these actors equip entrepreneurs with knowledge and resources they do not themselves possess or have access to is in line with the theory of EE (Wadichar et al., 2022; Spigel, 2017). The recognition of Norrskan as an important actor in fostering more innovative ideas is backed up by Isenberg (2010) who argues that the private- and nonprofit sector should take some responsibility. In this case, the private actors push the public actors to become better.

## 7.10 Policies & Governance

There are multiple policies and governance elements in Stockholm that encourage entrepreneurship, such as tax benefits and publicly funded support organizations; This is in line with Spigel's (2017) idea of what policies and governance entail in relation to Entrepreneurial Ecosystems. The government also prioritizes removing administrative and legal barriers to entrepreneurship through the Swedish Companies Registration Office as emphasized by Isenberg (2010) in the EE theory. Apart from policies directly affecting entrepreneurs, there are also several indirect aspects that governments control which influence entrepreneurial activity and value creation. One such indirect aspect is the social security system present in Stockholm, which is argued to be an important factor in incentivizing entrepreneurs to test their ideas through new ventures. This is not directly highlighted by

theory but affects the Entrepreneurial Ecosystem in a similar way as other contextual factors and should thus be taken into consideration.

When it comes to the discussion regarding governments' level of involvement, Isenberg (2010) recognizes that governments can and should not do everything alone since the private sector has incentives to develop profit-driven and self-sustaining markets.

### 7.11 Markets

Since the population have a high English literacy, tech-savviness, and are generally early adopters Stockholm should be seen as an open market. Additionally, the internationality of the market and connections to other ecosystems and hubs in the rest of the world makes it easy for entrepreneurs to test their ideas and try out their value offerings with both local and international potential customers. Thus, Stockholm acts as a catalyst for Entrepreneurial Ecosystem development as well as entrepreneurship in general in a similar way as Spigel (2017) argues that a market should.

The size of the home market is not well emphasized by theory, and in some cases, a small home market could imply a lower survival rate of ventures. In the case of Stockholm, the small home market in combination with its international focus and connections makes entrepreneurs think globally from the start. This implies that they are better prepared which highly contributes to the success of the EE as a whole.

### 7.12 Density of the Ecosystem

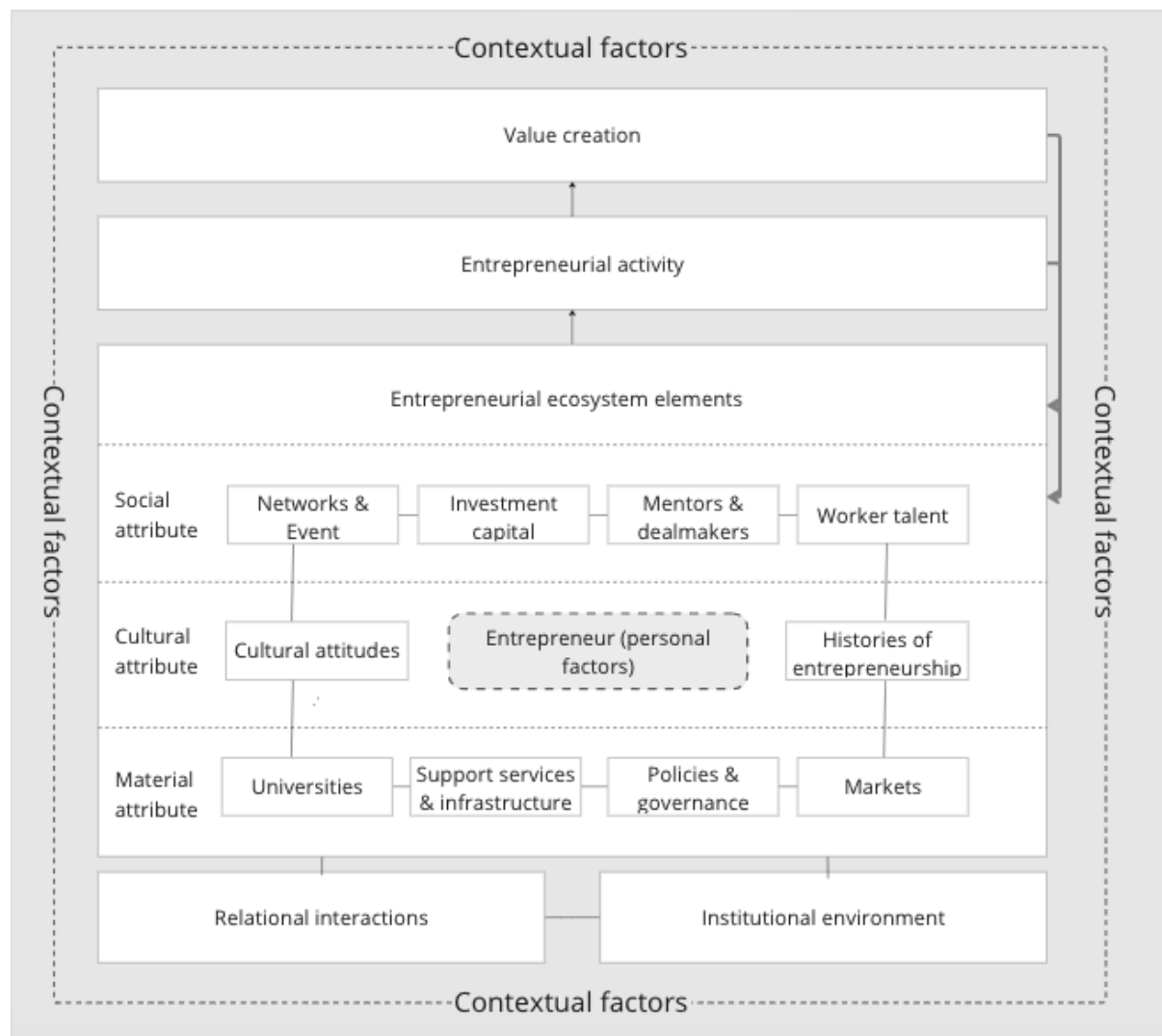
Spigel (2017) argues that density within social networks in a region enables better match between workers and entrepreneurs, something which was found throughout our interviews as well. Brown & Mason (2017) additionally emphasize that dense and dynamic EE's are characterized by frequent face-to-face interactions and strong informal and formal networks which reduce resource deficiencies in new ventures. Stockholm's Entrepreneurial Ecosystem is defined by its small geographical size and population which further speaks to its density as an enabler of entrepreneurial activities. We argue that density is a key indicator of a well-functioning Entrepreneurial Ecosystem as it entails that the elements work together to



enhance entrepreneurship and innovation. Interviewees further empower this analysis as they argued that the actors and elements of EE cannot work in isolation, they need each other to facilitate entrepreneurial activities which in turn enable value creation.

Regarding the limited but existing conflicts of interest between public actors who compete for public funds, creating an inefficient use of the government's budget, we argue in line with Isenberg (2010) that governments cannot do everything on their own. Thus, an increased amount of private initiatives could reduce structural barriers and potentially limit the unclear cut of responsibilities between publicly funded actors.

### 7.13 Theoretical Implications



**Fig. 4.** Suggested adapted model to explain Stockholm's Entrepreneurial Ecosystem, adding contextual- and personal factors and events to Waldichar et al. 's (2022) adaptation.

**Source:** Compiled by the authors based on the adaptation by Wadichar et al.'s (2022).

Based on the above theoretical discussion the following model was compiled as a further adaptation of Wadichar et al.'s (2022) model found in the theoretical framework; The difference being that the additional contextual factors, personal factors, and events are included. The model is a suggestion of how the theory could be improved in order to capture the essence of the Stockholm Entrepreneurial Ecosystem. This does not imply that Wadichar et al.'s (2022) model is faulty since, in accordance with Brown & Mason (2017), there is unlikely to be a 'one-size fits all' policy prognosis for developing different types of ecosystems. However, the suggested adaptation of the model is needed in order to explain the Stockholm EE.

## 8. Conclusions

*The following chapter will present the conclusions of the study and circle back to the two research questions. Due to the nature of the research questions, answering them will result in (1) theoretical contributions, (2) practical implications, and (3) policy implications.*

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### 8.1 Theoretical Contributions

*What are the characteristics of Stockholm seen as an Entrepreneurial Ecosystem?*

The discussion suggests that the Entrepreneurial Ecosystem model adapted by Wadichar et al. (2022) is sufficient to a large extent to explain findings from Stockholm's ecosystem. However, certain elements could not be accounted for by the theory, and due to their empirical significance, we argue that these are essential to explain the Stockholm Entrepreneurial Ecosystem. Contextual- and personal factors, such as the housing situation, increased gang-related crimes, creativity, the willingness to get “down and dirty” and the pay-it-forward culture, as well as events are therefore proposed to be included in the EE model adapted by Wadichar et al. (2022) in order to fully explain the entrepreneurial hub that is Stockholm. Our theoretical contribution thus consists of this new model as shown in Figure 4 in section 7.14. Here, the contextual factors are in the foreground of the EE, events are further emphasized in the network element, and the role of the entrepreneur as the focal point of the theory is clearly visualized, including their personal factors.

### 8.2 Practical Implications

*What challenges do the involved actors perceive and what can be done to overcome them?*

Although the ecosystem as a whole can be argued to be well-functioning through its high density, continuous collaboration between actors and a strong pay-it-forward-culture, there are still challenges to overcome, as shown in 6.13, where the most prominent will be discussed further. Through the interviews with the startup entrepreneurs it became evident that it is more difficult to receive both funding and support if the business is more research-heavy, mostly due to lack of knowledge and risk-aversion amongst investors. Being unable to provide proper aid

for all types of businesses and industries indicates that the investment capital element and the support services and infrastructure element in Stockholm are inadequate. This is especially important for public actors to overcome, by providing proper support and capital for new ventures, since they could leverage these ventures for overall societal benefits.

Another challenge concerns the responsibilities and overlap between actors, specifically the publicly funded ones. By mapping the entire ecosystem, including both public and private actors, it would become clear where entrepreneurs can turn to seek support in the different phases of their startup journey. This would also facilitate collaboration between the actors, increasing the overall entrepreneurial activity and value creation in the Stockholm area. The private support functions were recognized as essential to include in the mapping as they challenge the public actors to perform better.

Lastly, incumbent firms should seek to work with startups, regardless of industry, to achieve common goals and enable recycling of entrepreneurial knowledge. This could be achieved through establishing stand-alone initiatives focusing exclusively on this kind of collaboration, as suggested by one interviewed startup. If innovative new ventures succeed they can benefit both the individual incumbent firm as well as society as a whole.

### 8.3 Policy Implications

*What are the policy implications of these perceived challenges?*

The conducted empirical analysis generated several implications directed at policymakers as well as at the ecosystem as a whole. First, both public and private actors need to increase their investment capital spending in the early stages of a startup's journey, meaning riskier investments with longer ROI for both public and private actors. Secondly, in order to accurately promote Stockholm as the 'Home of Impact', both public and private actors are required to expand their investments in sustainability tech ventures. Thirdly, the government should keep facilitating and simplifying the process of importing international talent and expand the support system catering to the talents and their families' needs. Fourthly, policymakers should facilitate more networking events as these are valuable for the actors in the ecosystem and will enable more entrepreneurial activities to be facilitated.

Finally, the Stockholm ecosystem, with its small domestic market, should continue efforts towards thinking globally to enable the growth of Stockholm-based businesses. Establishing globally significant ventures involves many actors in the ecosystem, including support services, the individual entrepreneur, and universities to mention a few. Overall, Stockholm's ecosystem is well-functioning with a few exceptions and the suggested practical implications are courses of action aiming to improve the ecosystem's performance.

## 9. Limitations & Suggested Future Research

### 9.1 Limitations

As in all research, certain limitations can be found in our study, one being the lacking number of interviewed private actors in the Stockholm ecosystem. These would have allowed us to better capture their work and how they push public actors to be better. Norrskan, a non-profit impact ecosystem that connects entrepreneurs with capital, knowledge, and network, was identified by several interviewees as a prominent actor in the Stockholm ecosystem. Not being able to interview them could thus result in aspects important to the study being overlooked. However, as Norrskan came up during a number of other interviews, we were still able to capture the essentials regarding their role in the ecosystem, even though a first-hand interview would have been preferable.

Additionally, Pugh et al. (2021) argue in their article that a majority of the research surrounding Entrepreneurial Ecosystems focuses on highly innovative, high-tech industries and unicorns. This approach is inherently dangerous as it overlooks non-high-tech industries, underdeveloped regions, and other less favored settings when put into a policy context. In line with this critique, our study also falls into this narrow focus as we primarily look at high-tech companies and an ecosystem that has many unicorns, located in a highly developed region.

### 9.2 Suggested Future Research

As mentioned above, this study is limited to a popular high-tech industry within a highly developed region housing several unicorn companies. Thus, future research should focus on other industries, preferably one which is less popular at the moment as well as an ecosystem located in an underdeveloped region. It would be interesting to see what findings emerge when looking at an industry where it is tough to get access to sufficient capital as well as understand the contextual factors within an underdeveloped region and their effect on the ecosystem and entrepreneurial activities.

Furthermore, the conclusions of this thesis suggest an adaptation of the EE model by Wadichar et al. (2022) in order to fully explain the ecosystem in Stockholm. In order to be able to uncover if our suggested adaptation can and should be seen as part of the EE theory further

research needs to be conducted in other ecosystems. This would allow us to uncover if these missing elements and aspects play an equally significant role in other ecosystems and hence needs to be addressed in the overall EE literature.

## 10. References

- Alaassar, A., Mention, A. L., & Aas, T. H. (2021). Ecosystem dynamics: Exploring the interplay within fintech Entrepreneurial Ecosystems. *Small Business Economics*, 58(4), 2157–2182. <https://doi.org/10.1007/s11187-021-00505-5>
- Alvedalen, J., & Boschma, R. (2017). A critical review of entrepreneurial ecosystems research: towards a future research agenda. *European Planning Studies*. Volume. 887-903. 10.1080/09654313.2017.1299694.
- Alvesson, M., & Sköldbberg, K. (2017). *Reflexive Methodology: New Vistas for Qualitative Research*. SAGE Publications.
- Audretsch, D., Grilo, I., & Thurik, R. (2007). Explaining entrepreneurship and the role of policy: A framework. *Handbook of research on entrepreneurship policy*, 1-17 (2007). 10.4337/9781847206794.00005.
- Autio, E. (2016). Entrepreneurship Support in Europe: Trends and Challenges for EU Policy. 10.13140/RG.2.1.1857.1762.
- Balawi, A., & Ayoub, A. (2022). Assessing the Entrepreneurial Ecosystem of Sweden: A Comparative Study with Finland and Norway using the Global Entrepreneurship Index. 2. 1-19. 10.1108/JBSED-12-2021-0165.
- Bell, E., Bryman, A., & Harley, B. (2019) *Business Research Methods*. 5th Edition Oxford university Press. Fifth Edition.
- Birt, L., Scott, S., Cavers, D., Campbell, C., & Walter, F. (2016). Member Checking: A Tool to Enhance Trustworthiness or Merely a Nod to Validation?. *Qualitative Health Research*. 26. 10.1177/1049732316654870.
- Björner, E., & Zetterberg, O. (2019). Stockholm. The tale of the unicorn factory. *European Investment Bank*. DOI: [10.2867/40107](https://doi.org/10.2867/40107)



Brown, R., & Mason, C. (2017). Looking inside the spiky bits: a critical review and conceptualisation of entrepreneurial ecosystems. *Small Business Economics*. 49. 10.1007/s11187-017-9865-7.

Bryant, A., & Charmaz, K. (2007) *The SAGE Handbook of Grounded Theory*. Los Angeles: SAGE.

Cho, D. S., Ryan, P., & Buciuni, G. (2022). Evolutionary Entrepreneurial Ecosystem: A research pathway. *Small Business Economics*. 58. 10.1007/s11187-021-00487-4.

Cowell, M., Lyon-Hill, S., & Tate, S. (2018). It takes all kinds: Understanding diverse entrepreneurial ecosystems. *Journal of Enterprising Communities: People and Places in the Global Economy*. 12. 00-00. 10.1108/JEC-08-2017-0064.

Doing Business - Economy Profile (Sweden) (2020), “Doing business”. Available from: <https://archive.doingbusiness.org/content/dam/doingBusiness/country/s/sweden/SWE.pdf> [Accessed 10 mars 2023].

Dubois, A., & Gadde, L-E. (2002). Systematic Combining: An Abductive Approach to Case Research. *Journal of Business Research*. 55. 553-560. 10.1016/S0148-2963(00)00195-8

Edquist, C. (2019). Towards a holistic innovation policy: Can the Swedish National Innovation Council (NIC) be a role model?, *Research Policy*, 48(4), 869-879. <https://doi.org/10.1016/j.respol.2018.10.008>.

European Commission. 2021. European Union, Publications Office. [Online]. Luxembourg: Publications Office of the European Union. Available from: <https://op.europa.eu/en/publication-detail/-/publication/b76f4287-0b94-11ec-adb1-01aa75ed71a1/language-en> [Accessed 10 mars 2023].

Flick, U. (2014). *The SAGE handbook of qualitative data analysis*. SAGE Publications Ltd, <https://doi.org/10.4135/9781446282243>.

Gioia, D., Corley, K., & Hamilton, A.L. (2012). Seeking qualitative rigor in inductive research: notes on the Gioia Methodology. *Organ. Res. Methods*. 16. 15-31.

Hubner, S., Most, F., Wirtz, J., & Auer, C. (2022). Narratives in Entrepreneurial Ecosystems: Drivers of Effectuation versus Causation. *Small Business Economics*.  
10.1007/s11187-021-00531-3.

Isenberg, D. J. (2010). How to start an entrepreneurial revolution. *Harvard Business Review*, 88(6), 40–50. <https://hbr.org/2010/06/the-big-idea-how-to-start-an-entrepreneurial-revolution>

Invest Stockholm. (2020). Stockholm as a global force: The significance of headquarters in the Nordics and the Stockholm region. Available from:  
[https://www.investstockholm.com/globalassets/invest/reports/hq\\_report\\_2020.pdf](https://www.investstockholm.com/globalassets/invest/reports/hq_report_2020.pdf). [Accessed 15 mars 2023].

Invest Stockholm. (n.d.). . Welcome to Stockholm - Home of Impact. Available from:  
<https://www.investstockholm.com/documents/157/Stockholm-home-of-impact.pdf> [Accessed 15 mars 2023].

Kristensen, I. F., Pugh, R. & Grillitsch, M. (2023) Leadership and governance challenges in delivering place-based transformation through Smart Specialisation, *Regional Studies*, 57:1, 196-208, DOI: 10.1080/00343404.2022.2090536

Kvale, S. & Brinkmann, S. (2014). *Den kvalitativa forskningsintervjun*, uppl. 3:3. Studentlitteratur AB. Lund, SE.

Lafuente, E., Acs, Z.J., Sanders, M. et al. The global technology frontier: productivity growth and the relevance of Kirznerian and Schumpeterian entrepreneurship. *Small Bus Econ* 55, 153–178 (2020). <https://doi.org/10.1007/s11187-019-00140-1>

Lincoln, Y. & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE Publications Ltd. Newbury Park, CA.

López-Rubio, P., Roig-Tierno, N. & Mas-Tur, A. Regional innovation system research trends: toward knowledge management and entrepreneurial ecosystems. *Int J Qual Innov* 6, 4 (2020). <https://doi.org/10.1186/s40887-020-00038-x>

Mason, C., & Brown, R. (2014). Entrepreneurial Ecosystems and growth-oriented entrepreneurship. *OECD LEED Programme and the Dutch Ministry of Economic Affairs*. <https://www.oecd.org/cfe/leed/Entrepreneurial-ecosystems.pdf>

Maroufkhani, P., Wagner, R., & Wan Ismail, W. K. (2018). Entrepreneurial Ecosystems: A systematic review. *Journal of Enterprising Communities: People and Places in the Global Economy*, 12(4), 545–564. <https://doi.org/10.1108/jec-03-2017-0025>

Marshall, A. (1920) *Principles of Economics*. 8th Edition, Macmillan, London.

Maxwell, J. A. (2012). *Qualitative research design: An interactive approach* (Vol. 41). Sage publications.

OCED. (2018). Inclusive entrepreneurship policies: country assessment notes (Sweden), Organisation for Economic Co-operation and Development. OCED. Available from: <https://www.oecd.org/cfe/smes/SWEDEN-IE-Country-Note-2018.pdf> [Accessed 10 mars 2023].

OECD. (2021). High-tech employment is concentrated in the Stockholm region: Regional share of employment (%), TL2 regions, 2019. In *OECD economic surveys: Sweden 2021*. OECD Publ. Available from: <https://doi.org/10.1787/7c3b9687-en> [Accessed 15 Mars 2023]

Pugh, Rhiannon & Schmutzler, Jana & Tsvetkova, Alexandra. (2021). Taking the systems approaches out of their comfort zones: Perspectives from under explored contexts. *Growth and Change*. 52. 608-620. 10.1111/grow.12510.

Pugh, R., Soetanto, D., Jack, S.L. et al. Developing local entrepreneurial ecosystems through integrated learning initiatives: the Lancaster case. *Small Bus Econ* 56, 833–847 (2021). <https://doi.org/10.1007/s11187-019-00271->

Riach, K. (2009). Exploring Participant-centred Reflexivity in the Research Interview. *Sociology*, 43(2), 356–370. <https://doi.org/10.1177/0038038508101170>

SCB. (2021). Research and development in Sweden 2021. *Increased expenditures for R&D in Sweden*. Available from: <https://www.scb.se/en/finding-statistics/statistics-by-subject-area/education-and-research/research/research-and-development-in-sweden/pong/statistical-news/research-and-development-in-sweden-2021/> [Accessed 12 Mars 2023].

SCB. (2022). Befolkningsstatistik. *Folkmängd i riket, län och kommuner 31 december 2021 och befolkningsförändringar 2021*. Available from: <https://www.scb.se/hitta-statistik/statistik-efter-amne/befolkning/befolkningens-sammansattning/befolkningsstatistik/pong/tabell-och-diagram/folkmangd-och-befolkningsforandringar---hela-riksstatistik/folkmangd-i-riket-lan-och-kommuner-31-december-2022-och-befolkningsforandringar-2022/> [Accessed 12 Mars 2023].

Spigel, Ben. (2016). Developing and governing entrepreneurial ecosystems: the structure of entrepreneurial support programs in Edinburgh, Scotland. *International Journal of Innovation and Regional Development*. 7. 141. 10.1504/IJIRD.2016.077889.

Spigel, B. (2017). The Relational Organization of Entrepreneurial Ecosystems. *Entrepreneurship Theory and Practice*, 41(1), 49–72. <https://doi.org/10.1111/etap.12167>

Spigel, B. & Harrison, R. (2017). Towards a Process Theory of Entrepreneurial Ecosystems. *Strategic Entrepreneurship Journal*. 12. 10.1002/sej.1268.

Spigel, B. & Vinodrai, T. (2021) Meeting its Waterloo? Recycling in entrepreneurial ecosystems after anchor firm collapse, *Entrepreneurship & Regional Development*, 33:7-8, 599-620, DOI: 10.1080/08985626.2020.1734262

Stam, E. (2015). Entrepreneurial Ecosystems and Regional Policy: A Sympathetic Critique. *European Planning Studies*. 23. 10.1080/09654313.2015.1061484.

Steigertahl, L., & Mauer, R. (2023). Investigating the success factors of the Nordic entrepreneurial ecosystem – talent transformation as a key process. *The International Journal of Entrepreneurship and Innovation*, 24(1), 7–18. <https://doi.org/10.1177/14657503211051217>

Swedish Cleantech. (2020). Find leading Swedish Cleantech Companies. Available from: [https://swedishcleantech.com/?gclid=CjwKCAjwiOCgBhAgEiwAju5whAvgqsciO\\_uTTrvghhpcIOw\\_HGRmCrzEr6AxFBggW8ntDnt0lBnEgRoCgE0QAvD\\_BwE](https://swedishcleantech.com/?gclid=CjwKCAjwiOCgBhAgEiwAju5whAvgqsciO_uTTrvghhpcIOw_HGRmCrzEr6AxFBggW8ntDnt0lBnEgRoCgE0QAvD_BwE) [Accessed 26 February 2023].

The Swedish Climate startup Map. (2023). Available from: <https://climatestartups.se/the-map/> [Accessed 26 February 2023].

Wadichar, R. K., Manusmare, P., & Burghate, M. A. (2022). Entrepreneurial Ecosystem: A Systematic Literature Review. *Vision*, 0(0). <https://doi.org/10.1177/09722629221093866>

Welter, F. (2011). Contextualizing Entrepreneurship—Conceptual Challenges and Ways Forward. *Entrepreneurship Theory and Practice*, 35(1), 165–184. <https://doi.org/10.1111/j.1540-6520.2010.00427.x>

Wennekers, S., van Wennekers, A., Thurik, R. et al. Nascent Entrepreneurship and the Level of Economic Development. *Small Bus Econ* 24, 293–309 (2005). <https://doi.org/10.1007/s11187-005-1994-8>

World Bank. (2021), “Ease of doing business rankings”. Available from: <https://www.doingbusiness.org/en/rankings?region5oecd-high-income> [Accessed 22 February 2023].

Wurth, B., Stam, E., & Spigel, B. (2021). Toward an Entrepreneurial Ecosystem Research Program. *Entrepreneurship Theory and Practice*. [https://doi.org/10.1177\\_1042258721998948](https://doi.org/10.1177_1042258721998948)

Yangailo, T., Qutieshat, A. Uncovering dominant characteristics for entrepreneurial intention and success in the last decade: systematic literature review. *Entrep Educ* 5, 145–178 (2022). <https://doi.org/10.1007/s41959-022-00073-z>

Yin, R. K. (2015). *Qualitative Research from Start to Finish*, Second Edition. Guilford Publications.

## 11. Appendix

### 1. Babson Entrepreneurship Ecosystem Project framework (Isenberg, 2010).

**Do public leaders:**

Act as strong, public advocates of entrepreneurs and entrepreneurship?  
Open their doors to entrepreneurs and those promoting entrepreneurship?

**Do governments:**

Create effective institutions directly associated with entrepreneurship (research institutes, overseas liaisons, forums for public-private dialogue)?  
Remove structural barriers to entrepreneurship, such as onerous bankruptcy legislation and poor contract enforcement?

**Does the culture at large:**

Tolerate honest mistakes, honorable failure, risk taking, and contrarian thinking?  
Respect entrepreneurship as a worthy occupation?

**Are there visible success stories that:**

Inspire youth and would-be entrepreneurs?  
Show ordinary people that they too can become entrepreneurs?

**Are there enough knowledgeable people who:**

Have experience in creating organizations, hiring, and building structures, systems, and controls?  
Have experience as professional board members and advisers?

**Are there capital sources that:**

Provide equity capital for companies at a pre-sales stage?  
Add nonmonetary value, such as mentorship and contacts?

**Are there nonprofits and industry associations that:**

Help investors and entrepreneurs network and learn from one another?  
Promote and ally themselves with entrepreneurship (such as software and biotechnology associations)?

**Are there educational institutions that:**

Teach financial literacy and entrepreneurship to high school and college students?  
Allow faculty to take sabbaticals to join start-ups?

**Does the public infrastructure provide sufficient:**

Transportation (roads, airports, railways, container shipping)?  
Communication (digital, broadband, mobile)?

**Are there geographic locations that have:**

Concentrations of high-potential and high-growth ventures?  
Proximity to universities, standards agencies, think tanks, vocational training, suppliers, consulting firms, and professional associations?

**Are there formal or informal groups that link:**

Entrepreneurs in the country or region and diaspora networks—in particular, high-achieving expatriates?  
New ventures and local offices of multinationals?

**Are there venture-oriented professionals, such as:**

Lawyers, accountants, and market and technical consultants who will work on a contingency basis, or for stock?

**Are there local potential customers who are:**

Willing to give advice, particularly on new products or services?  
Willing to be flexible with payment terms to accommodate the cash flow needs of young, rapidly growing suppliers?

## 2. Interview Guides

### General Interview Guide

1. How do you promote entrepreneurship through your work and with what means?
2. What factors/policies are behind Stockholm's historical success as an innovation hub?
3. What actors in Stockholm contribute to entrepreneurship and innovation?
  - a. How do these actors interact with each other?
  - b. Are there stronger links between certain actors than others?
  - c. Are there any actors that are more important for the Entrepreneurial Ecosystem in Stockholm than others? Why?
4. Are there any conflicts of interest between the different actors?
5. What is today the most common problem that entrepreneurs face in the startup phase of their company?
6. What needs to change/be strengthened in order for Stockholm to maintain its status as an innovation hub leader?
  - a. Is there another city doing something extraordinary that Stockholm should follow?
7. Are there any risks in the future that could threaten Stockholm's leading position as an innovation hub? How can these be tackled?
8. Are there any new opportunities that in the future could strengthen Stockholm as an innovation hub?

Show our model of EE

1. Do you think this model is sufficient to explain why Stockholm is a successful innovation hotspot?
  - a. Are there elements that you think are missing or redundant in this model?

### Additional Question Asked to Public Actors

1. Do you collaborate with decision-makers to promote policies that benefit entrepreneurs/startups?

### Interview Guide Startups

1. What are your previous work experiences?
2. Have you been inspired by other entrepreneurial success stories?
3. Why did you choose to establish the company in Stockholm?
4. What tools have been available and which have you used during the startup of your company?
  - a. Which have been most significant?
5. What actors are in Stockholm who contribute to entrepreneurship and innovation?
6. What needs to change/be strengthened in order for Stockholm to maintain its status as an innovation hub leader?
7. Are there any risks in the future that could threaten Stockholm's leading position as an innovation hub? How can these be tackled?
8. Are there any new opportunities that in the future could strengthen Stockholm as an innovation hub?



Show our model of EE

1. Have you used all of these elements in your startup journey, if yes how? If not, which ones have you not used? Is there anything missing?

### 3. Description of interviewed actors

Descriptions are made based on the actors' own websites.

Actor	Description
Stockholm School of Entrepreneurship (SSES)	Provides entrepreneurship education for students and alumni of Stockholm's leading universities: KI, Konstfack, KTH, SSE, KMH, and SU.
City of Stockholm	Sweden's largest municipality, working to give its residents great service from decisions in municipal council, committees, and company boards.
Swedish Companies Registration Office	Creates the conditions needed for establishing trust within the business sector. Their primary role is to ensure the quality of company information and provide it, which contributes value to society.
Invest Stockholm Business Region	The official business agency for the city of Stockholm, responsible for the international promotion and strategic development of the city. They are dedicated to promoting and developing the city as an attractive and sustainable destination for business, international investors, talent, and visitors.
Nyföretagarcentrum	Stimulates the increased rise of new ventures through counseling.
Business Sweden	Business developers with a unique mandate to help Swedish companies grow global sales and international companies invest and expand in Sweden.
Knowledge Foundation (KKS)	Funds research and competence development at Sweden's university colleges and new universities with the purpose of strengthening Sweden's competitiveness.
Vinnova	Vinnova is Sweden's innovation agency. Their mission is to strengthen Sweden's innovative capacity and contribute to sustainable growth. They work to ensure that Sweden is an innovative force in a sustainable world.
Swedish Agency for Economic and Regional Growth	The Swedish Agency for Economic and Regional Growth, is a government agency that works to promote sustainable growth and competitive companies throughout Sweden. They achieve this by supporting and strengthening companies and regions.
Swedish Government Offices	The Swedish Government Offices is an authority whose mission is to support the government to rule the country and realize its politics.
SUP46	SUP46 is a Swedish startup community, helping tech companies grow faster through a world-class ecosystem of investors, advisors, and partners. Only the most exciting and innovative companies

	from all over Sweden, within tech, are accepted as members. The vision for SUP46 is that all startup members will become global game-changers.
Angel Investor	A pioneer within startup investments.
NxNano	A sustainability tech company, their solution is about utilizing liquid flows in all heating and cooling systems, and with a simple injection of HTF Compact during ongoing operation increases heat or cooling capacity which radically reduces electricity consumption and other loads on existing systems and is experienced positively by users.
Sting	Sting is an accelerator for startups. They are a non-profit organization, owned by a public-private foundation. This makes them an independent, founder-centric, player who always acts based on what's best for the startup.
DTR-1	A sustainability tech company providing a software solution that power system operators can use to transfer more capacity using already operational transformers, giving room for the expansion of renewable power sites and more flexibility.
Almi	Almi offers loans to companies with growth potential and assists in their business development. This applies to businesses in the startup phase as well as established companies.
Blixt Tech	Blixt develops technologies that enable software control of electricity and create the spark for an entirely new shift in energy. Their critical components will accelerate the transformation to sustainable, all-electric technologies worldwide, on all levels of society, like energy, mobility, and industry 4.0.
SISP	Swedish Incubators & Science Parks (SISP) is the Swedish industry association for Swedish incubators and science parks. They have 61 members all over Sweden who have 5 000 companies and about 70 000 employed.
KTH Innovation	As a hub for innovation and entrepreneurship in one of the world's most knowledge-intensive regions, KTH has the best conditions for those who want to create new technology and solutions that can contribute to a better future.
Almi Invest	Almi Invest provides venture capital for early-stage, emerging companies with high growth potential and a scalable business concept.
Bright Day Graphene	Bright Day Graphene strives to offer great performing materials without negatively impacting our earth.