Sustainable Start-Up Ecosystems in Terms of Capital Investment and Other Business Opportunities for Corporate Involvement – A Comparative Analysis of Hong Kong and Shenzhen

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| Received: February 17, 2023 | Accepted: May 23, 2023 | Online Published: May 30, 2023 |
|-----------------------------|---------------------------------------|--------------------------------|
| doi:10.5539/ijef.v15n6p75 | URL: https://doi.org/10.5539/ijef.v1: | 5n6p75 |

Abstract

Start-ups play one of the most significant roles in global economic development. The business environment or the business ecosystem is well-known in entrepreneurship. A start-up's success level is positively correlated with the environment in which it operates. One of the supporting factors in the start-up ecosystems is corporations, which try to connect with start-up companies using corporate acceleration programs. Another one is a higher engagement of educational institutions within the start-up environment. The study is a comparative analysis of start-up ecosystems in Shenzhen and Hong Kong from a corporate initiative perspective. The study applied a triangulated approach, synergizing primary data from interviews with relevant start-up ecosystem stakeholders and secondary data to further examine and support the initial findings. The results identified and compared the development levels of the Hong Kong and Shenzhen start-up ecosystems and were sufficient to create recommendations and best practices for start-ups and corporates interested in the respective areas. The findings suggest that Shenzhen's start-up ecosystem is more attractive for corporations than Hong Kong's within the context of innovation, technology, and talent. Hong Kong will first maintain its role as a business hub and as an international asset management center and, secondly, promote the development of technologies and innovation to increase its global competitiveness. The Outline Plan positions Shenzhen as a leading innovation hub within the broader area aiming to increase the city's level of internationalization.

Keywords: Start-up Ecosystem, Shenzhen, Hong Kong, Corporate Start-up Engagement

JEL codes: L53.

1. Introduction

James Moore (1993, pp. 75-86) defined the term ecosystem in entrepreneurship, implying that companies cannot evolve with full potential without excellent cooperation, customers, suppliers, and financial institutions. Therefore, start-up companies can develop and grow more efficiently with the support and benefits of the regional start-up ecosystem (Mocnik & Rus, 2015, p. 16). There have been significant changes in the past decades in the concept of the ecosystem. Regarding business and within the application to the business field is the concept identified as a business ecosystem, whereby companies collaborate to enhance the added value for the stakeholders (Tripathi et al., 2019, p. 18). A start-up ecosystem functions similarly, as start-up companies interact with their supporting elements to enhance and accelerate their development and growth (Tripathi et al., 2019, p. 20).

Silicon Valley, New York City, Los Angeles, Boston, and London are the top five performing start-up ecosystems ranked by their performance, funding, market reach, talent, and start-up experience (Compass, 2015). The highest-ranked start-up ecosystems dominate activity levels in most sub-sectors (GSER, 2018, p. 8). However, there is an uprising of other ecosystems and clusters focusing on specific industries. GSER (2018, p. 34) suggests 12 challenger start-up ecosystems, seven of which are from the Asian-Pacific region, indicating a growth potential of ecosystems within the area. China is the only country among the challengers with two nominated ecosystems, Hangzhou and Shenzhen.

Through strategic cooperation, corporations are possibly able to test new technologies and receive access to innovation, with lower cost and risk regarding their core businesses, whereby start-ups can receive various resources from their corporate partners, like marketing knowledge and experience, which are the business capabilities which the majority of start-up companies lack, as they often fail to analyze the market and struggle to identify the demand for their products (Mocker et al., 2015, p. 7).

The start-up ecosystem in Shenzhen, also called the "Silicon Valley of Hardware", is a metropolis in the Pearl River Delta area. Compared to other start-up ecosystems of similar size, innovation represents a challenge for the start-up ecosystem of Hong Kong, however, is its recent growth equal to the top five fastest-growing ecosystems among the top 20 (Start-up Genome, 2015, p. 5).



Figure 1. Greater Bay Area / Guangdong Province (Invest HK 2019)

Note. Two additional Special Administrative Regions of Macao and Hong Kong create the Greater Bay Area (Figure 1). Shenzhen and Hong Kong have performed and grown differently despite the short distance between the two cities in economic and industrial development.

The economic reforms regarding international trade have triggered Western companies to outsource their production and manufacturing, enabling smaller companies from Shenzhen. Also known as the "Shanzhai Cluster"; smaller companies' clusters operated transparently throughout the supply chain processes within an open-source culture (Fernandez et al., 2016, p. 31). In the past, Chinese producers in Shenzhen succeeded in second-generation innovation, a mix of established technologies and products to create something new. The phenomena can also be described as combining modular production practices and informal networking using open innovation (Keane & Jing, 2012, p. 226). Newly established enterprises' growth accompanies the growth of the industry sector and manufacturing in specific.

The growth of the industrial sector in Shenzhen was first recognized by institutions and investors from Hong Kong, one of the first to provide foreign capital investment into the city (Lundberg, 2019, p. 5). Despite the recent social instabilities and restrictions in global trade, Hong Kong is one of the top competitive economies globally, ranked third by the WEF in the Global Competitiveness Report and the World Bank in Doing Business Report 2020 (Invest HK 2019, 6). The biggest strength of Hong Kong is the presence of financial institutions and the strong financial sector, enabling Hong Kong to be the global leader in equity funds raised with IPO (Invest HK, 2019, p. 6). On the other hand, according to the report by WEF, Hong Kong needs more innovation capabilities and has to evolve from a financial center to a hub driven by innovation. Authors suggest the need for more entrepreneurial spirit in Hong Kong's culture, describing it as more traditional and less prone to risk regarding capital investment. The study by EntreLink (2018, p. 18) suggests that despite the high liquidity and capital presence in Hong Kong, start-ups need help finding funding within the private sector, especially in the early stages of the start-up's development. Compass supported the statement (Compass, 2019, p. 7), pointing out the need for more angel investors and the void in the interest of local-based venture capital for early-stage start-up capital investment. Furthermore, the study suggests that the low funding activity can be explained not by investors' lack of interest in early-stage capital investment.

This paper applies the concept of the start-up ecosystem to Shenzhen and Hong Kong to examine and compare the two systems of institutions, businesses, and processes between them and investigate the status quo of corporate acceleration and involvement in the two ecosystems. The authors chose both ecosystems since they follow the principle of sustainability, where sustainability is understood as something that can be sustained, i.e., something that is "bearable" and "capable of being continued at a certain level." Both ecosystems are sustainable for the following reasons: Vertically-integrated gatekeepers do not dominate them, they consist of many specialized organizations that work together, they have start-up mentors that help entrepreneurs across several programs (not just one), and finally, they share ideas and learning because they understand that ideas mean nothing, but the execution does. With the use of primary data collected through interviews and relevant secondary data, a definite comparison between the respected ecosystems is developed regarding their relative potential for corporate engagement:

- compared-up ecosystems of Shenzhen and Hong Kong,
- the current state of corporate acceleration in the two ecosystems,
- objectives of corporations within the start-up ecosystem,
- most used corporate acceleration programs,
- the level of strategic and financial business opportunities within the ecosystem in Hong Kong compared to Shenzhen for corporate involvement.

Primary and secondary data are used to pursue the study's objectives, which are narrowly defined by the research questions in the third section. The main aim is a comparison through a corporate scope. Therefore, the framework for the comparison was created, with the help of literature on start-up ecosystems and corporate start-up engagement, to corporate's objectives and types of employment.

The paper is structured as follows: First, the literature review on the topic has been performed. The Materials and Methods section follows, providing the problem statement, the research questions that have served as guidelines throughout the research process, the research method, and the content analysis approach. The following section deals with the research results, focusing on the status quo of both ecosystems and analyzing various supporting factors. The paper finishes with the Conclusion and Appendix (Interview guideline).

This research's novelty is two-fold: First, it is a competitive comparison of the start-up ecosystems in Shenzhen (Chinese Guangdong Province) and Hong Kong (Chinese Special Administrative Region) from a corporate and not purely theoretical perspective to research. Second, since the main objective is a comparison through a corporate scope, the authors created a framework for the comparison, with the help of literature on start-up ecosystems and corporate start-up engagement, to clearly define the corporates' objectives and types of employment.

The research findings developed best practices and recommendations for start-ups operating or willing to enter Shenzhen or Hong Kong. Another paper's novelty suggests positive aspects of the respective ecosystems for corporations and large companies, potentially benefiting from the relocation or subsidiary opening within the Greater Bay Area.

2. Literature Overview

To first explore the phenomena and the start-up ecosystem's critical characteristics, the literature on the topic was collected and analyzed in the literature review. To assess the relevant aspects of the start-up ecosystem for this study, the literature on corporate engagement with start-ups was examined and used to create a framework and identify categories for the final comparison of start-up ecosystems. The following section provides insight into the start-up ecosystem, its supporting factors, the roles of corporations within the ecosystem, and how corporations collaborate with start-ups.

2.1 The Start-Up Ecosystem

A start-up is a company, a partnership, or a temporary organization, searching for a repeatable and scalable business model (Blank, 2010, p. 11). It is essential in innovation processes (Spender et al., 2017, p. 18). At the early stages of start-up development, new ideas are created and introduced to the market, potentially evolving the start-up into a sustainable enterprise. Spender et al. describes a start-up as a new temporary venture without a history of operations and state that the success of a start-up highly depends on the level of its cooperation with external partners since they lack financial and human resources, which are needed for the development and growth ((Spender et al., 2017, p. 15). Therefore, start-ups lack resources and depend on external partners.

The environment where start-ups operate in the context of a start-up ecosystem refers to a network of connected

and interactive elements and factors within a limited region, even though the interdependence of the elements within the ecosystem is the level of contribution to the success of a start-up among the actors different (Van der Wiele, 2017, p. 4).

To provide an overview and synergies of a start-up ecosystem, Tripathi et al. (2019, p. 11) categorized a start-up ecosystem network into seven elements: Entrepreneur, Support factors, Finance, Demographics, Market, Education, Human Capital, and Technology. The authors highlight the importance of the support factors with some sub-elements: Incubators, Accelerators, Co-working spaces, Events, and Mentors. Specific sub-elements of supporting factors like incubators or accelerators contribute to other primary elements, such as finance, market, and technology, emphasizing their relevance within the ecosystem. Accelerators, for example, can provide further funding or other services like guidance to accelerate the start-up's business.

Similarly to the concept of an entrepreneurial ecosystem by the World Economic Forum (WEF) (WEF, 2013, p. 7), the support system pillar resembles the support factors of Tripathi et al. (2019, p. 11) with four components: mentors/advisors, professional services, incubators/accelerators and network of entrepreneurial peers. From a broader perspective, Spender et al. (2017, p. 26) identify four main influences in terms of support for start-ups as incubators, venture capitalists, large corporations, and universities. The authors point out that managing the relations with actors offering support within the ecosystem is necessary for a successful start-up.

By aligning categorizations by WEF (2013, p. 7), Tripathi et al. (2019, p. 11), and Spender et al. (2017, p. 26), we can acknowledge the importance of supporting factors within the start-up's environment. Hence, all the categorizations also indirectly emphasize the importance of the market, institutions, financing, regulations, talent, and infrastructure. However, for this research, without minimizing the role of other factors, incubators and accelerators, venture capital, large corporations, and educational institutions are explored, as identified by Mocker et al. (2015, p. 26). Additionally, the role of government regulations within the ecosystem is examined to determine the connection with the start-up. The authors selected accelerators to acknowledge the public good's importance in impacting local and regional economic development with university accelerators or incubation programs supported by state funding. VC was chosen because it will most likely be invested in younger companies. Hence it acts as an intermediary for start-ups, which are usually risky to invest in. According to the study, VC positively impacts both micro and macroeconomic levels. Cities and regions that wish to foster the ecosystem must promote the needed talent and human capital through educational institutions. Therefore, they have been included too. The role of the government is one of the critical supporting factors within the start-up ecosystem. Hence, the government is responsible for the proper environment for creating and developing new companies. Larger companies can offer valuable resources to new ventures, such as working space or funding, and provide exit opportunities to the start-up with equity acquisitions, depending on the established company's objectives. The literature points out the implications of the growing trend of corporate start-up engagement with the growth of corporate assets of start-ups, increasing capital investment by corporate-owned venture capital, and the ever-increasing number of corporate-supported accelerators.

Additionally, the authors refer also to the concept of external enablers. Davidsson (2015, p. 675) introduced how new technologies, regulatory changes, demographic trends, and changes to the sociocultural, macroeconomic, political, and natural environments enable the creation of individual new ventures. Continuing from (Davidsson, 2015, p. 676), we denote these and other changes as external enablers, which we conceptualize in terms of their characteristics, mechanisms, and roles to develop a framework that captures communality and variance in multiple ways within and across various types of environmental change for the benefit of venture-level analysis.

We can look at two angles when discussing sustainability in the start-up ecosystem. First, how does a particular start-up ecosystem provide the infrastructure for start-ups to be successful and sustain their longevity and market presence? However, a different viewpoint could be whether a start-up ecosystem encourages businesses to think of sustainable approaches and solutions in terms of the environment and the living ecosystem of our planet when solving problems. The best ecosystem for start-ups considers both these issues and provides entrepreneurs and innovators with the knowledge and infrastructure that enable start-ups to sustain themselves and their businesses and life on earth simultaneously.

2.2 Accelerators

Cohen (2013, p. 13) broadly describes accelerators' activity as helping ventures with intangible assets like marketing with the help of tangibles like capital and employees. Specifically, the author states that accelerators provide programs of limited duration from 3-6 months, providing seed capital and working space. Incubators are distinguished from accelerators by the following facts; an incubation program's time is extended from 1 to 5 years, and acceleration programs last 3-6 months in general. Incubators also usually have a non-profitable business model,

whereby accelerators can also pursue financial objectives. The level of involvement and mentorship from accelerators is higher than incubators that offer lower mentorship support.

Tripathi et al. (2019, p. 13) position incubators' role in the earlier stages of a start-up's development during the transformation of an idea into a start-up. After identifying and developing a disruptive business potential, an acceleration program would benefit the venture to create an applicable business model, enjoying a broader network and, if needed, receiving an early stage or further funding.

Dempwolf et al. (2014, p. 16) narrow down the characteristics of an accelerator which:

- follows a business model,
- assists start-ups in obtaining further funding,
- at least offers mentorship, education, and investor networking,
- targets and select start-ups through a competitive selection process,
- focuses on the seed and pre-seed stages,
- targets technology-specific industries.

The most successful accelerators have developed relatively strong brands with their past performance, enhancing their network with investors and increasing their attractiveness for future start-up applicants (Dempwolf et al., 2014, p. 17). However, the authors also broadly categorize accelerators as for-profit and non-profit, acknowledging the importance of accelerators for the public good to impact local and regional economic development with organizations such as university accelerators or incubation programs supported by state funding.

2.3 Venture Capital

According to the study, Venture Capital (VC) positively impacts both micro and macroeconomic levels, such as raising employment levels or fostering research and development (Grilli et al., 2019, p. 2). The publication by Lerner and Kaplan (2016, pp. 3-6) also implies the positive impact of venture capital on a country's economic development. It creates opportunities for future entrepreneurs within the innovation culture, directly impacting job creation. The presence of VC within a start-up ecosystem depends on the effectiveness and transparency of the financial and legal systems and the liquidity in the stock market.

Like accelerators, venture capital targets younger companies, targeting new technologies within undeveloped markets, which again represents a high-risk investment with the possibility of higher returns. However, as accelerators cooperate with start-ups for six months on average (Dempwolf et al., 2014, p. 19), VC invests for a more extended period (Lerner & Kaplan, 2016, p. 13). Hence, according to the publication, entrepreneurs and venture capitalists are interdependent. Several supporting systems within the start-up ecosystem benefit venture capitalists: the regulatory framework, talent, the presence of other private capital investment firms, and incubators/ accelerators offering investment opportunities. The authors also emphasize the importance of larger companies, which impact the development of entrepreneurship and present investment opportunities with spin-offs. Following the levels of risk of VC investment, the level of liquidity on the market must be high for easier management of the VC's portfolio and exit strategies (Lerner & Kaplan, 2016, p. 36).

The authors would like to emphasize also the role of an ecosystem engineer. VCs play a role as ecosystem engineers in an emerging market, which is more proactive than a catalyst in a developed market. This ecosystem engineer role contains two primary functions, governing resource flows and selecting deviation. Specifically, VCs manage flows of such resources as capital, information, and managerial knowledge through decision rights in their invested ventures, control mechanisms, and incentive schema (Sun et al., 2019, p. 105).

2.4 Educational Institutions

The talent of the entrepreneur and early-stage employees in the company is the reason for creating a start-up entity. Cities and regions that wish to foster the ecosystem must promote the needed talent and human capital through educational institutions (WEF, 2013, p. 7).

Sherwood (2018, p. 240) implies that universities contribute in various ways to entrepreneurs by creating and providing knowledge and resources to the ecosystem. The author points out the importance of higher education and universities, which create additional activities contributing to the start-up ecosystem: providing space to young entrepreneurs, as incubation and acceleration programs, also make the early incentive towards entrepreneurship by organizing competitions in pitching, business planning, and designing.

Tripathi et al. (2019, p. 16) also emphasize universities' critical role and position them as a crucial part of the innovation-driven economy since they develop and enhance local talent. Start-ups often fail due to the lack of

knowledge on entrepreneurship; however, this knowledge gap can be resolved with appropriate courses at universities and colleagues. Educational institutions should pursue a further mission to provide students the ability to research and learn and provide consultancy services within the ecosystem, offer licenses of university IP to companies, and create spin-out ventures with human capital. The appropriate support enables the development of start-ups led by students and faculty (Mocker et al., 2015, p. 13).

The Entrepreneurial University is a central concept in innovation systems and university-industry connections. In addition to the traditional teaching and research tasks, universities are increasingly expected to engage in a third mission of supporting socio-economic development, including developing collaborations with industry. This is certainly the direction in which universities in China are moving. Universities are encouraged to engage in technology transfer and commercialization and provide entrepreneurial training to students and the wider community (Sun et al., 2019, p. 106).

2.5 Laws and Regulations

Governments can directly foster the nation's economic development by supporting the creation and growth of the start-up ecosystem with (Van der Wiele 2017, p. 12):

- tax exemptions,
- creation of government-funded incubation and innovation centers,
- supporting the creation of new companies,
- robust legal environment regarding Intellectual Property (IP) rights,
- trade regulations,
- encouragement of innovation.

In contrast, some authors claim that the role of the government in funding and subsidizing start-ups should be minimized to foster the "natural selection processes" among the newly established companies, aiming at the survival of the start-ups, which can find financial and other resources on their own. Despite the willingness of specific government incentives to foster an innovation-driven economy, their efforts must be balanced accordingly. According to the authors, many governments have wasted substantial capital to create a healthy business environment. More financial help may distort entrepreneurial behavior. Others question the importance of venture capital in fostering entrepreneurship. Governments can reduce their risk levels of failed capital investment by focusing on beneficial policies and laws for start-ups and established businesses, embracing the funding of start-ups by the private sector (Van der Wiele, 2017, p. 61).

Sun et al. (2019, p. 108) develop a new concept regarding the role of government as an enricher of innovation ecosystems. In recent years, many local governments in China have set up government-led university science parks to promote university-industry connections and innovation under the central government's call. These regional university science parks emulate and compete with each other concurrently. Many of these locations are also called "university towns" in the popular language, such as Songjiang University Town in Shanghai, Zhuoda University Town in a suburb of Beijing, and Shenzhen University Town in Shenzhen Nanshan district.

2.6 Large Corporations

More massive, established corporations seek new ways and struggle with in-house innovation. Due to the disruption and growth of start-ups and their orientation toward tech-specific industries, there has been an increasing trend of corporate involvement in start-ups, which increases their relevance within the start-up ecosystem (Weiblen & Chesbrough, 2015, p. 69).

From the literature review of this chapter, it can be concluded that (1) accelerators pursue public and private interests, (2) venture capital represents an essential role within a start-up ecosystem, (3) educational institutions are a driver for entrepreneurial growth, (4) government incentives and a supportive regulatory framework accompany the growth of start-up ecosystems. However, larger companies' roles and initiatives within the start-up ecosystems have to be additionally explored to successfully compare the start-up ecosystems of Shenzhen and Hong Kong from a corporate perspective.

The following sub-section presents the corporate involvement with start-ups in greater depth, providing further insights into the phenomena and theory on the corporate correlation with accelerators and venture capital.

2.7 Corporate Start-Up Initiative

Authors point out the implications of the growing trend of corporate start-up engagement with the growth of corporate acquisitions, increasing capital investment by corporate-owned venture capital, and the ever-increasing

number of corporate-supported accelerators (Mocker et al., 2015, p. 14).

Corporations have certain expectations on how cooperation contributes to their strategy from engaging with a start-up. They try to find and develop solutions in the external environment, which is less capital-intensive. Kohler (2016, p. 351) provides a comparison between the corporate and start-up engagement goals.

| Table | 1. | Corp | orate | and | start-up | goals |
|-------|----|------|-------|-----|----------|-------|
| | | | | | | |

| Corporate goals | Start-up goals |
|------------------------------------|----------------------|
| Close the innovation gap | Access to resources |
| Solve a business challenge | Increase credibility |
| Expand to new markets | Access to markets |
| Rejuvenating the corporate culture | Funding |
| Attracting talent | |

Source: Kohler 2018, p. 351.

Mocker et al. (2015, p. 12) provide overlapping objectives of a corporate start-up engagement in Kohler (2018, p. 28):

- to rejuvenate corporate culture,
- to innovate big brands,
- to solve business problems,
- to secure future market expansion.

2.8 Corporate Venture Capital

This type of engagement usually pursues financial objectives by the corporation. Still, it can also match their strategic goals, distinguishing a Venture Capital (VC) from a Corporate Venture Capital (CVC). Corporations have to pursue their main goals and strategies. Hence, the most general CVC practice is creating a separate corporate venture entity owned and financed by the founding corporation, minimizing the risk of the respected engagement to the corporation's core business. However, the risks are still relatively high, depending on the corporation's level of equity involvement. The innovation flow pursued by this corporate engagement is outside-in, meaning that corporations wish to gain and receive insights from the external environment and potential profit (Weiblen & Chesborough, 2015, p. 70).

2.9 Corporate incubation

Corporate incubation is a way to further develop relatively unrelated products and services to the corporate parent, yet with potential in other markets or even industries; inside incubation functions similar to external incubation programs, where the new venture is created and provided with funding, expertise, and contacts by the corporate parent. Corporations aim to create a new business by incorporating the incubation program. Success in business units not correlated with the corporation's core often results in spin-offs or out-using. An example is Xerox's spin-off, Adobe, which was evaluated higher than Xerox (Weiblen & Chesborough, 2015, p. 71).

The opposite of the Inside-Out model is the Outside-In innovation flow, whereby corporations receive tangible and intangible resources from the external environment. The phenomena refer to a more modern approach to corporate start-up engagement, closing the gap between corporates and start-ups with corporate acceleration.

2.10 Corporate Accelerators

Kanbach and Stubner (2016, p. 1756) categorize the primary objectives of corporations as financial and strategic. Corporations wish to align their revenue with their financial goals by increasing the start-up value through their acceleration program. The prerequisite is a capital investment into equity by the corporation. The authors also state that only corporations rarely pursue financial objectives with their accelerators, yet they are required for the accelerator program to sustain.

Two additional objectives are provided, which could hardly be interpreted as strategic. With much disposable capital, companies create accelerator programs to increase the corporation's entrepreneurship levels, enhancing the corporate culture. The cooperation of employees by providing mentorship or advice to the start-up can positively influence the corporation's entrepreneurial spirit. Most recently, corporations have supported external acceleration programs as a marketing activity to increase their public image of being an innovative, orientated

company.

Mocker et al. (2015, p. 18) provide examples of established multinational corporations' accelerators categorized by their objectives:

- 1) With its corporate accelerator Dell for Entrepreneurs, Dell launched in 2013, offers to finance for entrepreneurs, a range of resources, and marketing and mentoring assistance. Dell's engagement with start-ups helps to raise the entrepreneurial culture in the corporation as well as allows Dell to identify new innovative technologies;
- 2) Google's acceleration program, whereby they offer a range of events, free services, and capital investment, operates on a global scale but is often positioned within all of Google's campuses.
- 3) Microsoft offers various acceleration programs, engaging with start-ups. They believe that start-up companies are the disruptors in the future market, aiming to build a strategic partnership with the start-up company, not taking any equity in the start-up.

From the review of the literature by Kohler (2016), Weiblen and Chesbrough (2015), Mocker et al. (2015), and Kanbach and Stubner (2016), it can be concluded that there is a:

- 1) Rise to incorporate engagement with start-ups and the start-up ecosystem;
- 2) Corporations pursue either financial or strategic objectives;
- 3) Corporations fill the innovation gap with start-ups with corporate acceleration;
- 4) Corporate acceleration can be done independently or with an external partner;
- 5) Corporations engage with start-ups with different programs;
- 6) Corporate accelerators are industry-specific;
- 7) Start-ups benefit from corporate acceleration.

3. Materials and Methods

The following section provides the statement of the problem this paper addresses, the research questions that have served as guidelines throughout the research process, the research method, and the approach to the content analysis.

The main research question of the research was created following the main objective of the study, to provide a competitive comparison between the start-up ecosystems of Hong Kong and Shenzhen: "What are the level of presence of corporate involvement, types of acceleration programs, and the status quo of the Hong Kong start-up ecosystem in comparison with Shenzhen from the perspective of a corporate start-up initiative?"

To answer the main research question, the focus will be on specific attributes, elements, and components within the two ecosystems, firstly from existing literature and measurements according to the relevant indexes as frameworks and secondly as an interpretation of the qualitative research results.

The first sub-research question investigates corporate involvement, types of acceleration programs, and the status quo in the two ecosystems. The second research question explores how corporate acceleration programs contribute to start-up ecosystems, identifying the state, the drivers, and the influences behind it. The third research question examines how the corporate acceleration programs contribute to start-up ecosystems within Shenzhen and Hong Kong regarding corporate start-up engagement. In this framework, the authors want to assess the demand for corporate acceleration within the two areas:

- What state of corporate acceleration programs in Hong Kong and the Shenzhen start-up ecosystems?
- Which causes the development and growth of the respected start-up ecosystems?
- What opportunities does Shenzhen's start-up ecosystem represent corporations compared to Hong Kong?

The research method used in the study is a mixed method of both quantitative and qualitative research to compare the start-up ecosystems of Shenzhen and Hong Kong. The mixed method (Blank, 2010, p. 5) includes qualitative and quantitative components and more research styles.

The issue of compatibility and the barrier of combining quantitative and qualitative data in the mixed method (Blank, 2010, p. 68) is addressed with the categorical framework. This method was selected to integrate primary and secondary data into the findings - the final comparison of categories and sub-categories. The study follows the Triangulation Design defined by Blank (2010, p. 68), where qualitative and quantitative data are collected, analyzed, and then presented in the findings within a synergy.

Table 2. Secondary data sources

| Company / Data | Website | |
|---|--|--|
| Global Start-up Ecosystem Reports (2016 - 2020) | https://startupgenome.com/ | |
| World Bank Database | https://www.worldbank.org/ | |
| The Census and Statistics Department of Hong Kong | https://www.censtatd.gov.hk/home/index.jsp | |
| Commerce Burau of Shenzhen Municipality | http://en.commerce.sz.gov.cn/ | |
| Ease of Doing Business | https://www.doingbusiness.org/ | |
| World University Ranking | https://cwur.org/2019-2020.php | |
| Fortune's Global 500 | https://fortune.com/global500/ | |
| Shenzhen Government Online | http://www.sz.gov.cn/ | |

Source: List constructed by the authors.

The relevant quantitative data regarding the two ecosystems will be extracted from secondary data sources from the following table to identify the status quo and the relevant trends within the respected start-up ecosystems.

Primary data has been collected with semi-standardized online video interviews. The interviews were conducted from April to June 2020 with start-up companies, consultancy agencies, corporates, VC firms, and corporate accelerators operating in Hong Kong or Shenzhen. Participation in the interview was anonymous. The dialog was held in English, lasted 40 minutes on average, and was audio-recorded and transcribed. All participants beforehand allowed and agreed on the audio recording of the interview.

The interviewees (Table 3) are labeled from I1 to I10, ordered by the interview date. The data on corporate involvement in the start-up ecosystem was collected by interviewing external companies providing incubation and acceleration services for corporations, corporate accelerators, and corporate departments.

| Dartisinant | Start-up Ecosystem | Role within th | e Position | Software | Video | Duration |
|-------------|----------------------|------------------------|----------------------|-------------|-------|----------|
| Farucipant | | start-up ecosystem | | | | |
| I1 | Shenzhen | Corporate acceleration | Managing director | WeChat | Yes | 55 min |
| I2 | Hong Kong | Consultancy | Founder | Zoom | Yes | 40 min |
| I3 | Hong Kong | Venture Capital | Fundraising, M&A | Zoom | Yes | 40 min |
| I4 | Hong Kong | Fintech Start-up | Business development | Zoom | Yes | 45 min |
| 15 | Shenzhen | Consultancy | CEO | Skype | Yes | 45 min |
| I6 | Hong Kong & Shenzhen | Corporate department | Head of Innovation | Skype | No | 35 min |
| I7 | Hong Kong | Accelerator | Marketing & PR | Google Meet | No | 30 min |
| 18 | Shenzhen | Financial services | CEO | Zoom | Yes | 35 min |
| 19 | Shenzhen | Corporate department | Head of Innovation | Skype | Yes | 30 min |
| I10 | Shenzhen | Blockchain start-up | Marketing & PR | Zoom | Yes | 35 min |

Table 3. Interview participants

Source: Own & Interviewees.

Although face-to-face interviewing is often referred to as the golden standard in qualitative research, scholars suggest a more negligible difference in the results of face-to-face and online interviews. Hence, the difference can be modest when considering the research constraints regarding costs or the interviewees' geographical location (Krouwel et al., 2019, p. 1).

There were three main criteria for the interviewees from corporations and start-ups: (1) they operate in either Shenzhen or Hong Kong, (2) are stakeholders within the start-up ecosystem in Shenzhen or Hong Kong, (3) they have a professional background that can provide valuable insights to the study.

The content analysis was conducted using the Mayring (2014, pp. 79-82) approach - a qualitative content analysis of reduction. This research followed the step approach of inductive category formation:

- The study's central research question was created following the study's primary objective to provide a competitive comparison between the start-up ecosystems of Shenzhen and Hong Kong. The relevant literature was reviewed to understand the theoretical background.
- 2) To answer the main research question and the above-stated sub-research questions, five main categories were created with the help of the literature by Tripathi et al. (2019), WEF (2013), and Kohler (2016), which

served as a framework for the final comparison of the two respected ecosystems. The categories were selected for relevance when assessing a start-up ecosystem and relevant to the corporate initiative within the ecosystem. Each class has been broken down into more sub-categories. The created categories served as a criterion to identify relevant data.

- 3) The transcript analysis was done with QDA Miner Lite (Note 1), a qualitative analysis software. Initial categories and codes were created, deleted, or combined, while the content analysis depended on the abstract levels of the primary data.
- 4) The codes without references were deleted after revision.
- 5) The text and findings were revised again, and unrelated data was removed.
- 6) Finally, the main research categories were created (Table 4) based on the availability of primary data.

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|----------|------------|-----|----------|---------|
| Tahle / | l Man | and | sub_cate | onries. |
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| | | | | 0 |

| Main Category | Sub-Category | |
|-----------------|--------------------------|--|
| | Status quo | |
| | Government | |
| Support factors | Corporate engagement | |
| | Educational institutions | |
| Fundi | ng & Development | |
| | Industry | |
| Technology | Innovation | |
| | Talent | |

Source: Own.

Initially, only a few categories were created. The step approach by Mayring (2014, pp. 79-82) enabled the precise formation of new and reduction of initial main types, ultimately categorizing and presenting the results more accurately.

4. Results

The Asia-Pacific region has the highest number of high-growth start-up ecosystems. This year Shenzhen has been ranked among the top 30 start-up ecosystems globally for the first time. The authors justify the ranking due to the high R&D investment and a high ranking within the knowledge category. Table 5 displays the global ranking and other types (10 = best ranking) of Shenzhen and Hong Kong compared to different Chinese start-up ecosystems, Singapore, and Silicon Valley's globally leading start-up ecosystem (GSER, 2020, p. 7).

| Start-up Ecosystem | Global rank | Performance | Funding | Market Reach | Knowledge | Talent |
|--------------------|-------------|-------------|---------|--------------|-----------|--------|
| Silicon Valley | 1 | 10 | 10 | 10 | 10 | 10 |
| Beijing | 4 | 10 | 9 | 10 | 10 | 10 |
| Shanghai | 8 | 10 | 8 | 8 | 10 | 9 |
| Singapore | 17 | 4 | 8 | 8 | 1 | 4 |
| Shenzhen | 22 | 7 | 6 | 1 | 9 | 5 |
| Hangzhou | 28 | 8 | 2 | 1 | 9 | 3 |
| Hong Kong | 29 | 3 | 4 | 7 | 1 | 1 |

Table 5. GSER rankings

Source: (GSER 2019, p. 7).

Shenzhen needs to be ranked better within the market reach category. The authors state that the city does not produce global companies but successful companies in the local market. Reasonably, it ranks Hong Kong higher within this category as it acts as an international hub allowing companies to expand to other markets.

4.1 Status quo of Shenzhen and Hong Kong

Hong Kong has always been a gateway to China for companies wishing to manufacture in China, making it a hub for building a network (I7). Most Hong Kong companies are SMEs; large corporations are hard to find except for banks, usually not headquartered in Hong Kong. Hong Kong is attractive for networking and finding investors but

not for development and research due to the high cost (I2). However, it is an international and multicultural environment where it is easy to start a business (I6). This corresponds with the Ease of Doing Business study by the World Bank (2020, p. 1), which explores the regulatory and legal environment for entrepreneurs within the frame of opening a limited liability company. According to the study, Hong Kong is ranked fifth-best country for starting a business, second-best in paying taxes, and seventh regarding minority investor protection globally.

I2 points out the high-cost structure in Hong Kong and the need to find a start-up environment suitable for early-stage start-ups. I6 shares I2's opinion and points out the high cost of employees in Hong Kong. The focus in Hong Kong is on the financial industry. Consequently, it is an area abundant with respective talent, whereby the talent pool in Shenzhen is significant within the IT sector (I2).

I8 describes Shenzhen as a work-driven city with a fast-reactive environment, highly supportive of innovation, especially design. Doing business in Shenzhen is often unbureaucratic, with an oral agreement and a handshake (I5 & I6). An order for a hardware product or prototype can be given in the late evening hours and executed during the night, allowing entrepreneurs to receive their order early morning. Although manufacturers currently relocate out of Shenzhen to nearby areas, this process is quick. The local government in Shenzhen is interested in developing and creating innovation-driven start-up companies rather than start-ups, which create new business models (II). Local governments from top-tier Chinese cities are in direct competition for high-potential technology start-ups, making China an attractive starting point for respective ventures due to the local government's practical level of support (I1). I1 clarifies that Shenzhen's start-up ecosystem does not compete with the start-up ecosystem of Hong Kong, which serves as a destination for start-ups wishing to expand to other markets but does compete with different leading start-up ecosystems within the Asia-Pacific region. The local government in Shenzhen supports the corporate acceleration programs since they wish to increase the start-up creation and the business of corporations, which in both cases represents a benefit for Shenzhen's economy, according to I1 and I10. Due to the favorable, highly supportive environment, lower cost structure (I2), and higher level of talent in engineering and programming (I2) seems this respect that Shenzhen is a more attractive location for start-ups than Hong Kong (I10).

4.2 Supporting Factors

The following subchapter mainly addresses the first and second sub-research questions. Therefore, it first identifies the government supporting factor related to the development and growth of the respective start-up ecosystems and, secondly, the state of corporate acceleration and engagement within Shenzhen and Hong Kong. Additionally, findings related to educational institutions are presented, as they act as the third major supportive factor within the respective ecosystems.

4.2.1 Government

The government in Hong Kong supports start-up creation and development with its accelerators, providing office space, mentoring, and networking to start-ups (I4). The established legal environment and tax rates make Hong Kong attractive for foreign start-ups (I2), who may receive support from the two central government-funded accelerators, Cyberport and Science Park (I2 & I4).

Additionally, they are committed to attracting multinational companies to their ecosystem. The incentive "Easy Landing" offers high discounts on rentals willing to attract MNCs and foreign fintech start-ups from mainland China and overseas. One of the first corporations to join their ecosystem was Zhong An International, one of the leading Chinese groups in financial technology (Cyberport Annual Report, 2019, p. 35).

An additional hub for start-ups established by the government is the Hong Kong Science and Technology Parks Corporation (I2 & I4).

Although Hong Kong is a financial technology hub, the government aims to diversify and support innovation within other sectors by supporting the respected accelerators (I3). The local government of Hong Kong shows support for early-stage start-ups entering Hong Kong (I7) directly with taxation incentives and indirectly by supporting local accelerators which attract foreign start-ups to start or to move their operations to the city (I7). An additional organization helping companies to enter or begin in Hong Kong, supported by the regional government, is InvestHK (I6).

In Shenzhen, the local government supports taxation and funding towards incubators, accelerators, and corporate accelerators to ensure quality services for start-ups (I1). It provides subsidies to foreign investment companies to enter Shenzhen (I1). However, VC companies supported by government funding must meet specific criteria while investing in start-ups (I1). Lately, the government has supported the research and development of AI technology (I6). Still, the funding level depends on the start-up's innovative potential, which falls into different investment

categories (I1). I9 states that Shenzhen's regulatory environment highly supports technology-related start-ups. If a start-up operates within the favorable technological field determined by Shenzhen's local government, they have a higher chance of receiving funds from a bank (I9). This corresponds with I8, stating that the government highly supports innovation-driven start-ups.

Although I4 believes that there is no competition between Hong Kong and Shenzhen, I8 states that the municipal government of Shenzhen provides incentives to start-ups and companies from Hong Kong to enter Shenzhen by either relocating from Hong Kong or opening up a subsidiary. The incentives support start-ups with favorable taxes and conditions regarding employment and operations, making it convenient for fintech start-ups to relocate to Shenzhen. Individual city districts provide higher support levels than others, aiming to develop and grow the fintech sector within communities favored by the local government (I8). Each region and city in China, including Shenzhen, specialize in a specific field or sector (I5).

4.2.2 Corporate Engagement

Corporations realize the benefits of cooperation with start-ups. They are willing to engage with start-ups to stay competitive (I7). However, many Hong Kong corporations promote cooperation with start-ups to look more competitive and innovation-driven, whereby strategic collaboration between a start-up and a corporation is not so joint (I6). Innovation is generally not the main driver for banks (I3); however, banks cooperate with start-ups to recognize the need for certain technologies or components. In this case, the bank would be the user of the start-up service or an investor. Despite pursuing strategic objectives, banks find the financial perspective of their investment highly substantial (I3).

Moreover, banks must deal with high risks in implementing new technology (I3). Cooperation between a corporation and a start-up can sometimes be challenging since corporations are unwilling to share specific internal processes. Additionally, implementing new technologies requires time and financial resources (I9). I6 states that there has been much progress in the fintech sector. Still, banks need to integrate the technology developed by start-ups. One reason is that most fintech start-ups need a higher operating volume (I3) to scale up their service. Nevertheless, I4 emphasizes that cooperation between a large company and a start-up is highly beneficial for both parties, especially within the financial technology, and points out that many start-ups in Hong Kong are backed by large financial institutions, corresponding with I2, stating that large companies in Hong Kong do engage with start-ups if they recognize a strategic fit. According to the KPMG survey analysis, 55% of the interviewed start-ups engage with corporates and universities on R&D activities (KPMG, 2020, p. 3).

Many start-ups are created to satisfy a specific need for a larger company or institution, so the start-up's sole purpose is to solve its respective problem (I4). I3 states that most fintech start-ups are founded by former bank employees who recognize the need for innovation working within the industry. The main challenge for corporate engagement for fintech start-ups in Hong Kong is that most banks need to be headquartered and hold no decision power towards adopting new technology (I3). The complex structure of corporations sometimes represents a barrier to their engagement with a start-up (I3). However, I6 reports a rise in Hong Kong institutions connecting corporations and start-ups. Corporate accelerators like Accenture provide various services for corporations and start-ups, aiming to discover cooperation (I6). Although large enterprises within traditional industries are not highly interested in new technology adoption (I1), I6 states that this is changing in Hong Kong and that corporations show interest in start-ups, which bring innovation into traditional sectors. An example is the cooperation of a hotel with Rice Robotics, producing automated delivery robots, which shows the hotel industry's interest in innovation (I2).

Large corporations offer high support to start-ups and are a significant part of the Shenzhen start-up ecosystem. They can serve as a client, partner, or investor for the start-up of their interest (I9). However, corporations have the upper hand in Shenzhen and often expect a proof of concept from start-ups to consider collaboration (I1). There is usually a high cost in technology-specific industries related to concept defense. Corporations are willing to cover the development cost (I1) in cases of unique technology.

The corporation's and the start-ups' engagement depends on the corporation's initiative toward cooperation (I4). The primary technology corporations run their corporate accelerators in Shenzhen, whereby some corporations contact local accelerators to search for start-ups with the potential for beneficial cooperation (I7). It must be emphasized that corporate accelerators only invite highly competitive and innovative start-ups (I8), ultimately integrated into their ecosystem. Corporations have different brands that the start-up company can support. Additionally, corporations are present in various sectors, from financial technology to medical technology. For example, start-ups require competitiveness in highly innovative areas (I8).

The government supports the corporate accelerator in Shenzhen, managed by I1. The main objective of the

program is not financial but strategic. They provide various free services to start-ups with a strategic fit with the corporate parent, who is highly interested in technology solutions and innovation and has already produced several unicorns (I1). The primary purpose of corporate acceleration is to connect the corporation with the proper start-combined connect pre-filtered early-stage start-ups from China and globally to the corporate parent to identify a collaborative potential.

The corporation usually becomes the start-up's customer (11). The parent corporation provides problem statements and specific requirements to the acceleration department. The requirements are then analyzed so the team knows what type of start-ups to search for. The corporate accelerator afterward searches for cohort companies for three months. After the selection process, each start-up is assigned a mentor who serves as a newly established enterprise manager. The program connects start-ups with the relevant department, usually, the corporation's engineers, to mutually discuss and plan (11). The initiative for start-up engagement has to come from a corporate department, which afterward serves as a sponsor for the acceleration. The selected start-up companies are monitored closely for five months to create a proof of concept that satisfies the corporation (11). I1 points out that corporate accelerators are searching for new technologies that have not been tested or used. It is a proof of concept needed to identify the relative potential. I3 reports that start-ups need help to scale up their service or product after introducing the proof of concept to the corporation, complications usually force the start-up to pivot. Developing the right strategic fit for the corporate parent takes time and capital, so the corporation's incentive for engagement has to be high to provide results (I1).

In some cases, new technology adoption and integration cost are too high (I1). The additional funding for accelerated start-ups is challenging to trigger, usually due to high costs. If financial objectives drive corporate acceleration, it may ignore the start-ups with the best technology potential. I1 states that early-stage start-ups typically have the highest potential but need more capital and emphasizes that charging start-ups during corporate acceleration is not sustainable in China.

Corporations decide to cooperate with start-ups for specific innovative solutions that tackle a particular problem or challenge within their operations. Suppose there is a high strategic fit between the corporation and the start-up. In that case, corporations will put a lot of effort and resources towards the start-up to develop and integrate the innovative solution, enabling them to remain competitive against global competitors (I9). Banks industry institutions show interest in the start-up ecosystem if the start-up can provide a specific solution (I2). Start-ups can benefit significantly if they engage with a corporation, serving as a platform for the start-up to enter the market (I9). The cooperation between a start-up and a corporation is also challenging since the two entities operate at different speeds. The processes in large companies take time. Decisions are made on different levels and departments, whereby the flow of information runs fast in start-ups; they operate and react quickly and therefore wish to achieve fast progress (I7). Chinese corporations are highly aggressive and innovation-driven. If the corporation recognizes a start-up with a strategic fit for their businesses, they would first serve as a client and proceed with an acquisition if the cooperation is successful (I5). Corporations in Shenzhen represent an exit option for IT start-ups (I1), whereby, generally, in China, larger companies prefer to acquire smaller companies instead of working with them through a partnership (I5).

Based on the interviewees' inputs above, the following key drivers are identified:

- The attitude is changing in Hong Kong, and corporations are showing interest in start-ups;
- Corporations in Shenzhen are highly aggressive and innovation-driven;
- Large corporations have been developing their partners' ecosystems through a higher number of venture capital investments;
- Large corporations offer a high level of support to start-ups and are a significant part of the Shenzhen start-up ecosystem;
- The government supports the corporate accelerator in Shenzhen, where the main objective of the program is not financial but strategic;
- In most cases, the corporation becomes the start-up's customer;
- Shenzhen has around 400 accelerators, driven mainly by financial objectives.

4.2.3 Educational Institutions

The universities in Hong Kong are orientated towards international business, financing, and management (I6) and cooperate with accelerators supported by the government (I7). I8 describes the educational infrastructure in Hong

Kong as more acknowledged and of more outstanding quality than in Shenzhen, which corresponds with I6 representing the universities in Hong Kong as of higher standard.

Hong Kong aims to become a regional educational hub due to the high level of international standards within the educational systems and high global rankings.

I1 points out the increase in the number of graduates in Shenzhen in the last two decades, corresponding with I10, which emphasizes Shenzhen's educational sector's growing quality. The city's educational infrastructure increases due to the government's incentives to increase talent levels (I8). Educational institutions invite experts from overseas by providing them with an office and supporting their research (I8). Moreover, China's leading universities, like Peking University and Tsinghua University, have established satellite programs in Shenzhen to create further and attract talent.

4.2.4 Funding and Development

According to I6, Hong Kong investors are risk-averse and prefer to invest in traditional industries like real estate and stocks. They are willing to invest in later-stage start-ups once they have already operated (I6). I4 states that despite Chinese investors and large corporations like Tencent, Hong Kong could be more attractive for early-stage start-ups. The environment of Hong Kong is more appropriate for networking and investor seeking (I2) since Hong Kong has a lot of international resources and international companies, which makes the expansion to other markets more accessible (I4). Most start-up investors in Hong Kong focus on fintech companies; currently, there is a sectoral rise in virtual banking (I3).

Moreover, clean energy and food-related technology are becoming attractive to investors in Hong Kong (I7). There are high incentives to integrate China with global financial markets. In late 2018 China launched an exchange similar to Nasdaq (Note 2). They intend to fund Chinese technology start-up companies. The Shenzhen-Hong Kong Stock Connect initiative also allows foreign asset management companies to have sole ownership in China. The Chinese government aims to drive its economy by creating a technological innovation hub by combining an international financial center with a base of emerging technologies to create a mega-innovative cluster (Wong et al., 2019, p. 80).

I2 states that Shenzhen is more attractive for start-ups than Hong Kong due to the lower cost structure. I1 also believes that Shenzhen is highly attractive for start-up companies due to the high level of support from the local government towards the start-up ecosystem by providing funding to start-ups and investors. Shenzhen's municipal government supports local VC and wishes to attract foreign VC funds by funding early innovation start-ups and the start-up ecosystem (I8). Despite the high presence of VC firms in Shenzhen, I3 suggests that accepting VC funding should be the last resort for a start-up.

According to I10, are investors in China easy to find. Moreover, I5 reports high incentives by the local government to attract foreign start-up companies. Chinese investors prefer to invest in start-ups operating in mainland China, possibly because moving capital out of China may be problematic (I6). The number of investors in Shenzhen is rising, still doing business in China without a fundamental understanding of the market, and the environment is of higher risk (I5). I5 points out that operating in Shenzhen would be challenging without local employees or local language knowledge, even though English is becoming a commonly spoken language (I5).

4.2.5 Technology

I1 reports a clear trend toward digitalization in many traditional industries, supported by an example of grocery delivery services. It emphasizes (I1) that start-ups with online businesses will be more attractive for investment than offline businesses. Regarding technological trends in Shenzhen, I5 recognizes a trend in software and significant data innovation. Life in Shenzhen is becoming digitalized; payments and identification is made via mobile phone (I5). Big data is limitless; it is not about control and monitoring but recognizing patterns to improve the quality of life in the future (I5). The government's data collection enhances the cooperation between the government and the private sector, enabling a competitive advantage to support enterprises against their global competitors (I6).

4.2.6 Industry

The industry in Shenzhen has moved fast from manufacturing directly to robotics (I6) and is a very favorable environment to develop electronic products (I5). Raw materials are abundant in Shenzhen; it is also easy to find a supplier or a manufacturer for the desired product (I5). I6 emphasizes the fast transition of Shenzhen from reverse engineering towards innovation and creativity. According to the Invest in Shenzhen Report (2019, p. 22), there are four key pillar industries in Shenzhen:

- 1) High-tech with over 14,000 companies operating within the technology sector;
- 2) Finance, Shenzhen, represents three Chinese financial centers.
- 3) Modern logistics accounted for over 10% of Shenzhen's GDP in 2018.
- 4) Since industrial and graphic design account for about 10% of the city's GDP, cultural and creative industries. Furthermore, the city was named the "City of Design" by UNESCO due to the high success of the respective sector.

The report lists the other seven industries that will focus on while pursuing innovation: new-generation information technology, high-end equipment manufacturing, green and low-carbon industry, biomedicine, digital economy, and new material and marine economy.

Hong Kong remains a hub for financial start-ups due to the financial sector (I3). Each region within the Greater Bay area has its purpose and focus, whereby Hong Kong remains a financial center with the highest potential for fintech start-ups (I7). Start-ups provide fintech, insure-tech, and med-tech solutions needed in the banking industry. According to the latest report by the governmental agency StartmeupHK (2019, p. 1), are currently 3,184 start-ups operating in Hong Kong with over 12,000 employees. Hong Kong is starting to diversify from being a fintech hub to exploring other technology-related sectors. Out of 3,184 start-up companies, 456 operate within financial technology; nevertheless, there has been an increase in e-commerce and IT.



Figure 2. Start-ups by sector in Hong Kong. InvestHK 2019, p. 2

In Shenzhen, the start-ups' structure changed significantly after 2015, when a five-year blueprint was laid out to remain competitive in high-tech, upgrade infrastructure for service industries, and scale-up education and medical services. The city already led the world in supercomputing, gene sequencing, and metamaterials and was home to 1,283 laboratories. Nonetheless, Shenzhen already in 2016 was home to more than a million private companies—with start-ups including the Internet, biotech, new energy, new materials, and IT firms. Manufacturers churned out circuit boards, computer chips, LEDs, touch screens, and more (Lundberg, 2019, p. 255).

The Outline Development Plan (KPMG, 2019, p. 4) issued by China's central government aims to increase the cooperation among the cities within the Guangdong Province and with the SARs of Hong Kong and Macao to create a leading global innovation cluster. The main strategic objectives of the plan are:

- 1) To build a highly dynamic group of cities,
- 2) To become a global international tech and innovation center,
- 3) To support the "Belt and Road" initiative,

- 4) To increase the cooperation between mainland China and the SAR of Hong Kong and Macao,
- 5) To create a sustainable quality living environment.

Within the Outline Plan, Shenzhen and Hong Kong are two of the four main cities in the GBA, each with specific development purposes. The plan points out the importance of Shenzhen and its future orientation towards becoming a national city of innovation and the need to increase its levels of internationalization and modernization. Hong Kong remains an international business hub to promote high-end industries to expand its global competitiveness. The Outline Plan emphasizes the need to accelerate infrastructure supporting further innovation and growth of research and development parks. It promotes foreign investment from Hong Kong within the GBA area with favorable incentives for investors (KPMG, 2019, p. 4).

4.2.7 Innovation

Hong Kong has a lot of technology-orientated start-ups, especially in fintech (I4). The interest in cashless payment is growing in Hong Kong; therefore, many start-ups are developing related solutions (I4). However, I6 says innovation is less encouraged and supported in Hong Kong than in Shenzhen. Moreover, finding good developers in Hong Kong, most students decide on banking or management (I4).

Innovative and creative thinking drive Successful corporations in Shenzhen (I6). Shenzhen is shifting from manufacturing and hardware towards software, driven by technology corporations (I6). There are incentives by the local government for Shenzhen to become innovation and research-driven; manufacturing facilities are being moved out of Shenzhen to close-by areas (I9). Shenzhen is transiting from a manufacturing hub to an innovation hub (I5). I5 states that the focus in Shenzhen is still on hardware, whereby other Chinese ecosystems focus on AI and big data, which corresponds with the statement from I8, implying that the orientation toward hardware still dominates in Shenzhen. Still, there is a rise in start-ups developing AI and big data solutions. This corresponds with I9 stating there is a shift from manufacturing electronics in Shenzhen towards developing software solutions and artificial intelligence.

4.2.8 Talent

The orientation towards work and innovation in Hong Kong is less competitive in Shenzhen, unlike Silicon Valley regarding working hours (I6). The Chinese are highly creative and innovation-driven, seeking solutions (I6). The level of innovation is supported by the high level of young talent (I9, pp. 60-62). Shenzhen attracts students by providing them with financial support (I9 & I10) and other subsidies to relocate to Shenzhen from different parts of China after graduation (I1). The coast of Southern China ranks Shenzhen third among the 50 cities in human talent. One of the reasons for high talent levels is that Shenzhen is a special economic zone, making it a desirable destination for young talents. The local government is putting much effort into creating a talent pool; the expenditure per capita among 50 cities within the same region is the highest in Shenzhen (Warner, 2018, p. 68).

According to I6, Hong Kong needs more specific talents; companies try to attract the right human resources from mainland China or overseas. Hong Kong's government has posted skills highly required on their official website: waste treatment specialists, asset management professionals, marine insurance professionals, actuaries, data scientists and cybersecurity specialists, innovation and technology experts, and creative industries professionals (HK.Gov., 2020). This corresponds with I6 and I7, which describe a lack of talent within the IT sector in Hong Kong. Moreover, I4 states that developers are easier to find in Shenzhen—some commute daily to Hong Kong. Shenzhen has a higher level of talent, especially in engineering and IT. Organizations in Hong Kong aim to fill the talent void in Hong Kong and Macau and the Guangzhou-Shenzhen-Hong Kong Express Rail connection, reduces traveling between Hong Kong and Shenzhen to under 20 minutes. This infrastructure supports the flow of talent in the Greater Bay Area, increasing the collaboration and interdependence within the area to a greater ecosystem of interconnected cities (KPMG, 2020, p. 7).

4.2.9 Competitive Comparison of Start-Up Ecosystems

This chapter summarizes the main findings from the study (Table 6). It addresses the main research question, therefore identifying the level of development of the Hong Kong start-up ecosystem compared to Shenzhen from a corporate start-up initiative perspective.

| Category | Hong Kong | Shenzhen |
|--------------|--|--|
| Status quo | Remains a financial hub | Innovation-driven. |
| | Gateway to China, third rank globally in the ease of | Relocation of manufacturing out of Shenzhen. |
| | doing business. | It recently ranked among the top 30 start-up ecosystems |
| | | globally in 2020. |
| Supporting | China's SAR is under the government's Outline | Development under the Chinese government's Outline |
| factors | Development Plan for the GBA. | Development Plan for the GBA, strong manufacturing |
| | | industry, and China's SEZ. |
| Government | High support towards governmental agencies | The government's high level of support and subsidies for |
| | promoting the start-up ecosystem (InvestHK, | corporate accelerators, VC investors, and start-up |
| | Cyberport, Science, and Technology Parks). | companies. |
| | | Corporations that move HQ to Shenzhen receive up to 1.49 |
| | | million US\$. |
| | | High financial support regarding office space rent for |
| | | purchasing office space and increased incentives to |
| | | establish an innovation-driven high technology hub. |
| Educational | It established and developed educational | Young educational infrastructure, Shenzhen University |
| Institutions | infrastructure. The University of Hong Kong ranks | ranked 496 th globally in 2020. |
| | 166 th globally in 2020. | |
| Corporate | High corporate start-up engagement within | High corporate engagement from Ping An and Tencent. |
| Engagement | financial technology. | Tencent, Baidu, and Alibaba accounted for more than 42% |
| | Low investment from Chinese corporations. | of VC investment in China in 2016. |
| | Potential in B2B and private-public partnerships. | Tencent had 163 VC investments in 2018. Twenty-one of |
| | | the highest 25 is to mainland China. |
| Funding and | High operational cost. | Favorable for early-stage start-ups. |
| Development | Favorable for start-ups in later stages. | |
| Technology | Financial technology, digitalization within | Application of new generation technologies within |
| | traditional industries. | manufacturing. |
| Industry | Finance, Insurance, Real estate, Construction, and | Over 14.000 companies in high-tech. Logistics and |
| | Premises ownership. | Industrial/Graphic design combined accounted for more |
| | | than 20% of the city's GDP in 2018. |
| Innovation | Digital entertainment and gaming, Smart city, | Application of new technologies to existing industries. |
| | E-commerce, Data Analytics, Food-tech, | New generational technology, high-end manufacturing, |
| | Robotics, and Smart manufacturing. | green and low-carbon industry, biomedicine, and new |
| T 1 . | | material technology. |
| Talent | The talent gap informal sciences. | High level of talent. |
| | The option of daily talent migration to Hong Kong | High incentives for talent attraction. |
| | from the GBA. | |

| Table | 6. | Competitive | comparison | of Start-u | b Ecosystems |
|-------|----|-------------|------------|------------|--------------|
| | | | | | |

Source: Own.

This research's novelty is two-fold: First, it is a competitive comparison of the start-up ecosystems in Shenzhen (Chinese Guangdong Province) and Hong Kong (Chinese Special Administrative Region) from a corporate not from a purely theoretical perspective to research. Second, since the main objective is a comparison through a corporate scope, the authors created a framework for the comparison, with the help of literature on start-up ecosystems and corporate start-up engagement, to clearly define the corporates' objectives and types of engagement.

The study is a comparative analysis of start-up ecosystems in Shenzhen and Hong Kong from a corporate initiative perspective. It identifies potential business and capital investment opportunities for corporate involvement. The study applied a triangulated approach, synergizing primary data from interviews with relevant start-up ecosystem stakeholders and secondary data to further examine and support the initial findings.

The approach to the study and the research method has provided sufficient findings to finalize the comparison. The collected primary data through the semi-structured interviews have been identified as valuable to the study, whereby the secondary data filled the informational gap and enhanced the research results. Hence, the findings were sufficient to develop recommendations regarding business opportunities for start-ups and corporations

interested in entering Hong Kong or Shenzhen.

Further research needed in this area could be derived from the limitations of this paper. The paper applies the concept of the start-up ecosystem to Shenzhen and Hong Kong to examine and compare the two systems of institutions, businesses, and processes between them and investigate the status quo of corporate acceleration and involvement in the two ecosystems. With the use of primary data collected through a limited number of interviews and relevant secondary data, which could be expanded by including some databases with pre-payment access, a definite comparison between the respected ecosystems is developed regarding their relative potential for corporate engagement could be deepened and eventually supplemented with other regions worldwide.

The research findings developed best practices and recommendations for start-ups operating or willing to enter Shenzhen or Hong Kong. Another paper's novelty suggests positive aspects of the respective ecosystems for corporations and large companies, potentially benefiting from the relocation or subsidiary opening within the Greater Bay Area.

5. Conclusion

This research investigated the start-up ecosystems of Shenzhen and Hong Kong to develop a competitive comparison from a corporate perspective to assess the current situation within the two start-up ecosystems and identify potential capital investment and other business opportunities for corporate involvement. The findings suggest that Shenzhen's start-up ecosystem is more attractive for corporations like Hong Kong within the context of innovation, technology, and talent. Shenzhen and Hong Kong are located within the Greater Bay Area. They will continue their development according to the Chinese government's planning, which has identified specific development areas for each city within the region. The world population has been increasing, people live longer, and the quality of life has improved (Dirsehan, 2020, p. 5). The regional ecosystems will not be seen as competitors. However, as ecosystems try to create valuable synergies to support the GBA's economic development, each pursues its objectives based on its competitive advantages. Hong Kong will first maintain its role as a business hub and an international asset management center and promote technologies and innovation to increase its global competitiveness. The Outline Plan positions Shenzhen as a leading innovation hub within the broader area to improve the city's level of internationalization.

Mainly Asian start-up ecosystems show recovery signs from the global COVID-19 pandemic due to local or national governments' high incentives and policies. The findings show that China's central government and the Shenzhen and Hong Kong municipal governments represent the most relevant supporting factor. The government of Hong Kong supports the start-up ecosystem with the governmentally funded accelerators Cyberport and Science Technology Park, which aim to assist local start-ups in attracting start-ups from overseas. The HKSTP also establishes R&D facilities on the Shenzhen-Hong Kong border to increase cross-border collaboration. These organizations explore further possibilities and wish to identify opportunities by collaborating with corporations and educational institutions. According to the KPMG (2020, p. 42) survey analysis, more than half of the interviewed start-ups engage with corporates or universities within their research and development activities, indicating a high level of corporate engagement within the ecosystem. Financial technology is still dominant in Hong Kong and represents the highest possibilities for corporate start-up collaboration. Findings indicate that financial institutions in Hong Kong most commonly engage with start-ups as a client within B2B activities. The results suggest that Hong Kong is not an attractive destination for Chinese corporate venture capital investment. Tencent Holdings only allocated 2% of its VC investment to Hong Kong, invested in China. It is also highlighted that moving capital out of China may need to be revised. Acknowledging the Chinese government's plan for Hong Kong to remain an offshore RMB hub, governmental policies favor FDI net inflow to the mainland as FDI net outflow, consequently defining the city's priority as attracting FDI inflows to the continent.

Shenzhen's start-up ecosystem is shifting from manufacturing towards innovation to further develop its regional competitiveness compared to other major Chinese start-up ecosystems. The study's findings show that Chinese start-up ecosystems directly compete for start-ups with the highest innovation potential. Additionally, Shenzhen aims to attract financial technology start-ups from Hong Kong with tax incentives to strengthen its fintech sector. One of the additional barriers for start-ups entering Hong Kong is the high-cost structure regarding human resources and office space. Therefore, Hong Kong is less attractive for early-stage start-ups than for later-stage start-ups wishing to establish a network of international customers, partners, and potential investors. The internationally acknowledged and confirmed educational infrastructure in Hong Kong must satisfy the local talent demand. Findings emphasize the talent gap within the region, ultimately lowering the level of attractiveness of Hong Kong for corporations. Moreover, talent is abundant in Shenzhen due to the local government's incentives to attract young talent from other regions of China. Furthermore, incentives are also

orientated towards established Chinese universities, which initiated Peking University to open a Shenzhen subsidiary.

In recent years, the start-up ecosystem has emerged as a critical driver of innovation and economic growth worldwide. This essay aims to critically engage with the current debate surrounding the start-up ecosystems in Shenzhen and Hong Kong, highlighting their unique characteristics, challenges, and opportunities. By doing so, we can elicit new knowledge and gain a deeper understanding of the factors contributing to start-ups' success or failure in these regions.

Shenzhen, located in southern China, has gained international recognition as a vibrant hub for technology and innovation. It has fostered the rapid growth of numerous successful start-ups, such as Huawei and DJI, and is home to some of the world's most extensive hardware manufacturing facilities. Shenzhen's success can be attributed to several key factors. Firstly, the city benefits from its proximity to Hong Kong, which serves as an international financial center and provides access to global markets. This geographical advantage has facilitated the flow of capital, talent, and ideas between the two regions, creating a rich ecosystem for start-ups.

Furthermore, Shenzhen has embraced a culture of rapid prototyping and iterative design, allowing entrepreneurs to iterate on their ideas and bring products to market quickly. The city's extensive network of suppliers and manufacturers enables start-ups to prototype and scale their products faster than many other regions. Additionally, Shenzhen's supportive government policies and financial incentives have played a crucial role in attracting entrepreneurs and investors, further fueling the growth of its start-up ecosystem.

However, Shenzhen also faces particular challenges. One prominent issue is intellectual property protection. Despite efforts to strengthen IP rights, the city has been plagued by concerns over patent infringement and counterfeiting. This has raised concerns among entrepreneurs and investors about the safety of their intellectual property, potentially deterring innovation and hindering the growth of the start-up ecosystem. Addressing these concerns and improving IP protection mechanisms will be vital for Shenzhen's continued development as a global start-up hub.

In contrast to Shenzhen, Hong Kong has traditionally been recognized as a global financial center rather than a hub for start-ups. However, Hong Kong has made significant efforts to foster its start-up ecosystem in recent years. The city boasts a highly developed infrastructure, a robust legal system, and a strong rule of law conducive to entrepreneurship. Additionally, Hong Kong's status as a global financial hub provides access to abundant capital and a diverse pool of investors.

Furthermore, Hong Kong bridges Mainland China and the international market, creating opportunities for start-ups to tap into both the Chinese market and global networks. The city's proximity to major markets in Asia, such as China, Japan, and South Korea, offers a strategic advantage for start-ups looking to expand their reach. Hong Kong's robust regulatory framework and transparent business environment instill confidence in investors, making it an attractive destination for start-up funding.

However, Hong Kong's start-up ecosystem also needs help. The high cost of living and limited availability of affordable office spaces pose obstacles for early-stage start-ups, particularly those with limited funding. Moreover, the competition from other regional start-up hubs, such as Singapore and Shanghai, further pressures Hong Kong to differentiate itself and attract talent and investment. Navigating these challenges will be crucial for Hong Kong to establish itself as a prominent player in the global start-up landscape.

In conclusion, the start-up ecosystems in Shenzhen and Hong Kong offer unique opportunities and face distinct challenges. Shenzhen's proximity to Hong Kong, the culture of rapid prototyping, and supportive government policies have propelled its growth as a leading technology and innovation hub. However, concerns regarding intellectual property protection need to be addressed to sustain its development. On the other hand, Hong Kong leverages its status as a global financial center, robust legal framework, and strategic location to nurture its start-up ecosystem. Overcoming high costs and competition challenges will be essential for Hong Kong to solidify its position as a prominent start-up hub. By critically engaging with these debates and understanding the intricacies of these ecosystems, we can gain new knowledge that informs future strategies and policies to foster innovation and entrepreneurship in these regions.

References

Blank, S. (2010). Why Start-ups Are Agile and Opportunistic—Pivoting the Business Model. Retrieved from https://steveblank.com/2010/04/12/whystartups-are-agile-and-opportunistic-%E2%80%93-pivoting-the-busi ness-model/

Casanova, L., & Miroux, A. (2018). Emerging Market Multinationals Reshaping the Business Landscape.

Transnational Corporations Review, 10, 270-298. https://doi.org/10.1080/19186444.2018.1560241

- Cohen, S. (2013). What Do Accelerators Do? Insights from Incubators and Angels. *Innov. Technol. Gov. Glob.*, 8, 19-25. https://doi.org/10.1162/INOV_a_00184
- Commerce Bureau of Shenzhen Municipality. (2015). Investment Guide on Invest in Shenzhen Builds a Winning

 Future.
 Retrieved

 from

http://en.commerce.sz.gov.cn/pr/publications/201506/W020150626423525945317.pdf

- Commerce Bureau of Shenzhen Municipality. (2019). *Invest in Shenzhen*. Retrieved from http://en.commerce.sz.gov.cn/pr/publications/201506/W020150626423525945317.pdf
- Compass.co. (2015). *The Global Ecosystem Ranking 2015*. Retrieved from http://startup-ecosystem.compass.co/ser2015/
- Cyberport Annual Report. (2019). *Hong Kong Cyberport Management Company Limited Annual Report, 2019*. Retrieved from https://www.cyberport.hk/en/about_cyberport/annual_report
- Davidsson, P. (2015). Entrepreneurial opportunities and the entrepreneurship nexus: A re-conceptualization. *Journal of Business Venturing*, 30, 674-695. https://doi.org/10.5465/amp.2017.0163
- Dempwolf, C., Auer, J., & Fabiani, M. (2014). Innovation Accelerators: Defining Characteristics among Start-up Assistance Organizations. https://doi.org/10.13140/RG.2.2.36244.09602
- Dirsehan, T., & Can, C. (2020). Examination of trust and sustainability concerns in autonomous vehicle adoption. *Technology in Society*, *63*, 1-6. https://doi.org/10.1016/j.techsoc.2020.101361
- Doing Business. (2020). Rankings. https://doi.org/10.1596/978-1-4648-1440-2
- Entrelink. (2018). Hong *Kong Start-up Index 2018*. Retrieved from http://www.entrelink.hk/wp-content/uploads/2019/04/EntreLink_HK-Startup-Index-Report_2018.pdf
- European Commission. (2020). China's R&D strategy Knowledge for policy European Commission. Retrieved from

 $https://ec.europa.eu/knowledge4policy/foresight/topic/expanding-influence-east-south/industry-science-innovation_en$

- Fernandez, V., Puel, G., & Renaud, C. (2016). The Open Innovation Paradigm: From Outsourcing to Open-sourcing in Shenzhen, China. Int. Rev. Spat. Plan. Sustain. Dev., 4, 27-41. https://doi.org/10.14246/irspsd.4.4_27
- Grilli, L., Latifi, G., & Mrkajic, B. (2019). Institutional determinants of Venture Capital Activity: An empirically driven literature review and a research agenda. J. Econ. Surv., 33, 1094-1122. https://doi.org/10.1111/joes.12319
- GSER. (2018). Global Start-up Ecosystem Report 2018 Start-up Genome, 2018. Retrieved from https://startupgenome.com/reports/global-startup-ecosystem-report-2018
- GSER. (2019). Global Start-up Ecosystem Report 2019 Start-up Genome, 2019. Retrieved from https://startupgenome.com/reports/global-startup-ecosystem-report-2019
- Hazarika, M., & Shivakumar, M. S. (2018). Challenges in Start-up Ecosystem, 2018. Retrieved from https://www.researchgate.net/publication/332591109_CHALLENGES_IN_STARTUP_ECOSYSTEM
- HK.Gov. (2020). Commerce and Economic Development Bureau Home, 2020. Retrieved from https://www.cedb.gov.hk/about/
- HKSTP Annual Report. (2019). Publications HKSTP, 2019. Retrieved from https://www.hkstp.org/publication/
- Invest in Shenzhen. (2019). Shenzhen Investment Limited, 2019. Retrieved from http://www.shenzheninvestment.com/html/investor_report.php?year=2020
- InvestHK. (2019). Hong Kong A Diversified Business Hub: Annual Report 2019. Retrieved from https://www.investhk.gov.hk/en/resource-centre.html
- Kanbach, D., & Stubner, S. (2016). Corporate Accelerators as Recent Form of Start-up Engagement: The What, The Why, and The How. J. Appl. Bus. Res., 32, 1761. https://doi.org/10.19030/jabr.v32i6.9822
- Keane, M., & Jing, Z. E. (2012). Renegades on the Frontier of Innovation: The Shanzhai Grassroots Communities of Shenzhen in China's Creative Economy. *Eurasian Geography and Economics*, 53, 216-230. https://doi.org/10.2747/1539-7216.53.2.216

- Kendig, C. E. (2016). What is Proof of Concept Research, and how does it Generate Epistemic and Ethical Categories for Future Scientific Practice? Sci Eng Ethics, 22, 735-753. https://doi.org/10.1007/s11948-015-9654-0
- Kohler, T. (2016). Corporate accelerators: Building bridges between corporations and start-ups. *Bus Horiz.*, 59, 347-357. https://doi.org/10.1016/j.bushor.2016.01.008
- KPMG. (2019). Greater Bay Area Update: Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area. https://doi.org/10.1142/S259172931950010X
- KPMG. (2020). *Future Hong Kong 2030*. Retrieved from https://home.kpmg/cn/en/home/insights/2020/04/future-hong-kong-2030.html
- Krouwel, M., Jolly, K., & Greenfield, S. (2019). Comparing Skype (video calling) and in-person qualitative interview modes in a study of people with irritable bowel syndrome an exploratory comparative analysis. *BMC Med Res Methodol*, *19*, 219. https://doi.org/10.1186/s12874-019-0867-9
- Lerner J., & Kaplan, S. (2016). Venture Capital Data: Opportunities and Challenges. In *Measuring Entrepreneurial Businesses: Current Knowledge and Challenges* (pp. 413-431). National Bureau of Economic Research, Inc: Cambridge, United States of America. https://doi.org/10.3386/w22500
- Lundberg, K. (2019). By Accident or Design? Shenzhen as a Global Hub for Digital Entrepreneurs. *SIPA's* Entrepreneurship & Policy Initiative Working Paper Series, 251-286. https://doi.org/10.2139/ssrn.3493331
- Mayring, P. (2014). Qualitative content analysis: theoretical foundation, basic procedures, and software solution. https://doi.org/10.1007/978-94-017-9181-6_13
- Mocker, V., Bielli, S., & Haley, C. (2015). *Winning Together: a guide to successful corporate-startup collaborations.* Retrieved from https://www.nesta.org.uk/report/winning-together-a-guide-to-successful-corporate-startup-collaborations/
- Mocnik, D., & Rus, M. *Slovenska podjetja in znacilnost start-up ekosistema: Slovenski podjetniski observatorij.* Univerza v Mariboru, Ekonomsko-poslovna fakulteta: Maribor Slovenia.
- Moore, J. (1993). Predators, and Prey: A new ecology of competition. *Harvard Business Review*. Brighton, United States of America.
- Shenzhen Government Online. (n. d.). Retrieved from http://english.sz.gov.cn/
- Sherwood, A. (2018). Demographics, and Entrepreneurship: Mitigating the Effects of An Aging Population. Fraser Institute: Vancouver, Canada.
- Spender, J., Corvello, V., Grimaldi, M., & Rippa, P. (2017). Start-ups, and open innovation: A literature review. *European Journal of Innovation Management*, 20, 1-30. https://doi.org/10.1108/EJIM-12-2015-0131
- StartmeupHK. (2019). Retrieved from https://www.startmeup.hk/wp-content/uploads/2019/12/SMUHK-Hong-Kong-Startup-Ecosystem-2019.pdf
- Start-up Genome. (2015). The Hong Kong Start-up Ecosystem Report Reinventing Hong Kong into an
Innovation Powerhouse. Retrieved from
https://startupgenome.com/blog/the-hong-kong-startup-ecosystem-report-reinventing-hong-kong-into-an-in
novation-powerhouse
- Sun, S. L., Chen, V., & Sanwar, S. (2019). Venture capital as an innovation ecosystem engineer in an emerging market. *International Business Review*, 28, 1-14. https://doi.org/10.1016/j.ibusrev.2018.02.012
- Sun, S. L., Zhang, Y., Cao, Y., Dong, J., & Cantwell, J. (2019). Enriching innovation ecosystems: The role of government in a university science park. *Global Transitions*, 1, 104-119. https://doi.org/10.1016/j.glt.2019.05.002
- Tripathi, N., Seppänen, P., Boominathan, G., Oivo, M., & Liukkunen, K. (2019). Insights into start-up ecosystems by exploring multi-vocal literature. *Information on Software Technology*, 105, 56-77. https://doi.org/10.1016/j.infsof.2018.08.005
- Van de Wiele, Z. (2017). *Entrepreneurial Ecosystems*. Master of Science in Business Engineering, Universiteit Gent. Faculteit Economie en Bedrijfskunde, Vakgroep.
- Warner, M. (2018). Special issue: Human resource management "with Chinese characteristics." Routledge: London, Great Britain. https://doi.org/10.1080/0958519042000192861

- Weiblen, T., & Chesbrough, H. (2015). Engaging with Start-ups to Enhance Corporate Innovation. *California Management Review*, 57, 66-90. https://doi.org/10.1525/cmr.2015.57.2.66
- WIPO. (2018). China Drives International Patent Applications to Record Heights; Demand Rising for Trademark and Industrial Design Protection. Retrieved from https://www.wipo.int/export/sites/www/pressroom/en/documents/pr 2018 816 annexes.pdf#annex1
- Wong, P., Michael, C. Y. L., & Jessica, J. (2019). *China 2019 Best Performing Cities*. Milken Institute: Santa Monica, United States of America.
- World Economic Forum. (2013). *Entrepreneurial Ecosystems Around the Globe and Company Growth Dynamics*. Retrieved from http://www3.weforum.org/docs/WEF_EntrepreneurialEcosystems_Report_2013.pdf

Notes

Note 1. QDA Miner by Provalis research -

https://provalisresearch.com/products/qualitative-data-analysis-software/freeware/

Note 2. Nasdaq Ventures is a global venture investing program focused on cultivating talent and technology advancement within financial services spurring innovation that aligns with and accelerates our vision to reimagine tomorrow's markets (Nasdaq, 2020).

Appendix

Interview Guideline

The interview questions are half structured and accommodate the interviewee's stakeholder role within the respected ecosystems. Also, due to the closeness of the two areas, it is assumed that some interviewees can provide insight into both ecosystems.

RQ1: How would you describe the start-up ecosystem of Shenzhen/Hong Kong?

SQ: What differentiates Shenzhen/Hong Kong from other global ecosystems?

SQ: What are the differences between Shenzhen/Hong Kong ecosystems?

SQ: What are the benefits of the geographic closeness of Shenzhen to Hong Kong?

SQ: What are the advantages/disadvantages of the ecosystem in Shenzhen/Hong Kong?

RQ2: What is the current situation for Shenzhen/Hong Kong start-up companies?

SQ: What is the impact of the coronavirus on the start-up ecosystem and start-ups?

SQ: What challenges/opportunities for start-ups due to the situation?

- SQ: What are the overall benefits for Shenzhen/Hong Kong start-ups regardless of the current situation?
- SQ: What influences start-up creation?
- SQ: What is the level of competition for young companies?
- SQ: Are there any challenges/problems that start-ups have to face?
- SQ: Are start-ups having challenges with funding?
- SQ: In which stages of development do they face funding challenges?
- SQ: How do start-ups deal with funding challenges? Options?
- SQ: Are there any other challenges related to the development stage of the start-up?
- RQ3: What support can start-ups receive from the ecosystem of Shenzhen/Hong Kong?
- SQ: How important is the role of the local government for start-ups?
- SQ: How does the local government support start-ups?
- SQ: What is the importance of educational institutions in Shenzhen/Hong Kong?
- SQ: Do universities play a role within the ecosystem of Shenzhen/Hong Kong?
- SQ: What other forms of support can the start-up receive?
- SQ: What do start-ups expect from accelerators in Shenzhen/Hong Kong?

Product development? Funding? Market expansion? Brand development? Access to working space?

SQ: Which are the most essential and popular accelerators?

- SQ: What is the state of local accelerators compared to foreign accelerators in Shenzhen/Hong Kong?
- SQ: Do start-ups prefer local accelerators? Why?
- SQ: Do start-ups work with foreign accelerators? Why?
- SQ: Is market expansion and entry essential to the acceleration process? To which markets?
- SQ: What are the most common program accelerators offer in Shenzhen/Hong Kong? Examples?
- RQ4: How are corporations involved in the start-up ecosystem of Shenzhen/Hong Kong?
- SQ: How do large companies engage/cooperate with start-ups in Shenzhen/Hong Kong
- SQ: What is the role of large companies/corporations for start-ups?
- SQ: Why are corporations important for the ecosystem of Shenzhen / Hong Kong?
- SQ: What are the reasons behind the engagement?
- SQ: How common is cooperation between start-ups and corporations?
- SQ: Are corporate-backed accelerators standard? Which ones?
- SQ: Are there any successful examples from Shenzhen/Hong Kong? Results?
- RQ5: Which are the most competitive industries in Shenzhen/Hong Kong?
- SQ: What is the level of innovation within the respected industries in Shenzhen/Hong Kong?
- SQ: What enables/triggers the innovation capabilities? How?
- SQ: How does this reflect on the start-up ecosystem of Shenzhen/Hong Kong?
- SQ: Is there a need for more qualified employees in specific industries? Why?
- SQ: What are the general human resources and talent levels within Shenzhen / Hong Kong?
- SQ: Which industries have the highest amount of talent? Why, How? Foreigners?
- SQ: What is the result of the respectable amount of talent?
- SQ: Are there any examples of disruptive innovation from Shenzhen/Hong Kong within these industries?

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